

Year 7

Booklet 1
2024/2025

Independent
Study

Name & LF:



Cabot
Learning
Federation

How to Complete Independent Study

You will have three pieces of IS due every week, which will be checked by your teacher of the subject due.

You teachers will set your IS on Bromcom and tasks for each subject are outlined in this booklet as a reminder.

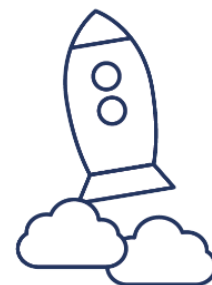
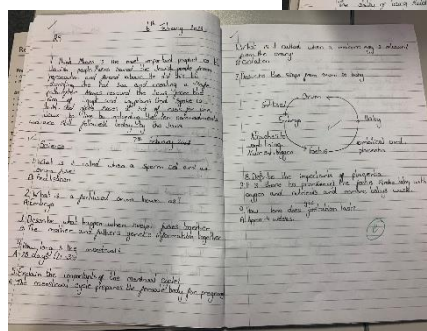
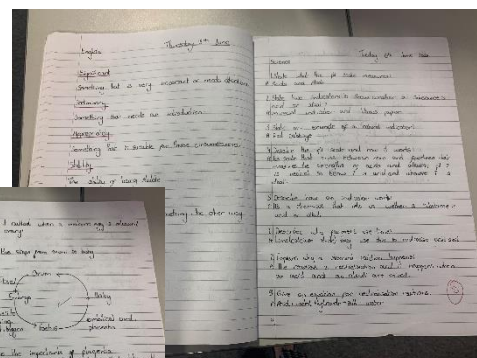
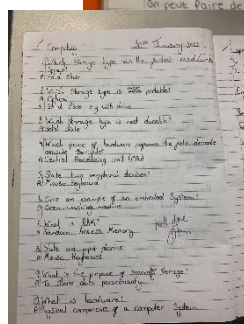
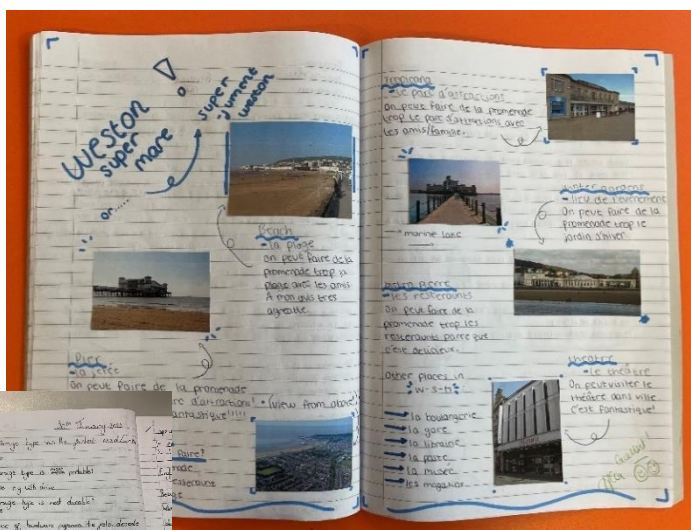
To complete your independent study you will need this knowledge organiser and your grey, IS exercise book. Most IS is set using this booklet. Maths will be set online in SPARX.

You can access further support or computers in IS Club, which is open every day in LS3 from 3:00pm-3:50pm or every lunch time in G7.



Contents

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Supporting Independent Study Completion

Completed IS is valued by teachers as it extends and supports the learning in lessons as well as embedding independent learning habits. It is rewarded with achievement points.

If students are struggling to complete IS they will be asked to attend a support session after school the following week to address any barriers and ensure the work is completed successfully.

Tasks

Subject	Year 7 Task
English	<p>Write out your understanding of the definitions and create two different sentences showing your understanding of the word.</p> <p style="text-align: center;">OR</p> <p>Create flashcards which display the words and their definitions written in your own words. However, students could also complete the following:</p> <ul style="list-style-type: none"> • Challenge: Complete both the tasks above. • Extra Challenge: Using the template at the end of the booklet, create a Frayer model for one or two of the words. (Etymology= where the word comes from) • Super Challenge: Create a word map. Start with the original word in the middle and add words you associate with that word around it, then words you associate with the secondary words OR write a short story of your choice that includes the key words for the week.
Maths	<p>You will need to log into your SPARX account to complete your IS. Every student needs to complete 100% of the compulsory tasks and can also complete the XP Boost and Target to support your progress. Write your bookwork codes in your IS exercise book and complete the bookwork checks online. If you get stuck, watch the associated video or check in with your maths teacher before the IS is due.</p>
Science	<p>Complete the worksheet in the knowledge organiser booklet.</p>
Humanities	<p>Complete the questions set on Bromcom. You can request a paper copy of the questions from your teacher if needed.</p>
Computing	<p>Using the knowledge organiser please write 10-15 high quality questions and answers. Write them in the style of the nibble questions. Use the command words state, define, describe, explain etc. Do not include any yes/no or true/false questions.</p>
DT	<p>For Design Tech, please draw the 3D (isometric) shape in the space provided on the sheet. keep to the lines, use a RULER and a PENCIL.</p> <p>For Food Tech, use the eat well plate to construct 10 knowledge recall questions.</p>
MFL	<p>You will have been given an IS sheet by your teacher in lesson. You need to complete the sheet using your knowledge organiser. If you do not have the sheet, you need to see your teacher before your second lesson this week to get one.</p>
Careers	<p>Your task will be set in UniFrog. You'll find your log in details in an email from UniFrog. You can use UniFrog at any time to find out more about career pathways, post-16, the local and national labour market and to find out more about you and your skills.</p>
Music	<p>Select a Major Composer of the Classical Period. Choose one of their compositions to listen to and make notes on. Write a short paragraph 200-250 words on your findings, including some history on the composer. Further details on Bromcom.</p>
Art	<p>Draw a detailed portrait of someone you admire. It could be a family member, friend or someone famous. It should be A4 size, and you may use pencil, paint or oil/chalk pastels. Write what this person means to you. Examples of what you could do will be shown before the deadline.</p>
Drama	<p>Find out about the extra-curricular opportunities available within drama and the rest of the performing arts subjects. You can find out more about clubs and performance opportunities in this booklet and from your drama teacher.</p>
PE	<p>Find out more about the extra-curricular opportunities available within PE and performance. Try a range of clubs to explore different sports and activities. There are opportunities to represent your college or Hans Price Academy in a range of teams and event across the year. Find out more from your PE teacher.</p>

Independent Study Hand-In Schedule

The schedule below shows which pieces of independent study will be due each week. They will be checked by the teacher of the subject due in the lesson that week.

Date	Schedule	
Term 1		
16 th Sept '24	English	
	Maths	
	Science	
23 rd Sept '24	English	
	Maths	
	MFL	
30 th Sept '24	English	
	Maths	
	Humanities	
7 th Oct '24	English	
	Maths	
	DT	
14 th Oct '24	English	
	Maths	
	Careers	
21 st Oct '24	English	
	Maths	
	Science	
Term 2		
4 th Nov '24	English	
	Maths	
	Science	
11 th Nov '24	English	
	Maths	
	Music	
18 th Nov '24	English	
	Maths	
	Humanities	
25 th Nov '24	English	
	Maths	
	Science	
2 nd Dec '24	English	
	Maths	
	Computing	

Date	Schedule	
9 th Dec '24	English	
	Maths	
	MFL	
16 th Dec '24	English	
	Maths	
	DT	
Term 3		
6 th Jan '25	English	
	Maths	
	Science	
13 th Jan '25	English	
	Maths	
	Humanities	
20 th Jan '25	English	
	Maths	
	Art	
27 th Jan '25	English	
	Maths	
	Computing	
3 rd Feb '25	English	
	Maths	
	Science	
10 th Feb '25	English	
	Maths	
	Careers	

Extra-Curricular	



How else can I use my Knowledge Organiser?

The Knowledge Organisers in this booklet will help you learn a wide range of knowledge to prepare you for your lessons as well as the multiple-choice tests at the end of this block of learning. To get the most out of your Knowledge Organisers, you should be learning sections and then testing yourself. There will be set tasks each week based on the Knowledge Organisers, and there are some optional ideas below that you could try in addition to this if you wish.

Key vocabulary:

- Highlight key terms for a subject and look up the definitions
- Write a sentence using the key terms you have highlighted
- Practice spellings – cover, write and check to learn the correct spellings of key terms

Quizzes/questions:

- Write some self-quizzing questions based on the information read
- Test your friends and family on their knowledge of a subject
- Get your parents/carers to ask you some questions
- Create exam style questions and then swap with a friend

Reflection:

- Before a topic – rank order your confidence and then revisit at the end of the topic, rank again and consider where you have improved
- Add more detail to the Knowledge Organiser after you have been taught that topic
- Traffic light (red, amber, green) each box based on how confident you are

Revision:

- Create 2-3 flashcards each week based on each box
- Create a mind map showing the key information from the Knowledge Organiser
- Read ahead to develop skills, knowledge and understanding so you feel more confident before lessons

General use:

- 50 words, 30 words, 10 words – summarise the information on the Knowledge Organiser from 50 words to 30 words to 10 words
- Pictionary – learn the definitions then draw it for your friends/family to guess
- Elevator pitch – summarise the information in a box/whole Knowledge Organiser for a 30 second presentation
- Generation game – like the famous conveyor belt – look at the Knowledge Organiser and then try to remember as many items as possible
- Key term stories – write a short story using 6 key words that are found on the Knowledge Organiser
- Scavenger hunt – read through the Knowledge Organiser with a friend/family member and see who can find specific information/facts first
- Read, cover, check – read the box, write out what you can remember, check what you have missed (then add in purple pen)

“Education is the passport to the future, for tomorrow belongs to those who prepare for it today.”

Malcolm X

“Success is no accident. It is hard work, perseverance, learning, studying, sacrifice and most of all, love of what you are doing or learning to do.”

Pele

“Sticking to good habits can be hard work, and mistakes are part of the process. Don't declare failure simply because you messed up or because you're having trouble reaching your goals. Instead, use your mistakes as opportunities to grow stronger and become better.”

Amy Morin

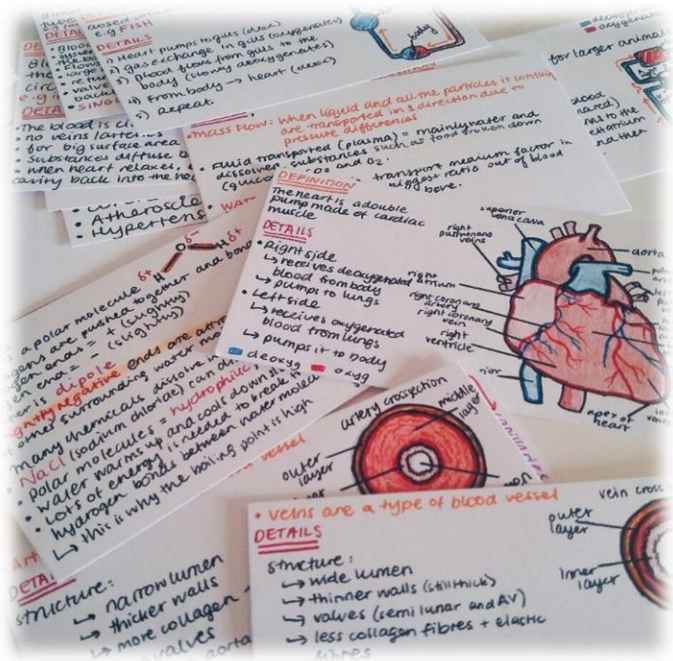
Revision Techniques

Flash Cards

Great for revising key terms and remembering definitions, dates, facts etc.

Split the page of your I.S textbook into four using a ruler or use flash cards which you can collect from the LRC and keep in your I.S folder.

Make brief notes on the information in the knowledge organiser, use colour coding and diagrams where you can to highlight key information.



