Knowledge Organiser

Year 10

Cycle Three

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	

Century	century.tech
Username:	
Password	

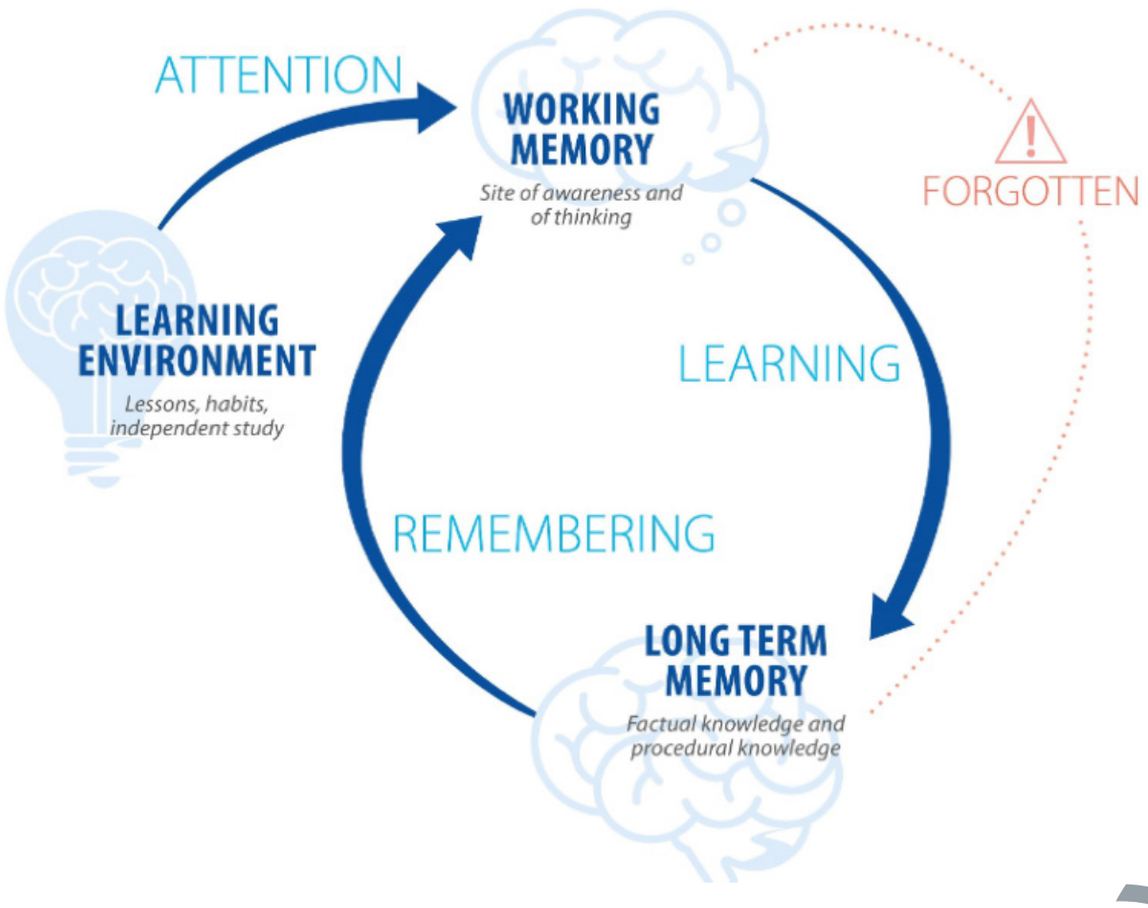
How do we learn?

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** 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 (or **KO**) 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.

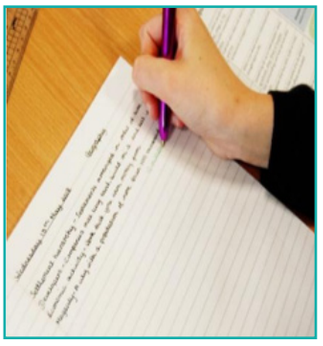
How can I self-quiz?

» **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

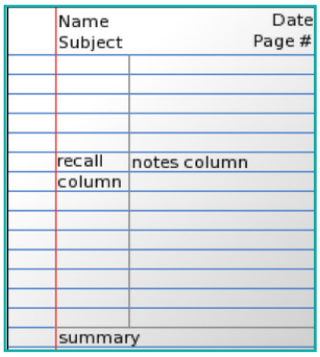
Check & Correct



» **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: **https://www.youtube.com/watch?v=C20EvKtdJwQ**

» **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 **https://www.youtube.com/watch?v=WtW9lyE04OQ.**

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 Sparx tasks, assignments must be completed to 100% in both maths and science.
For languagenut, all tasks must be completed to a minimum of 70% average score.

In addition to these standard tasks, your teachers may give you different or additional tasks to complete in the run up to your exams.