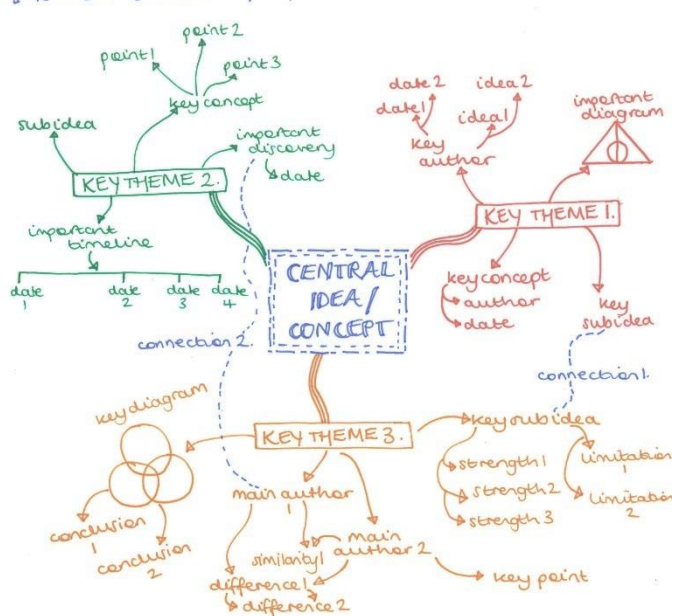
Mind Map

Great for revising if you are a visual learner, allowing you to select and link key information.

Use a full page to add as much detail as you can to your mind map, starting with a key concept or topic at the centre. Use the knowledge organisers and your own ideas.

You can use colour coding, diagrams and connections to support your learning.

MINDMAPPING GUIDE



Self-quizzing Questions

Here is a section of a Science Knowledge Organiser. You could test your grasp of this knowledge by asking yourself, "What ions are found in acids? Acids contain hydrogen ions."

"What does corrosive mean? A corrosive acid can destroy skin cells and cause burns."

These are examples of self-quizzing questions. Write 10-20 self-quizzing questions and answers based on the subject knowledge organiser and focusing on the areas where you need to strengthen your knowledge.

2. Acids (pH 1-6)



- Acids are a family of chemicals, examples are lemon juice, vinegar and Coca Cola. There is also acid in our stomach.
- Acids contain Hydrogen (H⁺) ions.
- **Strong acids** like hydrochloric acid are very corrosive this means they destroy skin cells and cause burns.
- **Weak acids** like vinegar are safe to eat but are still irritant to sensitive parts of the body.

KS3 English I.S

Your task each week is to understand the meaning of and spell correctly 5 key words.

Each student as a minimum should:

- Create two different sentences showing your understanding of the word.
E.G.: **hierarchy**:
 1. **Hierarchy** is shown in A View From the Bridge through the character of Eddie.
 2. In Romeo and Juliet, women were lower than men in **hierarchy**.*N.B.: You can change the tense of your word to suit your sentences.*

OR

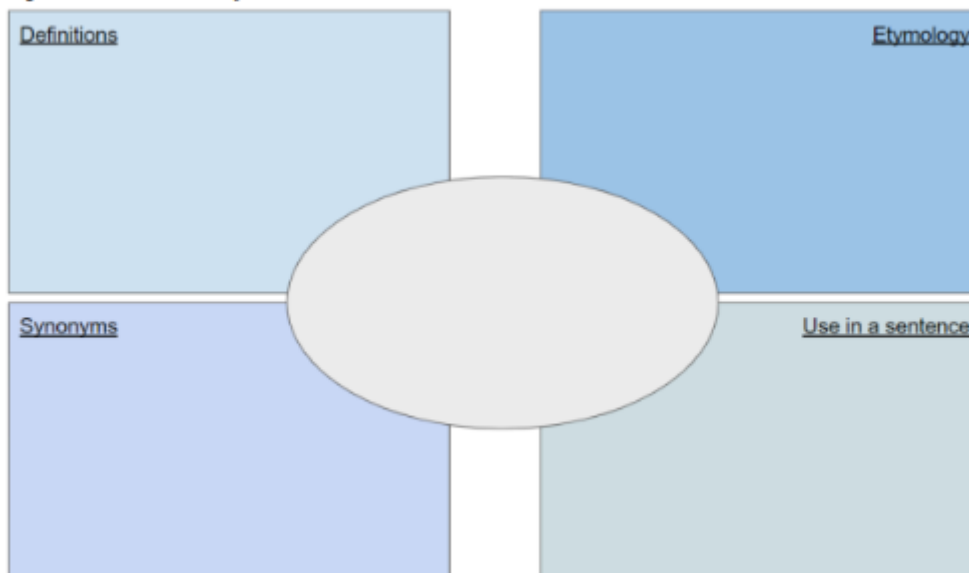
- Create flashcards which display the words and their definitions written in your own words.

However, students could also complete the following:

- Challenge:** Complete **both** the tasks above.
- Extra Challenge:** Using the template at the end of the booklet, create a Frayer model for one or two of the words. (Etymology= where the word comes from)
- Super Challenge:** Create a word map. Start with the original word in the middle and add words you associate with that word around it, then words you associate with the secondary words OR write a short story of your choice that includes the key words for the week.

Frayer Model Template

<u>Definitions</u>	<u>Etymology</u>
<u>Synonyms</u>	<u>Use in a sentence</u>



Week Due (w/c)	Word	Definition
16th Sept	Accommodate	To allow for something someone wants/requires
	Bargain	To agree terms between two or more people OR Something cheaply bought or sold.
	Conscience	A person's guiding sense of right or wrong.
	Definite	Clearly set/specified, without a doubt
	Exaggerate	To represent something being more than it is in reality.
	Amateur	Someone who is non professional at an activity.
23rd Sept	Conscious	Being aware of something
	Disastrous	Causing great damage OR being highly unsuccessful
	Hindrance	A thing that delays or stops a process
	Harass	Endless pressure, intimidation, or annoying someone or something.
	Controversy	Discussion and argument about something that often splits public opinion.
	Correspond	Two things having a close similarity OR Communicate by letters, emails or other messages.
30th Sept	Profession	A paid occupation
	Thorough	Performed with care, in depth and completely.
	Privilege	A special right given to only a particular group or person
7th Oct	Interfere	To meddle in a situation without invitation.
	Sacrifice	To give something up
	Sufficient	Enough of something

	Leisure	Use of free time for enjoyment
	Frequently	Occurring regularly or often
14th Oct	Guarantee	A promise with certainty that something will happen
	Nuisance	A person or thing causing inconvenience and annoyance.
	Recommend	Put something or someone forward as being suitable
	Sincerely	In a genuine or honest way
	Variety	A range of different things
	21st Oct	Programme
	Parliament	A group of elected politicians that form the government.
	Convenience	Doing something with ease and without problem.
	Criticise	To form and express negative judgement.
4th Nov	Occupy	To take up a space or place
	Relationship	The way in which two or more people or things are connected.
	Identity	The things that people feel represent their life or personality.
	Justice	The quality of being fair and reasonable.
	Acceptance	The process of receiving and welcoming an idea, person or thing.
	Diverse	Showing variety and difference.

11th Nov	Prologue Figurative Bravery Narrative Methods	A separate introductory section to a piece of writing. Describing something in a non-literal way e.g. using similes to describe something. Showing mental or moral strength. A plot or storyline. The procedure used to accomplish something.
18th Nov	Autobiography Infer Narrator Protagonist Foreshadowing	An account of a person's life written or told by that person. To draw a conclusion about something based on evidence. The person who tells a story. The main character of a book, play or film. A literary device - suggesting something will happen in the future.
25th Nov	Climax Setting Dialogue Exposition Structure	The highest or most intense point in a narrative. The surroundings or environment of anything. Conversation between two or more persons. Providing background information about a character/setting etc. to set up the story The relationship of the component parts of a work of art or literature; the way something is built up.
2nd Dec	Imagery Characterisation Exploitation	Pictures or words that are used to represent something. How a writer builds a character, showing their physicality and personality. The act of using someone unfairly to your own advantage.

	Corruption Context	Dishonest actions, usually by those in power. The background circumstances that inform a text.
9th Dec	Prejudice Poverty Empathy Simile Metaphor	An unfair and unreasonable opinion or feeling formed without enough thought or knowledge. The state or condition of having little or no money. The ability to understand another person's perspective and feelings. A comparison used to describe something, using 'like' or 'as'. A comparison used to describe something, using 'like' or 'as'. A comparison used to describe, not using 'like' or 'as'; describing something by saying it is something other than itself.

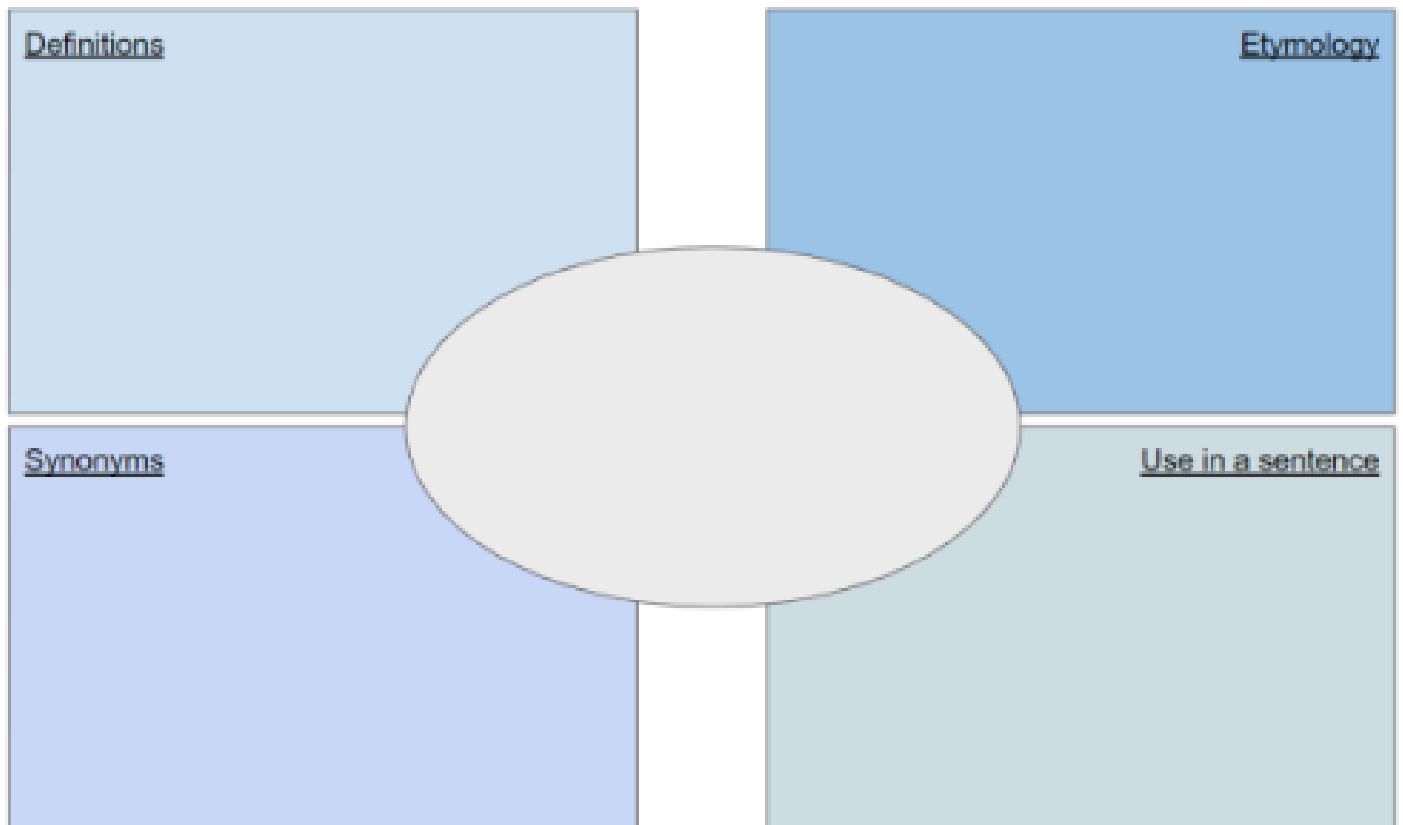
16th Dec	Represent Symbolism Genre Morality Chronological	To serve, show, stand for, or to speak and act. When a thing or image represents an idea or concept. A type, class, or category of story such as horror, comedy, or drama. The distinction between right and wrong. Events arranged in the order they happened.
6th Jan	Entire Repetition Atmosphere Moral Assume	The whole of something: complete. When something occurs more than once. The particular tone or mood being set. If something is ethically right; also a message or lesson about the correct thing to do To accept something to be true without question or proof.

13th Jan	Tension Pronouns Betrayal Vengeance Liberty	The feeling of mental or emotional strain A word used instead of a noun to refer to a person or thing that has already been mentioned, e.g: I, you, he, this, it, who, what. To break trust: to be disloyal. Violent revenge: to 'get someone back' for an insult or injury. Freedom from control.
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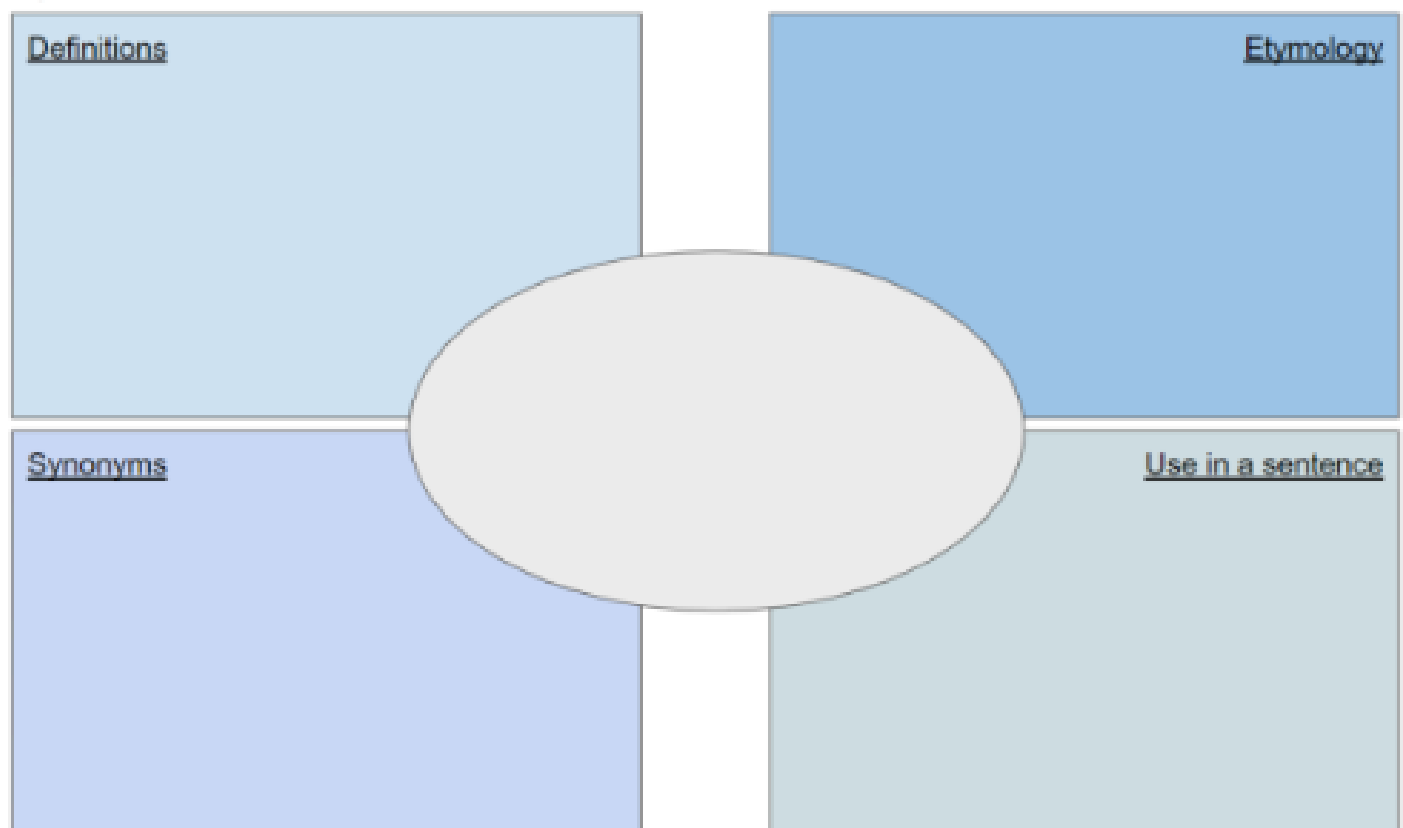
	Familial Establish	Relating to a family (e.g familial love) To set something up.
10th Feb	Morality Summary Consequence Interpret Belonging	Distinguishing between right and wrong. An overall explanation about something. The result of an action. To explain something and put it in your own words. To feel a sense of being suited to a place or group.

20th Jan	Harsh Obedience Bias Imperative Antagonist	Cruel or severe Doing as you are told; to comply. An unfair attitude or belief about something/someone. Of vital importance/crucial OR an authoritative command. The opposite of the protagonist- normally a villain or an enemy.
27th Jan	Patriarchy Significant Circumstance Dominate Emphasis	When men are in control of an organisation, family or society. Something that is important. A situation related to the time and the place and events that have occurred. To rule over or control something. To highlight something to show it is important.
3rd Feb	Forgiveness Authority Conclude	When somebody lets go of an insult or injury and moves on. To have power over other people. To finish something or bring it to an end.

Frayer Model Template



Frayer Model Template



Hans Price Maths Department

All Independent Study in the Maths department is set using the following online platforms

The logo for SPARX MATHS, with 'SPARX' in white on a black background and 'MATHS' in blue on a white background.

You need to log in to your SPARX account, where there are 3 types of homework:

- **Compulsory**
- **XP Boost**
- **Target**

Every student needs to get **100%** of their compulsory homework completed every week. Students need to write out the bookwork codes of each of the questions in their homework book and complete the bookwork checks online.

XP boost and Target sections are additional resources that the students can complete if they wish. They will support the students to make greater progress in Maths, but do not form part of the compulsory Independent Study.

If students get stuck on any question, they should watch the associated video to help them complete the task.

We also subscribe to Times Tables Rock Stars. We encourage students to engage with this program to ensure their foundation of knowledge is solid. We will run College competitions and award prizes to those students with the most coins.



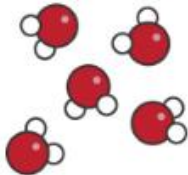
These homework platforms are designed to consolidate your knowledge, and students at KS3 can expect this to take up to 1 hour per week.



1. Pure vs Impure

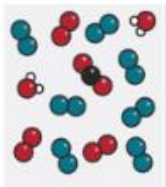
Pure Substances

A substance made up of **one type** of particle e.g. hydrogen gas or oxygen gas.



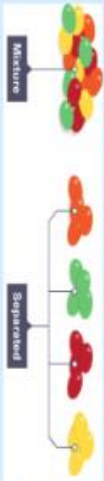
Impure Substances

A substance made up of **mixtures** of different types of particle e.g. bottled water.



2. Mixtures

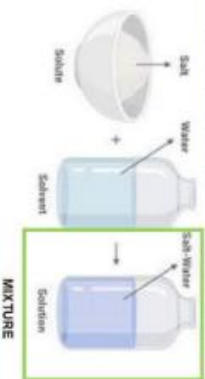
A **mixture** contains two or more substances, not chemically joined together, which can be **separated**. A packet of sweets may contain a mixture of different coloured sweets. The sweets are not joined together, so can be picked out and separated.



3. Solutions

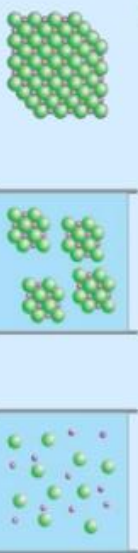
solute + solvent = solution (solid) (liquid) (mixture)

e.g., salt + water = solution



4. Dissolving

During dissolving, the **solvent particles** surround the **solute particles** and move them away so they are spread out in the **solvent**.



Solubility is a measure of how easy it is for a given substance to dissolve.



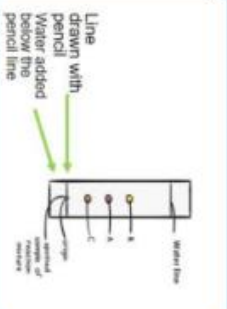
KS3 Science

Separating Techniques

@HansPriceK3
#teachoftheday1919

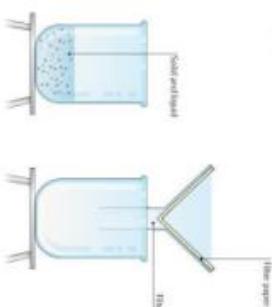
5. Chromatography

A method for separating a mixture of liquids based on their **solubility**. As the solvent (water) moves up the paper, it carries the mixture with it. Different substances in the mixture will move at different rates due to **solubility** and separate.



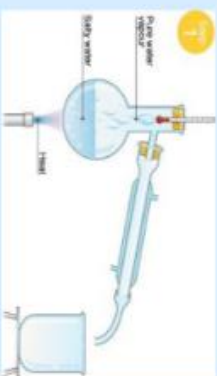
6. Filtration

If separating sand from water, the sand (**residue**) stays behind in the filter paper and the water (**filtrate**) passes through the filter paper. Water molecules are small enough to fit through the filter paper.



7. Distillation

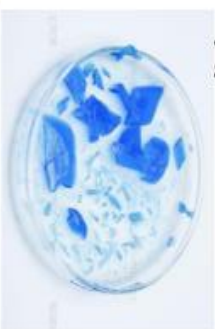
Used to separate a liquid from a solution.



Water **evaporates** from the **solution**, but is then cooled and **condensed** into a separate container. The salt does not **evaporate** and so it stays behind. **Distillation** can also be used to separate two liquids with different **boiling points** (eg. orange squash or fizzy water). This is because the one with the lower boiling point will **evaporate** and **condense** first.

8. Crystallisation

Crystallisation is used to produce **solid crystals** from a **solution**. When the **solution** is warmed, some of the **solvent** (liquid) **evaporates** leaving behind a more **concentrated**



To obtain **large** crystals, **evaporate** slowly.
To obtain **small** crystals, **evaporate** quickly using a Bunsen burner.

TERM 1 SCIENCE I.S. SEPARATION TECHNIQUES

<p>1. State whether hydrogen gas is a pure substance or a mixture.</p>	<p>2. Air contains hydrogen gas, oxygen gas and nitrogen gas. State whether air is a pure substance or a mixture.</p>	<p>3. Sugary water is a solution. Name the solvent in sugary water.</p>
<p>4. Define the term <i>solubility</i>.</p>	<p>5. Name the separation technique that separates mixtures based on solubility.</p>	<p>6. Describe the mixture that can be separated using filtration.</p>
<p>7. Explain why the line is drawn in pencil during chromatography.</p>	<p>8. Describe the process of distillation.</p>	<p>9. Explain how to produce large salt crystals using crystallisation.</p>

1. Parts of a Light Microscope

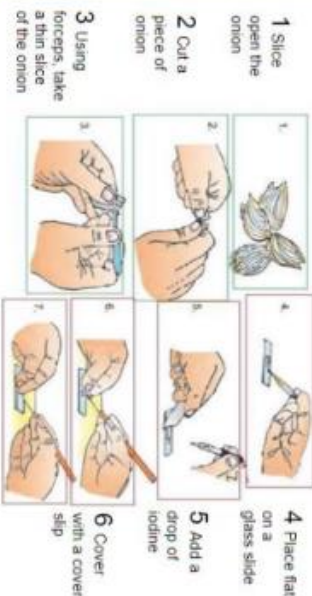
The Light Microscope



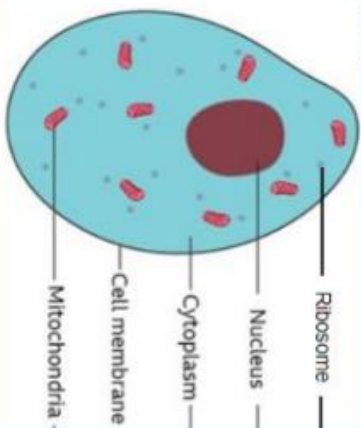
2. Using a microscope



3. Preparing a slide of onion cells



4. Animal cell



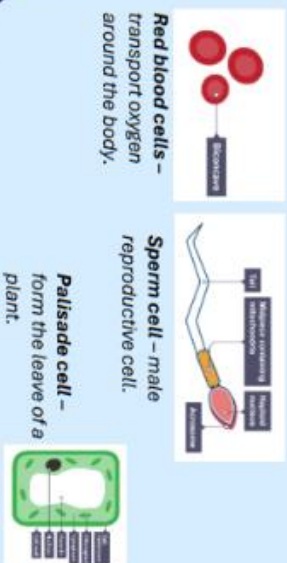
6. Organelle Functions

Animal and plant cells

- Cell membrane** – controls what enters and exits the cell.
 - Nucleus** – contains DNA, the genetic information that cells need to function.
 - Cytoplasm** – this is a jelly-like substance in which chemical reactions happen.
 - Mitochondria** – the site respiration.
 - Ribosomes** – the site where proteins are made.
- Plant cells only**
- Cell wall** - this surrounds the cell and gives it support.
 - Vacuole** - contains sap which gives the plant cell support.
 - Chloroplasts** - these are the site of photosynthesis.