Independent study schedule

All your independent learning for the week is **set at 9 am on Friday** morning, and is due to be completed by **8 am on the hand in day.** This includes your online work such as Sparx, Languagenut and Bedrock; and subjects where you should use some of the self-quizzing techniques (such as flash cards or Cornell notes) in your green **Knowledge Organiser workbook.**

The schedule below shows how long you should spend on each task, and the day you are allocated time to complete the task, although you may choose to complete tasks at different times to fit around your other activities and social events. **Specialist support** from your teachers will be available during breaks on the designated day, but please try to seek help with independent learning as soon as a problem arises. Work in your KO workbook will be checked by your tutor on the morning of hand in day.

If you have not completed any of your independent study tasks by 8 am on Friday, you will be required to attend a **2 hour SLT detention** the following Monday to catch up. If you manage to catch up on outstanding work before the start of the SLT detention, you should still attend at 3 pm when your subject teacher will check your tasks and cancel your detention. For incomplete KO tasks, you will be given a same-day redcard break detention.

<table>
<tr><th colspan="7">Year 10 and 11</th></tr>
<tr><th></th><th>15 min</th><th>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 Language-nut and Statistics</td><td rowspan="5">Monday afterschool 3-5pm

You will not need to attend the detention if all homework is completed by 3pm 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 colspan="2">Options subject: Drama/Art/Music/Sports Science/Computer Science</td><td>Science</td></tr>
<tr><td>Friday</td><td colspan="2">MFL languagenut</td><td colspan="2">Statistics</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.

In addition, Year 11 pupils may use room S203 from **3:00 - 4:00** on Mondays, Wednesdays, Thursdays and Fridays for quiet study and exam preparation.

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

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 2	Week 1 - Electrolysis	Week 2 - Products of electrolysis
Key vocabulary • **Endocrine gland:** A type of gland that produces and releases hormones into the bloodstream to regulate the body's functions. • **Target organ:** A specific part of the body that is affected by a particular hormone. • **Ovaries:** Glands in the female reproductive system that produce eggs and hormones. • **Testes:** Glands in the male reproductive system that produce sperm and hormones. • **Correlation:** A relationship between two variables, where changes in one variable are associated with changes in another. • **Body Mass Index (BMI):** A measure of body fat based on height and weight, used as an indicator of overall health. • **Inert:** Refers to a substance that does not readily react chemically.	• **Electrolysis** is the decomposition of ionic compounds by passing an electric current through them. • Charged ions in either molten or aqueous ionic substances (**electrolytes**) are attracted to the opposite charged **electrodes**. • **Cations** (positive ions) move to the negative cathode. They gain electrons and are reduced. • **Anions** (negative ions) move to the positive anode. They lose electrons and are **oxidised**. • These are known as **RedOx** reactions and result in ions becoming atoms. • Changes at the electrodes can be shown with **half-equations**. E.g. • Cathode reaction: $Zn^{2+} + 2e^- \rightarrow Zn$ (Zn has been reduced) • Anode reaction: $2Cl^{2-} \rightarrow Cl_2 + 2e^-$ (Cl has been oxidised)	• The **products of electrolysis** depend on whether the salt is in solution (dissolved in water) or molten. • If the salt is **molten**, it simply splits into its ions, E.g. NaCl forms Na^+ and Cl^-. • If the salt is an **aqueous solution**, the water will also split into its ions, the products depend on: • if **cations** are **less reactive than hydrogen**, the metal is produced. • if **cations** more **reactive than hydrogen**, hydrogen is produced. • if **anions** are **halogens**, the halogen gas is produced. • if **anions** are not halogens, **oxygen gas** is produced. • Electrolysis of **copper sulfate** can be completed using **graphite** or **copper electrodes**. • With copper electrodes, the anode will **lose mass** and the cathode will **gain mass**.
Week 3 - Health	**Week 4 -Defence against disease**	**Week 5-Immunity**
• **Health** is "the state of complete physical, mental and social well being". • **Disease** can be caused by lifestyle risk factors such as: Diet, Smoking, Levels of exercise, Drug/alcohol misuse. • These risk factors can lead to **non-communicable** such as cancer and diabetes. • **Communicable diseases** include food poisoning, AIDS, COVID-19, Flu and chalara ash dieback (in trees). • **Microorganisms** that cause communicable diseases are called **pathogens**. These can be: • **Bacteria** E.g. salmonella • **Viruses** E.g. coronavirus • **Fungi** E.g. *candida* that causes Athlete's foot. • **Protists** E.g *Plasmodium* that causes Malaria • Different types of disease may **interact**. This can mean that the presence of one disease can lead to a higher chance of developing another disease.	• Pathogens can spread between hosts in a number of ways: • **Physical contact** or transfer of body fluids, such as STIs, e.g. HIV which causes AIDS. • **Waterborne**, such as the bacteria which causes cholera. • **Airbourne**, such as coronavirus which causes COVID-19. • **Animal vectors**, such as mosquitos that carry the protist which causes malaria. • Our bodies defend against disease using: • **Physical barriers** including our skin, mucus and ciliated epithelial cells in our respiratory system • **Chemical defences** such lysozymes in our tears, saliva and stomach acid. • If pathogens get past the body's natural defences they will cause an **infection**. Bacterial infections are treated with **antibiotics**.	• Your immune system includes **white blood cells**, one type of which are called **lymphocytes**. • Lymphocytes recognise proteins on the surface of pathogens called **antigens**. • Once they detect foreign antigens, Lymphocytes will: • **Ingest** and destroy pathogens. • Produce **antibodies** which attach to the bacterial antigens, signalling their presence. • Produce **antitoxins** which neutralise harmful chemicals produced by pathogens. • Once exposed to a pathogen, your immune system produces **memory lymphocytes** which are able to respond more quickly if you are exposed to a pathogen again. • **Vaccinations** use dead or weakened pathogens to produce an immune response without exposing you to the actual disease.