7. Specialised Cells

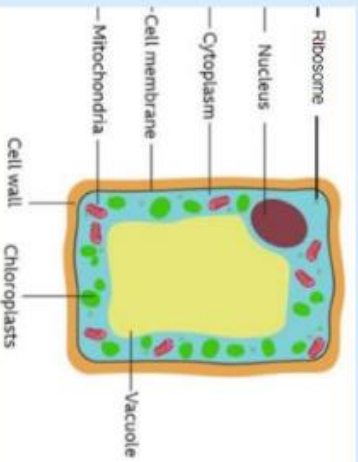
Specialised cell: a cell with a specific role to perform.



KS3 Science Cells and Organisation

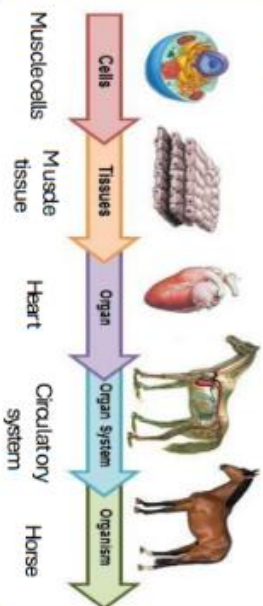


5. Plant cell



8. Levels of organisation

In the human body, structures are related and form larger structures.



TERM 1 SCIENCE I.S. CELLS

<p>1. Name the part of the light microscope we look through.</p>	<p>2. Describe how to view a slide under a light microscope.</p>	<p>3. Explain why cells have to be stained with dye.</p>
<p>4. Draw and label an animal cell.</p>	<p>5. State two differences between an animal and plant cell.</p>	<p>6. Explain why plant cells have a more rigid, fixed shape.</p>
<p>7. Order these terms from smallest to largest: blood, heart, red blood cell, circulatory system.</p>	<p>8. Describe the role of palisade cells.</p>	<p>9. Compare the structure of a red blood cell and a sperm cell.</p>

1. Particles

- Everything is made up of **tiny particles**.
- The **properties** of a substance depend on what its particles are like, how they move and how they are arranged.
- The particles in a substance are the same whether it's in the solid, liquid or gas state, but their **arrangement and movement** change.



2. States of matter

Solid

Steel, plastic and wood are solids at room temperature. Ice



Liquids

Mercury, petrol and water are liquids at room temperature.



Gases

Air, helium and chlorine are gases at room temperature.



4. Movement of particles (energy)

Another way to understand solids, liquids, and gases is by thinking about the energy they contain. A balloon full of gas has molecules dashing about inside it, smashing repeatedly into the rubber walls and pressing them outward. Balloons stay up because the force of the gas molecules pushing against the inner surface of the rubber exerts a pressure that's equal to the pressure of the air molecules pushing on the rubber from outside. If the gas loses energy the particles move less and less they will then turn into a liquid. The particles are still moving but not as quick as when the particles were a gas. Remove more energy and the particles will stay in a fixed place and become a solid. The particles still contain energy, but just vibrate in their fixed position.



KS3 Science Particles

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3. Arrangement and movement of particles

Solids

In the solid state the **vibrating** particles form a **regular pattern**. This explains the fixed shape of a solid and why it can't be compressed or poured.

Liquids

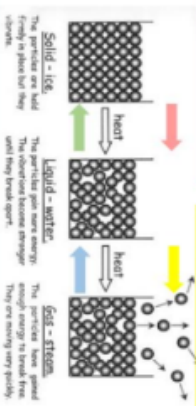
In a liquid the particles still touch their neighbour's, but they **move around, sliding over each other**. This is why you can pour, but not compress, a liquid.

Gases

In the gas state, **widely-spaced particles move around randomly**. This explains why you can compress gases and why they flow.

5. Changing states

Melting is the process in which a solid is changing to a liquid.



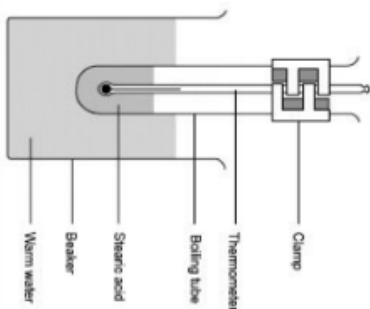
Evaporation is the process in which a liquid is changing to a gas.

Solidifying is the process in which a liquid is changing to a solid.

Condensing is the process in which a gas is changing to a liquid.

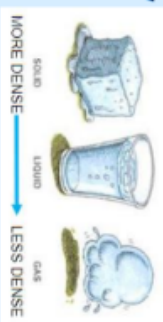
6. Stearic acid experiment

Stearic acid has a melting point of 69.3 °C. In this experiment you will take the temperature of stearic acid at regular intervals as you heat and cool it. You will observe the temperature change as it changes state.



7. Particles and density

Density means how closely particles are packed together in a substance.



Calculating density:

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

$$\left(\frac{\text{kg}}{\text{m}^3}\right) \left(\frac{\text{kg}}{\text{m}^3}\right)$$

A 500kg block has a volume of 100m³. Calculate its density.

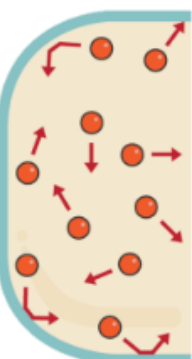
Density = mass / volume

Density = 500 / 100

Density = 5 kg/m³

8. Gas Pressure

The particles in a gas move quickly in all directions, but they do not get far before they bump into each other or the walls of their container. When gas particles hit the walls of their container, they cause pressure. If the temperature is increased, the particles in a gas move faster, so they hit the walls of the container more often. This causes the pressure to rise. This is also why the pressure of a gas also increases when the volume of its container is decreased.



1. Forces

A force is a **push** or a **pull** that changes the **shape, speed or direction** of an object. You cannot see forces but you can see the effects of them.



The unit of force is the **Newton (N)** named after Sir Isaac Newton. We measure force using a piece of equipment called a Newton metre.



2. Types of Force

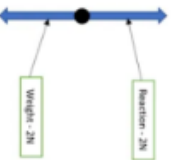
Forces can be divided into two types: contact and non-contact.

- Contact forces** (e.g. push) are caused when two objects are in contact.
- Non-contact forces** (e.g. magnetism) do not require the objects to be in contact for the force to occur.

Examples of forces include **push, pull, friction, air resistance, water resistance, thrust, upthrust, reaction, weight, magnetism, gravity, lift and tension.**

3. Force Diagrams

To show the forces acting on a body we use a **free body force diagram**. A free body force diagram shows all of the forces that are acting on the body. It has arrows that show the direction the force acts. The larger the arrow, the larger the force. A free body force diagram should always have arrows.



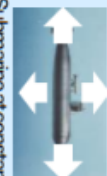
4. Balanced Forces

When the forces acting in opposite directions are the same magnitude (size) we say the forces are **balanced**. The resultant force (overall force) is **0N**. This means one of two things:

- The object is stationary (not moving)
- The object is moving at a constant speed



Duck floating still on the water



Submarine at constant speed and depth



KS3 Science

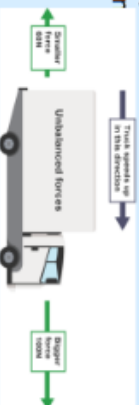
Forces

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5. Unbalanced Forces

If the forces are **unbalanced** on an object there are two things that could happen:

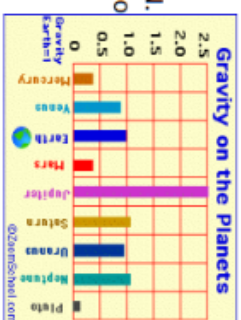
- If the object is stationary, then it will move in the direction of the resultant force
- If the object is moving, then the object will speed up or slow down in the direction of the resultant



6. Weight on different planets

As planets have different masses, a person's weight would be different depending which planet they were on.

For example, a person's weight on Earth is 1000N. If that same person was on Jupiter, their weight would be 2500N.



7. Hooke's Law

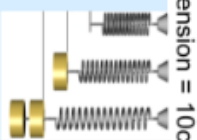
The extension of an elastic object is directly proportional to the force applied.

e.g. Force applied = 10N, extension = 5cm

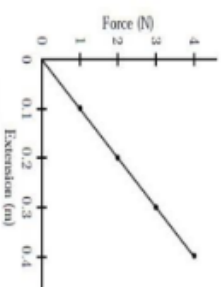
Force applied = 20N, extension = 10cm

↑ doubles

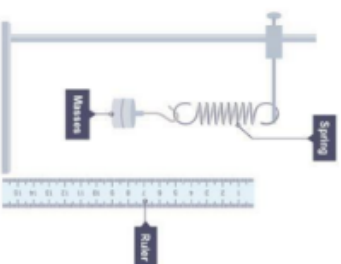
↑ doubles



7. Hooke's Law



The extension of a spring (m) is **directly proportional** to the force applied (N).



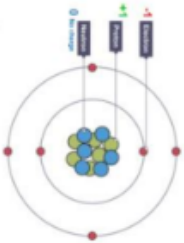
TERM 2 SCIENCE I.S. FORCES

<p>1. State the unit for force.</p>	<p>2. Name two contact forces.</p>	<p>3. Explain why magnetism is an example of a non-contact force.</p>
<p>4. Draw a force diagram which shows a 30N force acting upwards and a 15N force acting downwards.</p>	<p>5. Explain how you know the forces in question 4 are unbalanced.</p>	<p>6. Describe two possible changes to a moving car which has unbalanced forces acting on it.</p>
<p>7. Name one piece of equipment required to investigate Hooke's Law.</p>	<p>8. State Hooke's Law.</p>	<p>9. Describe what will happen to the extension of the spring if the force added to it is doubled.</p>

1. Structure of the Atom

- An atom is made up of three subatomic particles: protons, electrons and neutrons.
- Protons and neutrons are found in the nucleus of the atom (in the centre).
- Electrons are found orbiting the nucleus in shells.
- Protons have a positive charge.
- Electrons have a negative charge.
- Neutrons have a no charge.

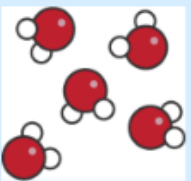
In an atom, there are equal numbers of protons and electrons because the positive and negative charges need to balance.



4. Pure vs Impure

Pure Substances

A substance made up of **one type** of particle
e.g. hydrogen gas or oxygen gas.



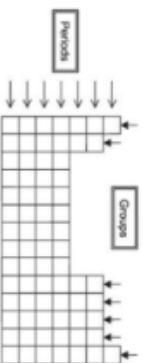
Impure Substances

A substance made up of **mixtures** of different types of particle e.g. bottled water.



6. Patterns in the Periodic Table

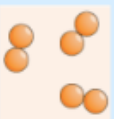
Elements are arranged on the periodic table in groups and periods. Horizontal rows are called periods and vertical columns are called groups.



Groups are labelled 1-7 from left to right, with last group being called either group 0. Elements in the same group have similar properties, e.g. group 1 elements are all very reactive.

2. Elements and Compounds

Elements are substances made up of one type of atom. All the elements are found listed in the Periodic Table



Compounds contain two or more elements that are chemically joined to each other. **Compounds** are formed by chemical reactions.

Examples of elements	Examples of compounds
Carbon (C)	Carbon dioxide (CO ₂)
Oxygen (O ₂)	Water (H ₂ O)

Atoms and Elements

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KS3 Science

3. Chemical Symbols and Formulae

Each element is coded for by a formulae. Most elements have a formula which is the first letter of its name (e.g. C for Carbon and H for Hydrogen). Other formulae are the first two letters of the element name (e.g. Li for Lithium and Ne for Neon).

Naming Compounds:

Lithium hydroxide - (Lithium, Hydrogen + Oxygen) - LiOH
Lithium nitrate - (Lithium, Nitrogen + Oxygen) - LiNO₃
Lithium carbonate - (Lithium, Carbon + Oxygen) - LiCO₃
Lithium sulphate - (Lithium, Sulphur + Oxygen) - LiSO₄



5. The Periodic Table

All the different elements are arranged on the periodic table. The elements are arranged in order of increasing atomic number. On the periodic table, we can see the metal elements on the left and non-metal elements on the right.

7. Metals and Non-Metals

Metals are grouped together because they all have similar properties.

Physical properties of Group 1 metals:

- Shiny
- Strong
- Malleable (can bend)
- High melting and boiling point
- Conduct heat well
- Conduct electricity well



Li	least reactive
Na	↑ Hard to lose 1 electron
K	
Rb	
Cs	most reactive

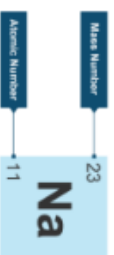
loses 1 electron easily

8. Atomic Number and Mass Number

This is the total of protons + neutrons

This is the number of protons

Sodium has 11 protons, 11 electrons and 23 - 11 = 12 neutrons.



TERM 2 SCIENCE I.S. ATOMS AND ELEMENTS

<p>1. State the charge of an electron.</p>	<p>2. Name the two particles found in the atom's nucleus.</p>	<p>3. Explain why lithium oxide is an example of a compound.</p>
<p>4. Air contains hydrogen gas, oxygen gas and nitrogen gas. State whether air is a pure substance or a mixture.</p>	<p>5. Describe the arrangement of metals on the periodic table.</p>	<p>6. Chlorine is found in group 7. Explain how this is evidence for it being a non-metal.</p>
<p>7. Describe the arrangement of elements on the periodic table, using the terms <i>group</i> and <i>period</i>.</p>	<p>8. State three properties of metals.</p>	<p>9. Copper has 29 protons. Explain why copper's atomic number is 29.</p>

1. A healthy diet

To keep healthy, it is vital to eat a **balanced diet**.

This means eating foods that contain **nutrients** in the correct amount.



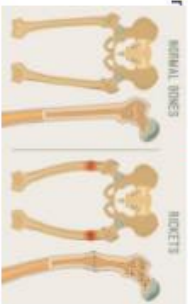
2. An unhealthy diet

An imbalanced or poor diet can contain too much or too little of a particular nutrient. If you have too little of a particular nutrient, we say that you have a **deficiency** in that nutrient. Deficiency can cause you to feel poorly.



3. Consequences of an unhealthy diet

- Iron deficiency can cause anaemia, where there are too few red blood cells
- Iodine deficiency can cause a swelling in the neck called goitre
- Vitamin A deficiency can cause blindness
- Vitamin C deficiency causes scurvy, which makes the gums bleed
- Vitamin D deficiency causes rickets, which makes the legs bow outwards in growing child



4. Nutrients

Nutrient	Use in the body	Good sources
Carbohydrates	To provide energy	Cereals, bread, pasta, rice
Protein	For growth and repair	Fish, meat, eggs, beans, pulses
Lipids	To provide energy and store energy in the body and insulate it against the cold	Butter, oil, nuts
Minerals	Needed in small amounts to maintain health	Salt, milk (for calcium), liver (for iron)
Vitamins	Needed in small amounts to maintain health	Fruit, vegetables, dairy foods
Dietary fibre	To provide roughage to help keep the food moving through the gut	Vegetables, bran
Water	Needed for cells and body fluids	Water, fruit juice, milk

KS3 Science Nutrition and digestion



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#HealthyDietMatters!

5. Digestion

Digestion: process by which food molecules are broken down to be absorbed by the body.

Chemical digestion: enzymes break down food into smaller molecules.



Mechanical digestion: the food is manually broken down, e.g. by the mouth when chewing.

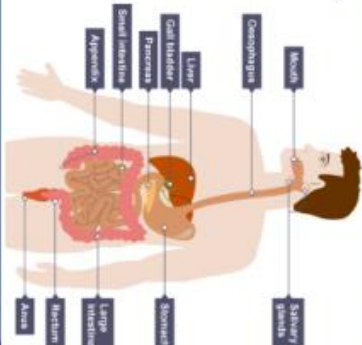


Why do we need to digest our food?

The food we eat contains nutrients. However these nutrients cannot be absorbed and used by the body unless the food is broken down.

6. Digestive system

The digestive system is made up of a group of organs that work together to break down food.



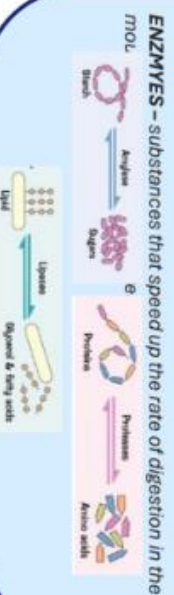
7. Digestive system function

The mouth: Brakes down food mechanically and chemically by enzymes.

The stomach: Food mixes with the stomach acid and enzymes. The stomach is a muscular bag which churns the food, breaking it down into small pieces.

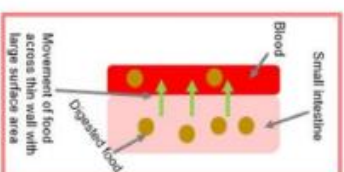
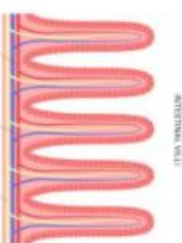
The intestines: Food passes through into the small intestine, where more enzymes are released, breaking down food into small nutrients. The large intestine is the site of water reabsorption into the body.

The rectum: The faeces is passed into the rectum and is excreted from the body through the anus.



8. Diffusion of nutrients

Digested food molecules, which are small, are absorbed in the **small intestine**, through structures called **villi**. This means that they pass through the wall of the small intestine and into our bloodstream.



TERM 3 SCIENCE I.S. NUTRITION

<p>1. List the seven components of a balanced diet.</p>	<p>2. Define the term <i>deficiency</i>.</p>	<p>3. Describe the consequences of a vitamin D deficiency.</p>
<p>4. Describe the use of lipids in the diet.</p>	<p>5. List three good sources of carbohydrates.</p>	<p>6. Define the term <i>digestion</i>.</p>
<p>7. Explain why we need to digest our food.</p>	<p>8. Describe the organs food passes through in the human digestive system.</p>	<p>9. Explain why the small intestine has a thin wall and a large surface area.</p>

1. What is energy?

Energy is a quantity that is stored in objects and systems. It makes things happen.

For example, the energy stored in a car makes it move.



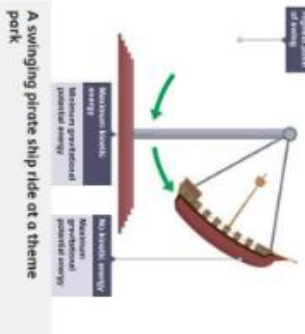
Energy is measured in **Joules (J)**.

2. Energy Stores

Energy store	Example
Chemical	
Kinetic	
Gravitational potential	
Elastic	
Thermal	

3. Energy Transfers

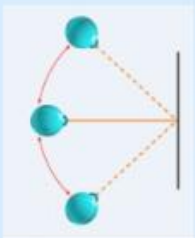
Energy can be transferred between different stores.



4. Conservation of Energy

When energy is transferred from one store to another the **total amount of energy does not change**.

Energy cannot be created or destroyed. All that can be changed is how it is stored. This idea is called the **law of conservation of energy**.



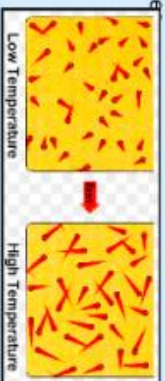
KS3 Science Energy Transfers

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#BeadyTalkerMYP

5. Temperature

The **temperature** of an object is to do with how hot or cold it is, measured in degrees Celsius ($^{\circ}\text{C}$).

The temperature is due to the movement of the particles in the object. When an object is heated, its particles move more vigorously and its temperature increases.



6. Heating



Energy can be transferred thermal in three ways:
 conduction (between solids),
 convection (between liquids and gases), radiation (where there are no particles).



7. Conductor and Insulators

A substance that transfers energy easily from the hot end to the cold end it is called a **conductor**.

Examples – Metals, water, diamonds.



A substance that does not transfer energy easily from the hot part to the cold part is called an **insulator**.

Examples – Plastics, air, wool.



8. Power

The amount of energy transferred is called '**work done**' and is measured in joules (J)

Power is the amount of work done divided by the time it took to transfer all the energy. It is measured in **watts (W)**.

To calculate the equation:

$$\text{power} = \frac{\text{work done}}{\text{time taken}}$$

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

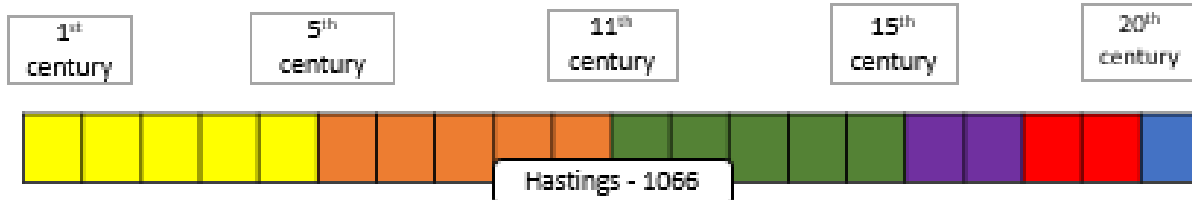
- power (P) in watts (W)
- work done (E) in joules (J)
- time (t) in seconds (s)

TERM 3 SCIENCE I.S. ENERGY


<p>1. State the units for energy.</p>	<p>2. List two objects with a store of kinetic energy.</p>	<p>3. A Bunsen Burner heats up. Its store of chemical energy is transferred to which store?</p>
<p>4. A ball is rolled down the hill. Its store of gravitational potential energy is transferred to which store?</p>	<p>5. Describe what happens to the movement of particles as an object is heated.</p>	<p>6. State the units for temperature.</p>
<p>7. List two examples of thermal conductors.</p>	<p>8. Calculate the power in a hair dryer that transfers 100J of energy in 10s.</p>	<p>9. Naomi says that when she defrosts her car, her hands get cold because the heat is transferred from her hands to the ice. Explain why Naomi is incorrect.</p>

Y7 Unit 1 – How accurate is Simon Schama about the Battle of Hastings?