Key vocabulary

- **Ore:** A naturally occurring rock or deposit that contains valuable minerals that can be mined and processed to extract useful metals or other minerals.
- **Elastic potential energy:** energy stored in an object when it is stretched or compressed. It is measured in Joules (J) and shown by the letter *E* in equations.
- **Spring constant:** A measure of the force required to compress or extend a spring, often used to describe the elasticity of a spring.
- **Elastic object** An object that returns to its original shape after being deformed by an applied force, such as a spring or rubber band.
- **Antibiotic:** A type of drug that kills or slows the growth of bacteria, used to treat bacterial infections.
- **Displacement reaction:** A type of chemical reaction in which a less reactive element is replaced by a more reactive element in a compound.
- **Immunity:** The ability of the body to resist and fight infections, diseases, and other harmful substances.

Week 6 - Nuclear radiation

- The **Nuclear model** of the atom (developed over time) describes the numbers, charges and locations of subatomic particles in an atom.
- When atoms are **energised**, electrons can jump to higher orbits. Energy is emitted as **visible light** when the electron returns to its original orbit.
- Atoms that absorb sufficient radiation can lose electrons and become **ionized**.
- Unstable nuclei can emit **ionizing radiation** in the form of particles and/or energy to become stable.
- Sources of **background radiation** include: radon gas, food, cosmic rays, medical uses and rocks.
- Types of ionizing radiation:

	Description	Charge	Rel. mass
Alpha (α)	2 protons + 2 neutrons	+2	4
Beta (β)	High energy electron	-1	1/1835
Positron (β^+)	High energy particle	+1	1/1835
Gamma-ray (γ)	EM wave	0	0

Week 7 - Nuclear radiation

- **Nuclear decay** is a random process and cannot be predicted
- Radioactive decay is shown by nuclear equations:
- **Alpha decay** $^{235}_{92}U \longrightarrow {}^{231}_{90}Th + {}^{4}_{2}He$
- **Beta decay** $^{235}_{92}U \longrightarrow {}^{235}_{93}Np + {}^{0}_{-1}e$
- Radiation levels can be measured in counts per minute using a **Geiger-Muller** (GM) tube
- The activity (measured in Bq) of a radioactive source decreases over time. It is shown with a **half-life** graph.
- The half-life of a radioisotope is **constant**.
- The half-life of radioisotopes can be used in **carbon dating** to determine the age of substances.
- Ionizing radiation can cause **mutations** in DNA which may lead to cancer. Gene mutations may be passed on in gametes.
- Ionizing radiation is used in smoke alarms (α), thickness monitoring (β) and as radioactive tracers (γ) in medical procedures.

Week 8 - Reactivity

- The **reactivity series** shows metals in order of their reactivity.

Most reactive **Least reactive**

K Na Ca Li Mg A C Zn Fe Pb H Cu Ag Au

- **Displacement reactions** are examples of redox reactions as both reduction and oxidation occur at the same time.
- Metals can be **extracted** from **ores** found in the Earth's crust. Metals extraction from ores involves reduction.
- Metals that are **less reactive** than **aluminium** are extracted by heating them with carbon as a displacement reaction.
- Metals that are more reactive than aluminium are extracted using **electrolysis**.
- **Unreactive** metals are found in the Earth's crust as the uncombined elements.

Week 8 - Life cycle assessment and dynamic equilibrium

- **Life cycle assessments** are completed before a product is created, and consider: **obtaining the raw material on the environment, manufacturing the product, using the product** and **disposing of the product.**
- In **reversible reactions**, products can reform reactants.
- A double arrow (⇌) is used to show the reaction can proceed in both directions. Eg.

  Ammonium chloride ⇌ ammonia + hydrogen
- **Dynamic equilibrium** occurs when forward and backward reactions occur at the same rate, and the % of reactants and products does not change.
- The **Haber process** is a reversible reaction used to produce ammonium from nitrogen and hydrogen.
- The equilibrium position can be affected by temperature and pressure, forcing the reaction towards the products.
- The reaction is carried out at **450 °C** and **200 atm**, using an iron catalyst.

Week 10 review - Cell transport

- Most **Eukaryotic** cells have the same **organelles**: including nucleus, cytoplasm, cell membrane.
- Cells have a **partially permeable membrane** that allows some substances through it but not others.
- Dissolved substances move into and out of cells by **diffusion** and **active transport**.
- Water moves in and out of cells by osmosis.
- During osmosis, water molecules move from where there are more of them (a higher concentration) to where there are fewer of them (a lower concentration).
- A difference between two concentrations forms a **concentration gradient**.
- The bigger the concentration gradient, the faster the rate of osmosis occurs.
- Osmosis can cause cell tissues to **gain or lose mass** as water moves in or out of cells.

Year 10 - Computing - Cycle 3	Week 1 - System and Utility Software	Week 2 - Robust Software
Key vocabulary/content/ideas • **System Software:** Manages and controls the basic operations of a computer, providing a platform for other software applications to run. Examples include operating systems like Windows, macOS, and Linux. • **Robust Software:** Software that functions as expected and will not crash if invalid inputs are entered. • **Translation:** The process of converting instructions from a high level language into a low level language. • **Network:** Two or more devices connected together in order to share both data and resources (printers, internet connections).	• **System Software:** Manages and controls the basic operations of a computer, providing a platform for other software applications to run. Examples include operating systems like Windows, macOS, and Linux. • **Utility Software:** Programs designed to perform specific tasks or functions to enhance system performance, manage resources, and optimize various aspects of computer operations. • **File Management:** File management involves creating, copying, moving, and deleting files and directories. • **Backup:** Creating copies of important data to prevent data loss in case of hardware failure or accidental deletion.	• **Robust Software:** Software that functions as expected and will not crash if invalid inputs are entered. • **Bad Programming Practices:** Where code is written badly and errors occur upon execution. The code may also be difficult to read due to lack of comments, white-space or non-specific variable names. • **Code Reviews:** Where software developers review the code created in order to find errors. • **Audit Trail:** This is where computer scientists keep records of developments and changes made to software as it is being developed. This helps to identify errors and improves accountability.
Week 3 - Programming Languages	**Week 4 - Networks**	**Week 5 - Types of Connection**
• **High Level Language:** A programming language that is written in human-like commands. This will need to be translated into a low level language in order for the computer to understand it. • **Low Level Language:** A programming language written in machine code or mnemonics. These are usually direct instructions for the CPU. • **Translation:** The process of converting instructions from a high level language into a low level language. • **Compile**: Translating all programming instructions at once. This creates an executable file. • **Interpret**: Translating and executing instructions one line at a time.	• **Network:** Two or more devices connected together in order to share both data and resources (printers, internet connections etc). • **LAN (Local Area Network)**; Two or more network enabled devices connected together across a small geographical area. • **WAN (Wide Area Network):** Two or more local area networks connected together over a larger geographical area. • **Transmission Media:** The cables and other methods of data transfer that enable data to move between devices on a network. • **Bandwidth:** How much data can be transferred through a network per second. • **Latency:** The time taken between transmitting and receiving data	• **Twisted Pair Cable:** Where 4 pairs of copper wires are wrapped around each other in order to prevent EM interference. • **Fibre Optic:** Where light pulses are sent down strands of glass fibre in order to transfer data. • **WiFI (Wireless Fidelity):** A transmission technology that follows the WiFi protocol in order to transmit data wirelessly (through the use of radio signals). • **Router:** A device that bridges a connection between two separate networks. The internet is a vast network of routers all connecting with one another. • **Wireless Access Point:** Hardware that enables wirelessly enabled devices to connect to a network.

Key vocabulary/content/ideas	Week 6 - Network Topologies	Week 7 - The Internet
• **Network Topology**: The physical layout of a network; including how devices are arranged. • **Packet:** The chunks of data transmitted from one IP address to another, in order to facilitate Internet traffic. • **TCP(Transmission Control Protocol):** A Protocol (set of rules) for transferring data from one location to another. It requires confirmation that data has been received. • **Vulnerability:** Where part of the software of the hardware of the network can be exploited by a criminal, such as a hacker, in order to gain access to it. • **Authentication:** Using methods such as a password or biometrics to grant access.	• **Network Topology**: The physical layout of a network; including how devices are arranged. • **Bus topology:** All devices on the network are connected to a single cable, known as the backbone. A terminator at each end absorbs signals that have reached the end of the cable. • **Star Topology:** Every device is directly connected to a central node, which is likely to be a switch. All data traffic passes through the central node; from one device to another. • **Mesh Topology:** Devices connect directly to one another, without the need for a central node.	• **Internet:** A global, wide-area-network of devices that are able to share data with one another. • **Router:** A device that bridges a connection between two networks. By bridging between thousands of individual networks we have been able to create the internet. • **IP Address:** Every device connected to the internet, and every router, has a unique IP address. This is used to identify the location and be able to forward data to it. • **Packet:** The chunks of data transmitted from one IP address to another, in order to facilitate Internet traffic.
Week 8 - TCP/IP Stack	**Week 9 - Network Security Vulnerabilities**	**Week 10 - Preventing Vulnerabilities**
• **TCP(Transmission Control Protocol):** A Protocol (set of rules) for transferring data from one location to another. It requires confirmation that data has been received. • **IP (Internet protocol):** A protocol (set of rules) that governs how data is transmitted from one IP address to another. • **Application Layer:** A set of protocols governing what will be done with the data once it is received (what type of application it will open with). • **Internet Layer:** A set of protocols governing how the data will travel. • **Transport Layer:** A set of protocols governing how packets are ordered and what additional communication is needed • **Network Layer:** How the packet will travel across the recipient network.	• **Vulnerability:** Where part of the software of the hardware of the network can be exploited by a criminal, such as a hacker, in order to gain access to it. • **Penetration Testing:** Where someone with hacking skills attempts to infiltrate a network, in order to help the organisation better defend itself. • **Updates:** These are usually software patches that are created in order to fix vulnerabilities in a specific program. They must be regularly downloaded in order to keep the software up-to-date. • **Social Engineering:** Where individuals within an organisation can be manipulated to grant access to an attacker. This can often be through pretexting(pretending to be in an official capacity).	• **Access Control:** Only allowing key individuals within an organisation to access critical parts of a system. • **Authentication:** Using methods such as a password or biometrics(retina / fingerprint scanning) to grant access. • **Multi-factor Authentication:** Requiring a combination of two or more forms of authentication. • **Physical Security Methods:** Only allowing access to the system to people with particular physical methods such as a door key / key card. • **Encryption:** Scrambling communications so they are unintelligible. • **Firewall:** A device or piece of software that prevents uninvited communication with a network or system.