Key history terms for this unit	
Source	Anything that a historian uses to learn out things about the past. This could be almost anything, for example a diary entry, a painting, an old nursery rhyme.
Chronology	Putting events in time order, this is known as chronological [cro-no-lodge-i-cal] order.
Fact	Something that can be proven. Is correct. Some written account are more factual
Opinion	A person's viewpoint. Some written accounts are more opinionated. This is not necessarily a bad thing!
Century	A period of 100 years. Historians put dates into centuries eg 1815 = 19 th century, 2019 = 21 ^s century, 1066 = 11 th century, 1489 = 15 th century, 745 = 8 th century



Key people in this unit		
<u>Edward the Confessor</u>		The Anglo-Saxon king of England until 1066
<u>Harold Godwinson</u>		Contender 1: The Anglo-Saxon king
<u>Harald Hardrada</u>		Contender 2: The Viking from Norway
<u>William of Normandy</u>		Contender 3: The Duke of the Normans in France. Crowned King on Christmas 1066

Key terms for this unit	
Heirs to the throne Sons or daughters who would become the next King or Queen.	Contenders People who want something and will compete for it.
Battle of Stamford Bridge A battle between Harold and Harald.	Battle of Hastings A battle between Harold and William.
Senlac Hill Harold's men started on the top of this hill in the Battle of Hastings.	Fyrd and housecarls The two main types of soldiers in Harold's Saxon army. The housecarls were the professionals.
Shield wall Harold's defence against William.	Bayeux Tapestry 

Y7 Unit 2 – What was life like in Medieval England?



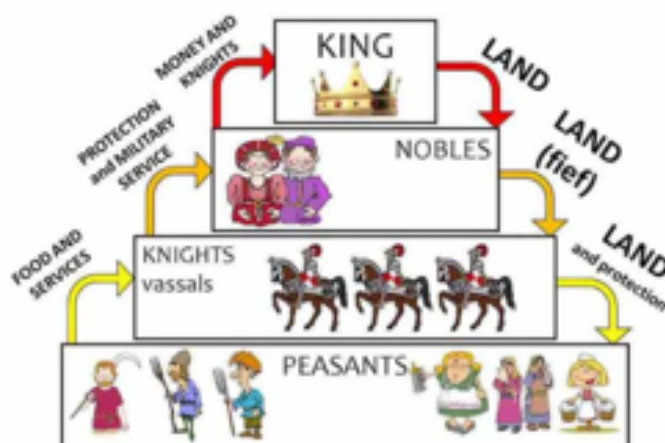
Key history terms for this unit

Source	Anything that a historian uses to learn out things about the past. This could be almost anything, for example a diary entry, a painting, an old nursery rhyme.
Chronology	Putting events in time order, this is known as chronological [cro-no-lodge-i-cal] order.
Similarity	When people, places, events are similar or have things in common <i>Eg. What are the differences life in towns and life in villages?</i>
Difference	Looking at the differences between people, places, events to compare them <i>Eg. What are the differences with life in towns and life in villages?</i>

1 st century	5 th century	11 th century	15 th century	20 th century
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Examples of <u>sources</u> we may use	
Luttrell Psalter	This is a document written in the 1300s. It contains lots of images about life in Medieval England
Domesday Book	This was a survey carried out by the Normans. It recorded the towns and villages in the late 11 th century.



The feudal system

This was a **hierarchy** introduced after the Normans came to power.

It gave power and control to those people at the top of the pyramid.

The peasants (or serfs) were the biggest group but at the bottom.

Villages	Most people lived in villages, or manors. Peasants and serfs would work on the farms.
Towns	There were some small towns, the biggest was London. Towns were meeting points and places of markets and trade, and cathedrals.
Bristol	Bristol was one of the biggest towns in Medieval England. It's location as a port town meant trade thrived.
Women	Women were not treated as equals. They were the property of their fathers or husbands.
Religion	Most people were religious and almost everyone was Catholic. They feared going to hell after death.

Y7 Unit 3— How did people in Medieval England react to the Black Death?

Key history terms for this unit	
Cause	Reasons why an event happened. <i>Eg. A cause of the spread of the Black Death was an increase in trade</i>
Consequence	Things that happened after an event <i>because of</i> that event. <i>Eg. A consequence of the Black Death was the Peasants' Revolt</i>
Significant	Importance. Not everything that has ever happened will be important in history. What makes some events more important than others?
Turning point	If an event is historically significant (important) we might say it is a turning point in history



Key images for this unit

The Black Death arrived in Britain in 1348 having started in China. It spread through trade.



This image shows buboes on victims' chests. A healer is using perfumes and smells to try and treat the disease.

Flagellants whipping themselves



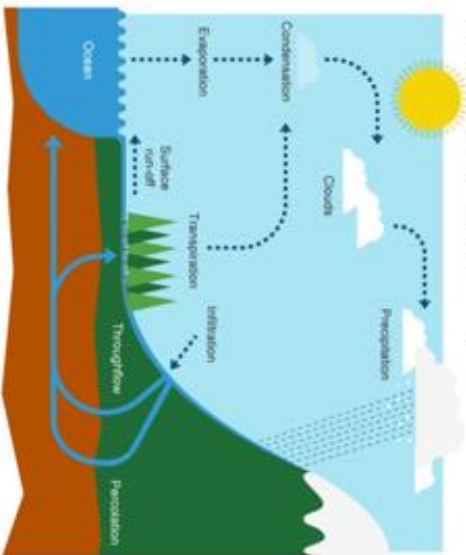
A **plague doctor**, note the mask he is wearing

Key terms for this unit

Black Death A plague (disease) which came to Britain between 1348 and 1350. The skin of victims turned black	Buboes Boils that developed on victims
Bubonic/ pneumonic The two main forms of plague: Bubonic – mainly spread by fleas Pneumonic – spread by air	Medieval causes Medieval people believed it was caused by things like: bad air (miasma), God and the planets
Flagellants People who believed the Black Death was a punishment from God who then whipped themselves to try to avoid this punishment	Medieval cures Cures people tried included: praying, staying away from others, carrying nice smells, drinking vinegar, and rubbing onions on buboes
Wat Tyler The leader of the Peasants' Revolt in 1381	Peasants' Revolt A protest by peasants against the king. They wanted reduced taxes and an end to serfdom

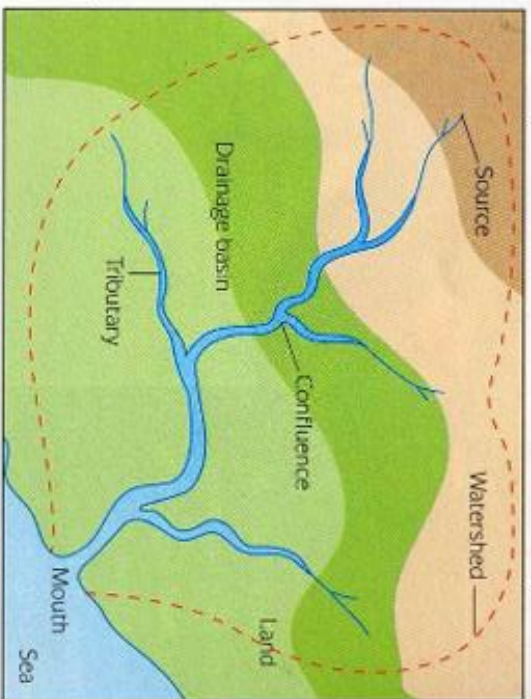
The Water Cycle

Year 7 Knowledge Organiser Geography Term 3: UK Landscapes - Rivers



Evaporation	When sun heats water it changes into water vapour and rises.
Condensation	As air rises it cools and the water vapour forms clouds.
Precipitation	Water droplets that fall to the ground as rain, hail or snow.
Infiltration	Water soaks into the soil.
Transpiration	When moisture is evaporated from plants.
Surface runoff	When water runs off the surface of the land.
Throughflow	When water flows through the soil.

Features of a drainage basin



River processes

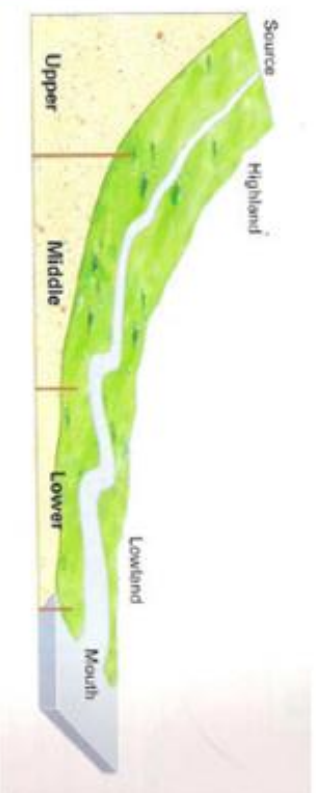
Erosion	The wearing away of land.
Transportation	The movement of material in a river.
Deposition	The dropping of material by water.

Landforms of a river

waterfall



meander



Year 7 Knowledge Organiser Geography Term 3:UK Landscapes - Rivers

Flooding



Causes of flooding		Impacts of flooding		
Physical	Human	Social	Economic	Environmental
Heavy rainfall	New buildings	Homes flooded	Jobs lost	Water supplies contaminated.
Saturated ground	Deforestation	Loss of electricity and Wi-Fi	Businesses close	Debris left behind

Managing Rivers

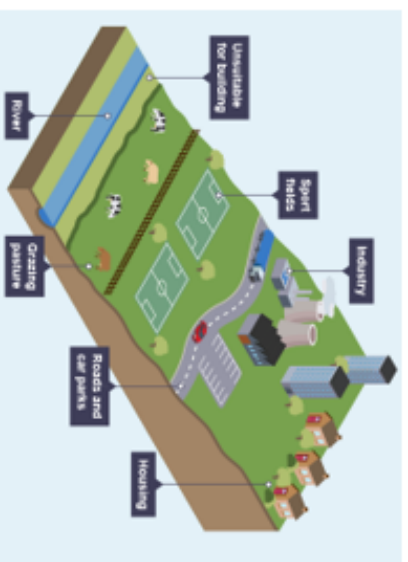
Soft engineering does not involve building artificial structures, but takes a more sustainable and natural approach to managing the potential for river flooding. Each approach has its advantages and disadvantages.

Flood warnings and preparation

The environmental agency monitors rivers and issues warnings via newspapers, TV, radio and the internet when they are likely to flood so people can prepare.

Floodplain zoning

Allowing only certain land uses on the floodplain reduces the risk of flooding to houses and important buildings.



Hard engineering involves building artificial structures which try to control rivers. They tend to be more expensive. Each hard engineering strategy has its advantages and disadvantages.

Dams and reservoirs

The dam traps water, which builds up behind it, forming a reservoir. Water can be released in a controlled way.

Embankments

Raising the banks of a river means that it can hold more water.

Flood relief channels

The floodwater flows into the relief channel and is taken either to an area where it can be absorbed, or re-enters the river further down its course

Why is the Lake District a unique environment in the UK?

Get ready for an adventure into the inspiring environment of mountains and lakes in the north west of England

Key Geographical Words

Distinctive	A characteristic of a place that makes it different to others or in some way unique
Mountainous	An area with a lot of mountains – raised, high areas of the earth's surface
Glaciation	A process where ice builds up and covers land, during a cold period
Ice sheet	A thick layer of ice that covers a large area of land
U Shaped valley	A large valley carved by a glacier creating a U shape
Tourism	The industry providing transport, leisure and facilities for people on holiday
Mining	The industry which extracts rocks and minerals out of the ground
Agriculture	The industry which produces crops and animals for sale for food and other products

Location



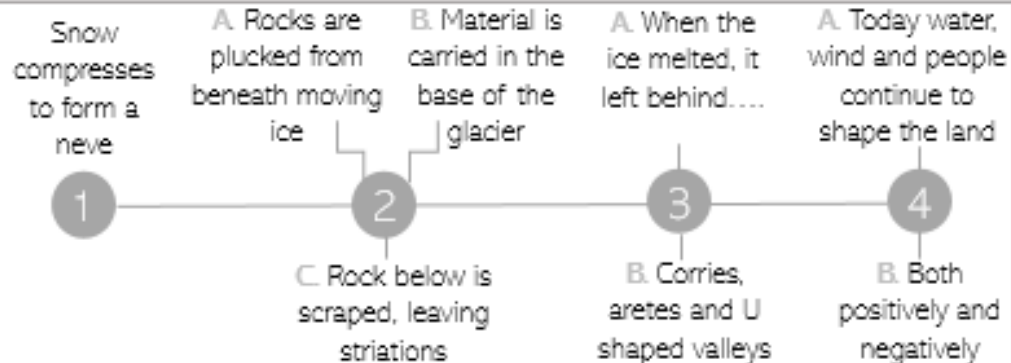
The Lake District National Park is in the county of Cumbria in the north west of England.