Year 10- French- Cycle 3

Classroom interaction language

- **Salut** - Hi
- **Ça va? –** How are you? (How is it going?)
- **Ça va bien –** I am well (it is going well)
- **Ça 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?
- **On va… -** We are going to…
- **On va parler –** we are going to talk
- **On va jouer** – we are going to play
- **On va écouter** – we are going to listen
- **Trois, deux, un** – Three, two, one
- **Regardez-moi** – Look at me

Week 1 – key vocabulary and content

l'alcool	alcohol
boire	To drink
devoir	To have to
essayer	To try
éviter	To avoid
Je devrais	I should
La faiblesse	weakness
garder la forme	To stay healthy
malsain(e)	unhealthy
Je pourrais	I could

Week 2 - key vocabulary and content

Rester en bonne santé	To stay in good health
sain(e)	healthy
L'obésité	obesity
équilibré(e)	balanced
mener à	To lead to
renoncer	To give up
s'entrainer	To train
éliminer	To eliminate
faire un regime	To go on a diet
perdre du poids	To lose weight

Week 3 - key vocabulary and content

une crise cardiaque	A heart attack
épuiser	To exhaust
avoir sommeil	To be sleepy
fumer	To smoke
s'enivrer	To get drunk
se détendre	To relax/unwind
avoir peur de	To be afraid of
J'ai peur de	I am afraid of (have fear of)
accro	addicted
dépendant(e)	Addicted
devenir	To become

Week 4 - key vocabulary and content

les matières gras	fats
les produits laitiers	Dairy products
les sucreries	Sugary treats
Si je pouvais	If I was able
Si j'avais le choix	If I had the choice
Je suis enrhumé(e)	I have a cold
J'ai pris un coup de soleil	I have sunburn
J'ai vomi	I have been sick
J'ai mal à la tête	I have a headache
J'ai mal au dos	I have a back ache

Week 5 - key vocabulary and content

le corps	The body
Le coeur	The heart
les poumons	The lungs
le sang	The blood
Le cerveau	The brain
les dents	Teeth
La peau	Skin
La jambe	Leg
L'épaule	shoulder
Le bras	arm

Classroom interaction language

- **un stylo violet –** a purple pen
- **un stylo noir –** a black pen
- **Est-ce que je peux…? –** Can I…?
- **Est-ce que je peux avoir…?–** Can I have…?
- **Est-ce que je peux faire…?–**Can I do…?
- **Est-ce que je peux faire les points? –** Can I do the points?
- **Est-ce que je peux aller aux toilettes?**– Can I go to the toilet?
- **C'est vrai –** it is true
- **C'est faux –** it is false
- **C'est correct** – it is correct
- **C'est juste** – it is fair
- **A mon avis** – In my opinion
- **Je pense que** – I think that
- **D'une part….d'autre part…** - on the one hand…on the other hand

Week 6 - key vocabulary and content

allumer	To switch on
détruire	To destroy
endommager	to damage
éteindre	To switch off
le chauffage central	The central heating
le robinet	The tap
protéger	To protect
Il faut	You must
Il ne faut pas	You must not
Afin de	In order to

Week 7 - key vocabulary and content

menacer	To threaten
empêcher	To prevent
faire du recyclage	To do the recycling
gaspiller	To waste
l'effet de serre	The greenhouse effect
l'emballage	Packaging
Les déchets	rubbish
l'embouteillage	Traffic jam

Week 8 - key vocabulary and content

l'inondation	A flood
le gaz d'échappement	Exhaust fumes
L'incendie	Fire
le réchauffement de la terre	Global warming
Le déboisement	deforestation
les ordures	rubbish
les produits bios	Organic products
inquiétant	worrying
Économiser	To save
L'espoir	hope

Week 9 - key vocabulary and content

Si c'était possible	If it were possible
on devrait	We should
on doit	We have to
aider	To help
Le faim	hunger
La paix	peace
le SDF	Homeless person
le sans-abris	Homeless person
le quartier défavorisé	Deprived area
L'organisation caritative	Cahrity organisation
Le chômage	unemployment
la pauvreté	Poverty
Le bénévolat	Volunteer work

Week 10 - key vocabulary and content

Revison of all previous vocabulary/structures

Year10 - Geography- Cycle 3

Key Vocabulary

Transportation –

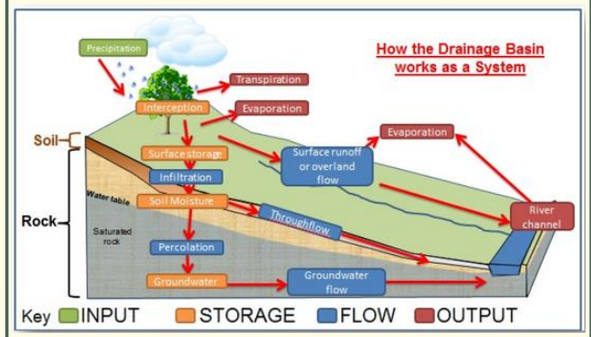
Suspension - lighter material floats within the water.

Traction - larger rocks roll along the sea bed.

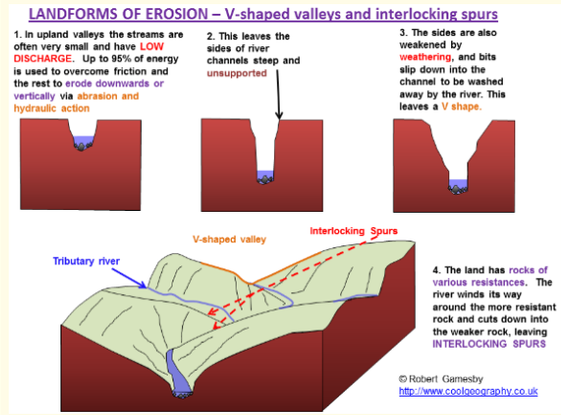
Solution - some material, such as chalk, gets dissolved into the water.

Saltation - smaller rocks, if they are too heavy to be suspended, hop along the sea bed.