The M6 motorway goes around the eastern edge of the Lake District. Most people arrive by car, or get the train to towns such as Keswick or Windermere.

The Lake District is a mainly rural area, with only a few towns. Its nearest major cities include Carlisle, Manchester and Leeds, with smaller ones like Blackburn and Preston also nearby

Landscape

The Lake District's landscape was shaped by glaciers during the last ice age. The sequence to the right shows how this has happened



Industry



The Lake District's landscape has been altered and impacted by humans since the last ice age

A number of rocks and minerals exist beneath the surface, such as slate and copper. Mining for raw materials like these once provided an income and the industrial buildings can still be seen today

Agriculture, specifically sheep farming, continues today. Once the main form of industry it has declined but remains an important influence over the landscape

Tourism is the main form of income to the area today and employs the most local people – but it comes with opportunities and challenges

Year 7 UK 1.1

Year 7 UK 1.2

Year 7 UK 1.3

Year 7 UK 1.4

KO – Intro to Geography & The UK

Geography KS3

The difference between Great Britain, United Kingdom and British Isles.

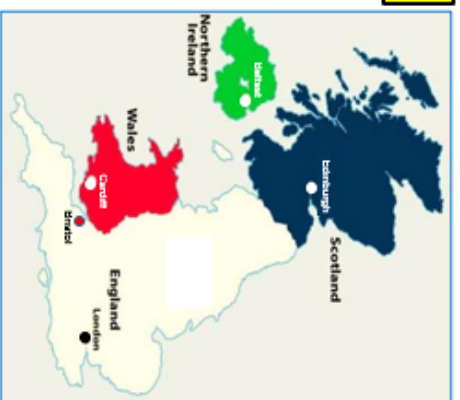


SEE aspects

Social - To do with people and their communities
e.g. housing, education.

Economic - To do with money.

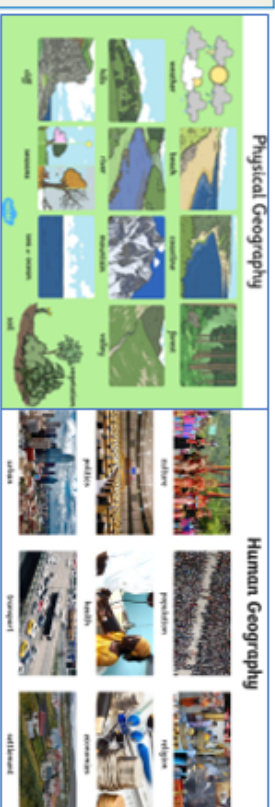
Environmental - To do with the natural world and the impact of human activity on its condition.



An **urban area** is an area where many people live and work close together. The population density is higher than in the surrounding area. e.g. city, town



A **rural area** is an open swath of land that has few homes or other buildings, and not very many people. e.g. countryside, village



Physical geography is the study of all natural forms and processes in an environment.

Human geography is the study of people and places – the relations between policies, cultures, social behaviours, economies and environments.

Land use in a city



Zone A The central business district (CBD)
The centre of the town was the first place to be built. It is full of shops, offices, banks and restaurants. There are a very few houses and a little open space here.



Zone B The inner city
This used to be full of large factories and rows of terraced housing built in the nineteenth century. Houses were small and there as no open space as land was expensive. Today most of the big factories have closed and the oldest houses have been replaced or modernised.



Zone C The inner suburbs
This is mainly semi-detached housing built in the 1920s and 1930s. There is some open space.



Zone D The outer suburbs
This includes large, modern houses and some council estates built since the 1970s. Recently small industrial estates, business parks and large supermarkets have been built here. There are large areas of open space.



Zone E Rural-urban fringe

This is the transition zone where urban and rural areas meet, mix and sometimes clash. Land is cheaper and there is less traffic congestion and pollution.





Stories of the prophets

Knowledge Organiser



NEED TO KNOW WORDS

Abrahamic Faiths	Religions that trace their beliefs back to the prophet Abraham: Judaism, Christianity and Islam
Commandment	An instruction from God
Covenant	An agreement or promise
Creation Ex Nihilo	Means 'created from nothing' – used in Genesis to describe how God creates everything.
Exodus	a mass departure of people
Genesis	Meaning 'the origin' or 'beginning'
Monotheist	Believing in one God
Prophet	A messenger chosen by God to deliver God's word
Prophecy	A message from God
Torah	The holy book revealed to Moses

The Torah is a collection of writings that form the central religious text of Judaism. It consists of the first five books of the Hebrew Bible, also known as the Old Testament of the Christian Bible. The two books are Genesis and Exodus.

What is the Torah?

God created out of nothing (Creation Ex Nihilo)

There were 6 days of creation 1: light and dark, 2: sky and sea, 3: dry land and plants, 4: sun, moon and stars, 5: fish and birds, 6: animals and humans.

On the 7th day God rested – some Christians try to have a day of rest in the week because of this. Humans were created in 'the image of God'. After everything God made he said 'it was good'. Except humans, he said they were VERY good'.

Genesis 1

Genesis 2-3: The Fall (Adam and Eve)

- God made Adam, and put everything he needed in the Garden for Adam to use and care for
- God said it was not good for a person to be alone, so he made a companion for Adam, a woman called Eve. They were told not to eat from the fruit of one tree
- A snake tempted them to eat the fruit and they did
- God took Adam and Eve out of the Garden, into a world where life would be harder and they would have to work for food and struggle in childbirth. They would eventually die.

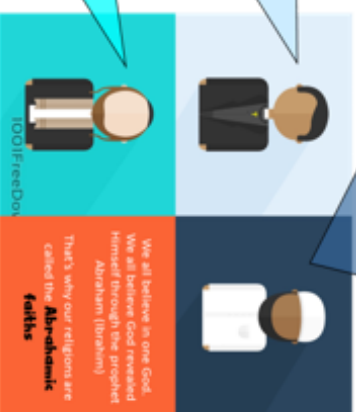
Importance of the Torah

As a Muslim person I think the Torah (or Tawrat in Arabic) is a collection of 5 books. All of these books are inspired by God and were originally given to the prophet Moses (Musa). Unfortunately the Torah was added to and badly translated over the years, so it's not totally perfect anymore, but it is still a holy book for me. I read the Torah to help me understand the stories that are referred to in the Quran.

As a Christian person I think the Torah is a collection of 5 books. All of these books are inspired by God. The Torah is the first 5 books of the Christian Bible, in a section of 39 books called the Hebrew Bible or Old Testament. I read the Torah from my Bible at Church or at home.

As a Jewish person I think the Torah is a collection of 5 books. All of these books are inspired by G-d. They are the first 5 books of the Hebrew Bible. It is called this because it is written in the ancient Jewish language: Hebrew. I read the Torah from a scroll in the Synagogue.

Some Jewish people think God's name is too holy to write down, so they write G-d instead.



The 10 Commandments

1. Have no other gods
2. Make no false images of G-d
3. Do not use G-d's name disrespectfully
4. Remember the Sabbath
5. Honour your mother and father
6. Do not kill
7. Be faithful to your husband/wife
8. Do not steal
9. Do not lie
10. Be happy with what you have.



Stories of the prophets

Knowledge Organiser



Noah's Ark (Genesis 6-9)

According to the story, God saw that the wickedness of mankind had become great and decided to flood the earth to cleanse it of sin.

God instructed Noah, a righteous man, to build an ark and gather two of every kind of animal, along with his family, onto the ark. Noah obeyed God and spent many years building the ark, as instructed.

When the flood came, the ark floated on the water for 40 days and 40 nights. All life on earth outside the ark perished in the flood, but Noah and his family and the animals on the ark were saved.

After the floodwaters receded, Noah and his family emerged from the ark and offered sacrifices to God in gratitude for their safety. God then made a covenant with Noah, promising never to flood the earth again and using a rainbow as a sign of this covenant. The story of Noah's Ark teaches the importance of obedience to God and the consequences of sin, as well as God's mercy and faithfulness to those who trust in Him.

Abraham (Genesis 12-17) – founder of the faithful

One day, God called Abram to leave his homeland and go to a new land that God would show him. Abram obeyed God and journeyed with his wife Sarai (later renamed Sarah) and his nephew Lot to the land of Canaan.

God promised to make Abram's descendants into a great nation and to bless all the nations of the earth through him. However, Abram and Sarai were unable to have children, so Sarai suggested that Abram have a child with her servant Hagar.

This caused problems, as Hagar and her son Ishmael were eventually cast out of Abram's household. However, God remained faithful to His promise and eventually blessed Abraham and Sarah with a son named Isaac.

Abraham's faith was tested when God asked him to sacrifice Isaac as a burnt offering, but at the last moment, God provided a ram to be sacrificed instead. Through his obedience and faith, Abraham became known as the father of the Jewish people and a model of faith for all believers.

The story of Abraham teaches the importance of faith and obedience to God, as well as the blessings that come from trusting in God's promises.

Moses' Exodus

Moses was born to Hebrew slaves in Egypt but was adopted by Pharaoh's daughter and raised as an Egyptian prince.

As a grown man, Moses saw an Egyptian taskmaster mistreating a Hebrew slave and killed him. He then fled to the wilderness and lived as a shepherd for many years.

One day, God spoke to Moses from a burning bush and told him to go back to Egypt to free the Hebrew slaves. With the help of his brother Aaron, Moses confronted Pharaoh and demanded that he let the Hebrews go.

Pharaoh refused, and God sent ten plagues upon Egypt, including the death of the firstborn, until Pharaoh finally relented and let the Hebrews go. Moses then led the Hebrews out of Egypt and through the Red Sea, which God parted to allow them to cross.

In the wilderness, God gave Moses the Ten Commandments and many other laws to guide the Hebrews' behaviour. After many years, Moses died on a mountain overlooking the Promised Land, which God had promised to the Hebrews as their home.

The story of Moses teaches the importance of faith and obedience to God, as well as God's power to deliver and provide for His people.

Keywords File Management Passwords	File Anything you save. It could be a document, a piece of music, a collection of data or something else.	Folder/Sub-folder A place to store files that are related, eg. all of the files relating to one project. Folders help to keep work organised. Sometimes called a directory A sub-folder is a folder inside another folder.	File Management The organisation of files and folders using suitable names (which gives the identity of a file) and placed into folders.
	Server A computer that holds data to be shared with other computers. A web server stores and shares websites	Security The protection of data or hardware from unauthorised users	Password A string of characters used to verify the identity of a user

Secure Password	Non-secure Password
A mixture of numbers, letters and symbols at least 8 characters	Name, pet etc
Use of symbols	Dictionary words
Not easy to guess	Not complicated
Example: 01DI2bB57Ss! "Oh I do like to be beside the seaside!"	

Collaborate	E-safety
Sharing documents and working together online. Eg. having a meeting with different people around the world and using the same document.	<ul style="list-style-type: none"> Do not share personal information (such as your date of birth) Avoid sharing your location on social networks eg snapchat If meeting someone you only know online, do so in a public place and take an adult with you. Don't troll! (upsetting people online) Change your passwords frequently and avoid using the same password across all accounts

Cloud Storage

What is cloud storage?

Cloud storage is online storage of data. Data is stored remotely on web servers. The web servers are connected to the internet so data can be accessed anywhere you have an internet connection.