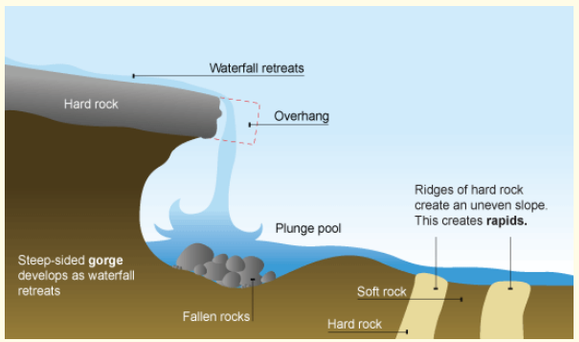
Week 1 – Hydrograph



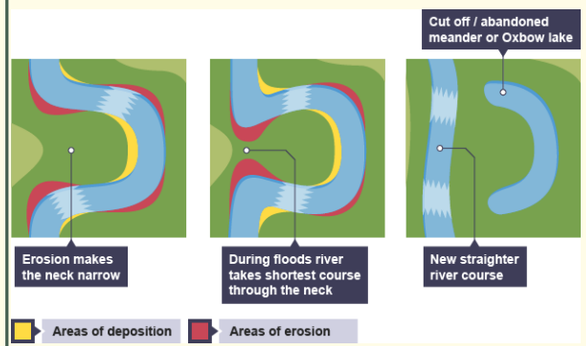
Week 2 - V Shaped Valleys



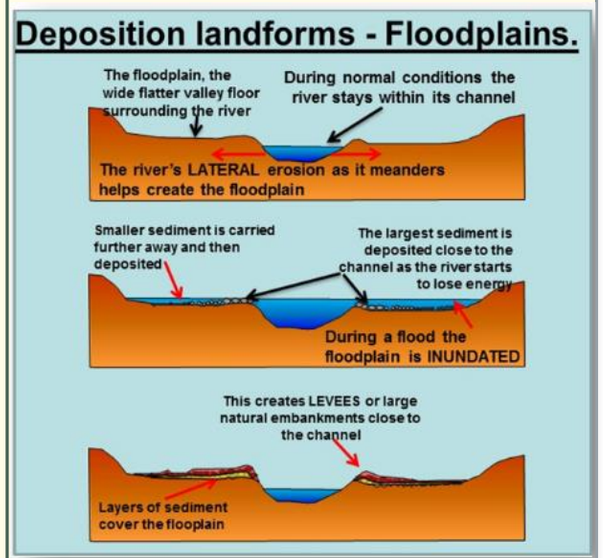
Week 3 – Waterfalls & Gorges



Week 4 – Meander & Oxbow Lakes



Week 5 – Levees



Key Vocabulary

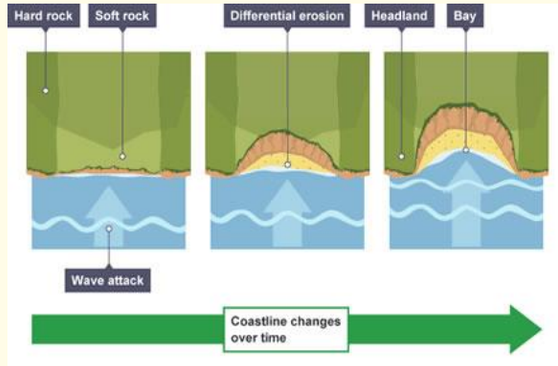
Erosion -
Hydraulic Action: When waves crash against a cliff, they force air into cracks in the rock. The force of this trapped air causes the rock to weaken and eventually break.

Abrasion: This is where sediment being carried by the water wears away the surface, almost like sandpaper.

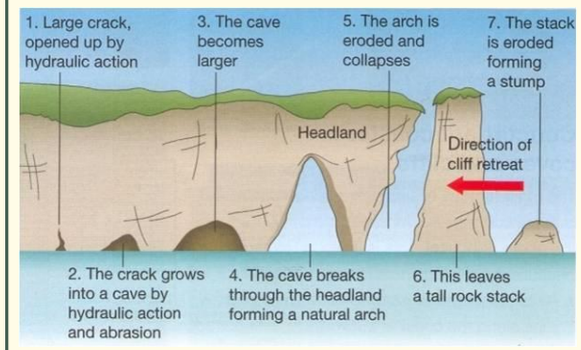
Solution: Chemicals in the water dissolve certain types of rock such as limestone. However, there is some debate about how much coastal erosion this causes.

Attrition: Rocks crashing into each other result in them becoming smoother and more rounded.

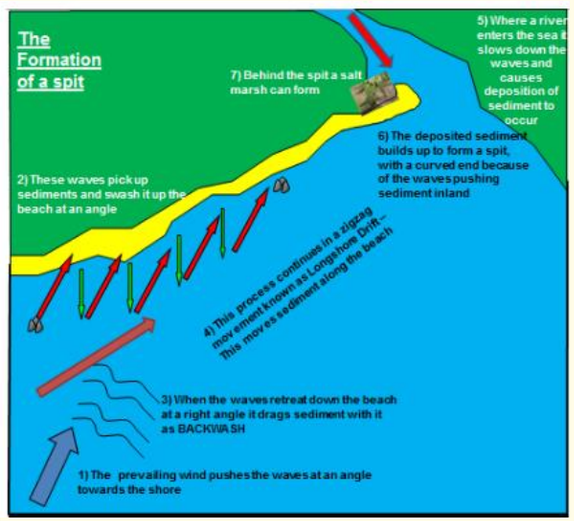
Week 6 – Headland & Bay



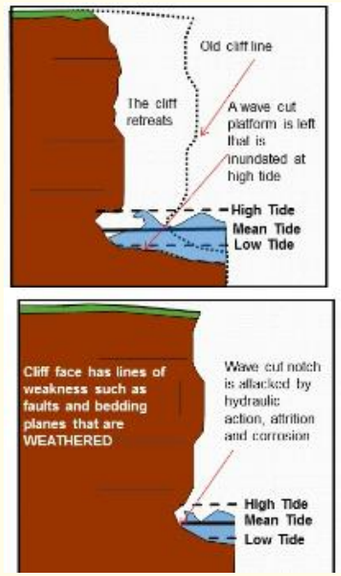
Week 7 – Cave, Arch, Stack, Stump



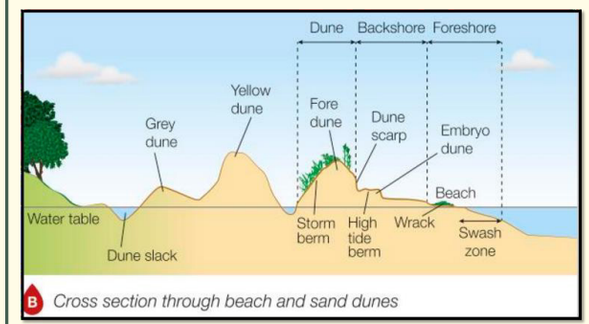
Week 8 – Spit



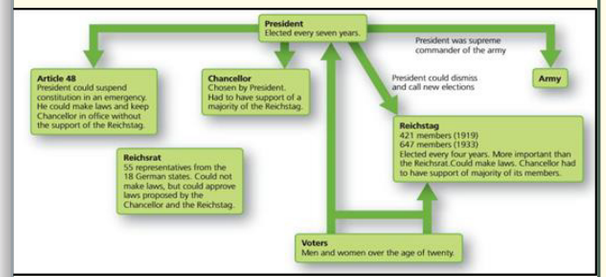
Week 9 – Wave-cut platform

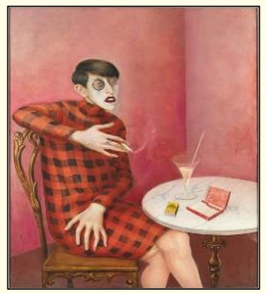


Week 10 – Sand dunes



B *Cross section through beach and sand dunes*

Year 10 - History – Cycle 3	Week 1 – Aftermath of WW1	Week 2 - The Weimar Constitution
Key images 	After WWI a new government was established in Germany, which was accountable to the **Reichstag** rather than the **Kaiser.** In order to establish peace after WWI the USA insisted that the Kaiser was removed from power. On the 9th November, Kaiser Wilhelm **abdicated**. The new government was led by **Chancellor** Friedrich **Ebert** and agreed to **Armistice** based on America's **Fourteen Points.**	In January 1919 an election took place but no party had a direct majority. They had to form a **coalition** which Ebert (of the **Social Democratic Party –SPD)** became President of. They joined with the Catholic **Centre Party (ZP)** and the **German Democratic Party (DDP).** A coalition meant that there were some weaknesses to the government.
Week 3 –	**Week 4 – Treaty of Versailles – 28th June, 1919**	**Week 5 – Opposition to Weimar**
Positive – Electorate had a say. Members of the Reichstag and the President were voted for. **Negative** – Article 48meant that the Pres. Could overrule the Reichstag. 	**G** – Guilt Clause. Article 231 of the Treaty of Versailles forced Germany to take full responsibility for World War One. **A** – Army reduced. German army restricted to 100,000 men, zero tanks, zero aircraft, zero submarines and 6 battleships. **R** – Reparations. France and Belgium owed £6.6bn as damages from World War One. Germany forced to pay. **G** – German territory lost. Germany lost 13% of territory including Alsace-Lorraine (to France) and Posen (to Poland). Germany also lost control of the Saar coalfields for 15 years. **Le** – League of Nations created as a peace keeping body to prevent future wars. Germany not invited to join	**Dolchstoss** - The German people felt the government had stabbed them in the back (**Dolchstoss).** They called the government the **November Criminals.** Threat from the left - The **Spartacists**, in January 1919, inspired by the left-wing **Bolshevik** revolution in Russia, set up the Communist Party and tried to overthrow the government. This was put down by the **Reichswehr** & the **Berlin Freikorps** Threat from the right - The **Kapp Putsch** (right-wing) was attempted in March 1920. Ebert wanted to disband the **Freikorps** so they joined with the Reichswehr in Berlin. Led by Wolfgang Kapp they seized Berlin. Ebert asked **Trade Unionists** & **Civil Servants** not to support it, and the Putsch collapsed.

Key Images	Week 6 – Ruhr Occupation – January 1923	Week 7 – Hyperinflation and devalue of the German Mark
Week 7  **Week 8** 	When Germany couldn't pay their reparations, the French moved into the **Ruhr** to take goods for themselves. The Germans went on strike & sabotaged their work, setting factories alight and breaking pumps. This meant that production from the **Rhineland** was very slow, making Germany poorer. Ebert promised workers that they would still receive pay if they took part in passive resistance.	The government printed more money to pay the strikers and their reparations which, coupled with the slow production in the Ruhr, led to **hyperinflation** where the currency became virtually worthless. By **November 1923 a loaf of bread cost 200bn Marks.**
Week 8 – Economic recovery – Stresemann	**Week 9 – Foreign Recovery**	**Week 10 – Social changes**
In 1923 Gustav **Stresemann** was **Chancellor** and is largely credited with the economic recovery of Germany. **The Dawes Plan (1924)** changed the reparations schedule to something which was more manageable (£50m a year) and loaned Germany $25bn. It also meant that French troops would leave the Ruhr. **The Rentenmark** was the new currency, issued in limited amounts. Once it worked for a year, it was converted to the **Reichsmark,** based on gold reserves. **The Young Plan (1929)** was developed by US banker, Young. He reduced the reparations figure from £6.6bn to £2bn and extended the time the Germans had to pay it by 59 years.	**The Locarno Pact (1925)** helped German relations with France, Britain, Belgium & Italy by agreeing borders previously imposed by the Treaty of Versailles. Germany finally agreed to these. German politicians an **EQUAL** part in negotiations **The League of Nations** agreed to admit Germany in 1926. This helped the Germans feel as though they were no longer humiliated. **The Kellogg-Briand Pact** was signed in 1928, along with 64 other countries. It said they could have armies for self-defence and would resolve disagreements peacefully.	**Wages** had increased by over 10% by 1928. Although this helped the working class, the middle classes had been bankrupted by hyperinflation. Unemployment amongst the middle class increased. More **houses** were being built: 2million + between 1924-1931, which reduced homelessness. **Women** were given the vote and could work in a variety of areas: teaching, civil service etc. Art, architecture, literature and theatre began to change and become more rich & diverse. Germany became a much more liberal place as demonstrated by artists such as Otto Dix.


Cranbrook Education Campus
Grow • Thrive • Achieve