Advantages of Cloud Storage

- ✓ Data can be accessed on any device that has an internet connection
- ✓ It is easy to increase the amount of **storage** available
- ✓ **Security** and **backups** are managed by the **host company** (the cloud computing provider)
- ✓ **Data is saved automatically**
- ✓ **Data is backed up** to more than one location
- ✓ There is no need to pay IT staff to manage the **hardware**

Disadvantages of Cloud Storage

- ✓ You must have an internet connection to access the **stored data**
- ✓ **Cloud storage** can be vulnerable to hacking and you are dependant on the **host company** for providing **security**
- ✓ You are dependant on the **host company** for providing **backups**
- ✓ **Copyright** – the user sometimes loses legal rights to their original material if they store it online.
- ✓ **Additional storage** can be expensive

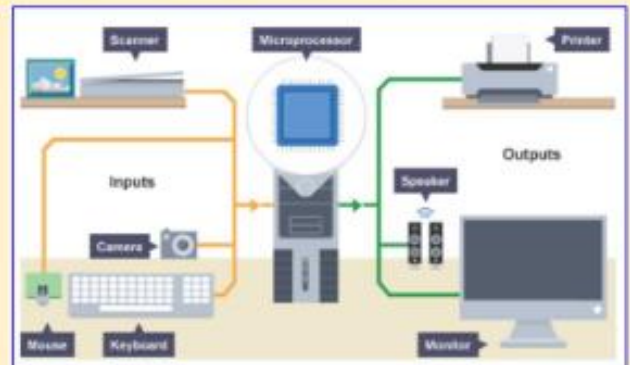
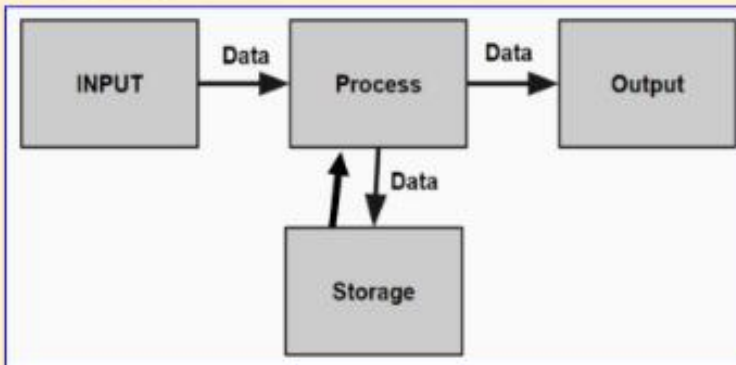


Input & Output

An **input** device **sends data to the computer system** to be processed. For example a keyboard, mouse, scanner or microphone.

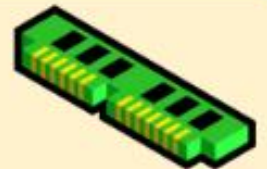


An **output** device **receives data from the computer system** that has been processed. For example a monitor, headphones, speakers or printer.



RAM, ROM (Primary Storage) & Virtual Memory

Random Access Memory (RAM) stores the instructions and data for programs **while the programs are running**. It is **volatile** so when the computer system is turned off, all data is lost.



Read Only Memory (ROM) stores the instructions that are needed to **start the computer system**. It is **non-volatile** so when the computer system is turned off and then on again, the instructions are still there.

Virtual Memory is used when **RAM is full**.

Part of the secondary storage is used as virtual memory.

Data is moved to secondary storage to make space for the new data.

When data in virtual memory is needed, it is **moved back to RAM**.



Secondary Storage

Secondary Storage is **permanent** storage that is needed to **store data** such as the **operating system, applications and files**. It is **non-volatile**

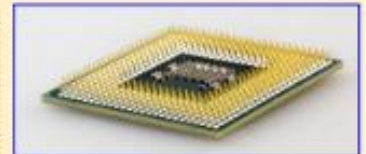
Type	Advantage	Disadvantage
Solid State	Faster data transfer speed and more durable than magnetic and some devices are more portable	Less cost effective and often has a lower capacity than magnetic
Magnetic	More cost effective and often has a higher capacity than magnetic	Slower read-write speed and less durable than magnetic because it has moving parts. Magnetic storage is also not portable
Optical	More cost effective than both magnetic and solid state. It is also very portable .	Less durable than solid state because it is easy to scratch and it has a low capacity .

Secondary storage **characteristics** that we can use to compare devices

Durability	Capacity	Portability	Cost-effectiveness	Data transfer speed
How hard wearing it is	Amount of data it can hold	How easy it can be used on other devices	Good value for money	How fast it is to read and write the data

CPU

The purpose of the CPU is to **process instructions**. During this process it **fetches an instruction** from **RAM**, **decodes** the instruction and **executes** the instruction.



Cores are independent processors in the CPU which complete the fetch, decode, execute cycle **simultaneously**

Clock speed is the number of fetch, decode, execute cycles that the CPU can perform **per second**. This is measure in **Hertz**.



Cache is memory in the CPU which is used to store **frequently used instructions**. The **data transfer speed** of cache is faster than RAM so data in cache can be **accessed more quickly** than data or instructions in RAM

Computer Performance - Answer Builder

Upgrade to a CPU with a higher **clock speed**.



Upgrade to a CPU with more **cache**.



Upgrade to a CPU with more **cores**.



Increase the amount of **RAM**.



Use a **solid state hard drive**.



More fetch decode execute cycles can be **processed per second**.

Can access **frequently used data** quicker.

More **instructions** can be processed at once.

Does not need to rely on the **virtual memory** as much.

Will have a much faster **read/write speed** which allows files to load and save quicker.

Programs and data will load faster.



Programs and data will load faster.



Programs and data will load faster.



More programs and data can be opened at the same time without affecting performance.



Programs and data will load faster.



because

so that

this means that

therefore

consequently

so you will find that

you will notice that

Embedded Systems

Embedded Systems

- Embedded systems are **computers built into other devices**.
- They are often used as **control systems**, this means that they **monitor and control machinery**.
- They are **dedicated systems**. This means that they are **designed for a single task**.
- As they are dedicated to a single task, they are much easier to **design**, cheaper to **produce** and more **efficient** at doing their task.



Example: Washing Machine

The embedded system in a washing machine will:

- Control the water pumps so that they do not overflow
- Control the water release mechanisms
- Control the washing powder tray release
- Lock the washing machine door until the washing cycle has finished
- Control the temperature for the different wash cycles

Computational Thinking	Abstraction	Decomposition	Pattern Recognition	Algorithms	Sequence	Selection
Computational thinking allows us to take a complex problem, understand what the problem is and develop possible solutions. We can then present these solutions in a way that a computer, a human, or both, can understand.	Focusing on the important information only, ignoring the details that are not needed.	Breaking down a complex problem or system into smaller, more manageable parts.	Looking for similarities among and within problems. Looking for patterns.	Developing a step-by-step solution to the problem, or the rules to follow to solve the problem.	Following an ordered set of instructions.	Making a decision within a computer program to decide which instruction to carry out next.

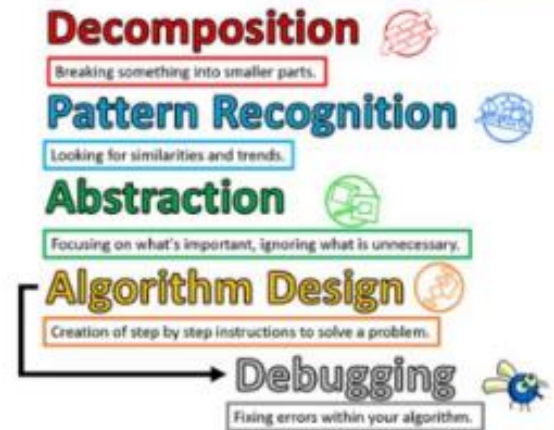
Comparison Operators	
Greater than	>
Less than	<
Greater than or equal to	>=
Less than or equal to	<=
Equal to	==
Not equal to	!=

Variables & Data Types

A **variable** is used to **store data that can change while the program is running**. The variable name (e.g. score) is used to identify the memory location of the data that is stored in RAM

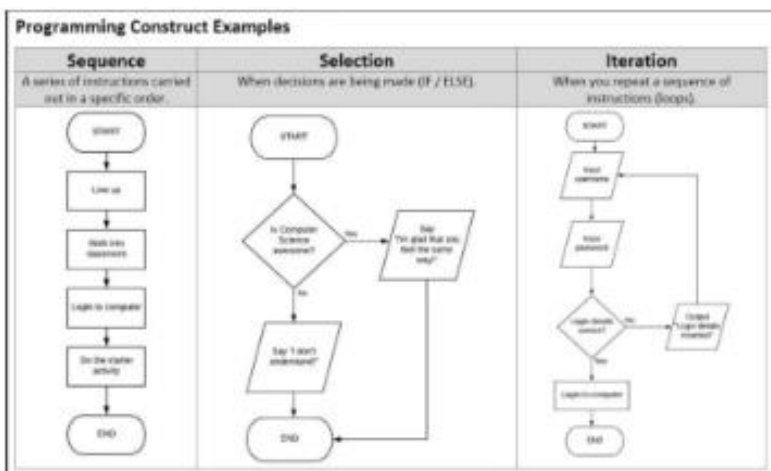
A variable can be used to store different types of data:

Character	One character such as a letter or symbol
Real	A number with a decimal point in it (e.g. 3.14)
Integer	A whole number (e.g. 3)
Boolean	Can either be True or False
String	One or more characters (e.g. Hello)



Definitions (use these when completing your tasks).

Algorithm	A set of step by step instructions in order to solve a problem.
Flowchart	An algorithm which is a visual representation of the steps needed to solve a problem.
Pseudocode	An algorithm which uses text to show the steps needed to solve a problem.
Decomposition	Breaking a complex problem down into smaller, more manageable problems.
Abstraction	Focusing on what is important and leaving out unnecessary detail.
You need to know the three main programming constructs:	
Sequence	A series of instructions carried out in a specific order.
Selection	When decisions are being made (IF / ELSE).
Iteration	When you repeat a sequence of instructions (loops).



What is an algorithm?

- A series of steps to solve a problem.
- They are not just about computers, we use them all the time in our everyday lives.
- There can be many algorithms to solve the same problem.



You will need to print out this page, to complete the exercise. Click on the link, where it appears on this sheet, for guidance and samples.

INTRODUCTION TO ISOMETRIC DRAWING

WORLD ASSOCIATION OF TECHNOLOGY TEACHERS

<http://www.technologyteachers.com.au>

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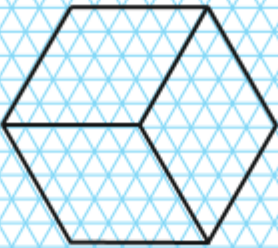


EXERCISE 1

What you need to do: Using a ruler / set square, draw a copy of the isometric cube, alongside the sample.



SAMPLE



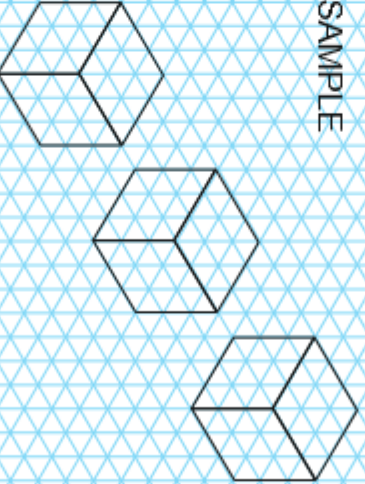
YOUR ISOMETRIC CUBE

EXERCISE 2

What you need to do: Using the grid at the bottom of the page: Draw three isometric cubes, in line with each other and equally spaced, as shown below.



SAMPLE

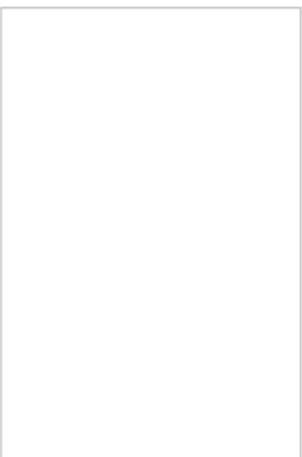

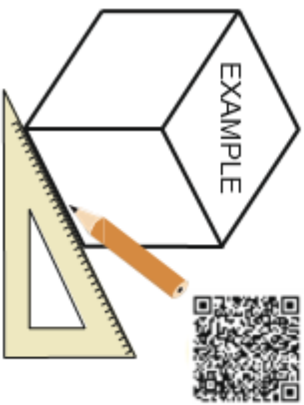


YOUR WORK

EXTENSION WORK

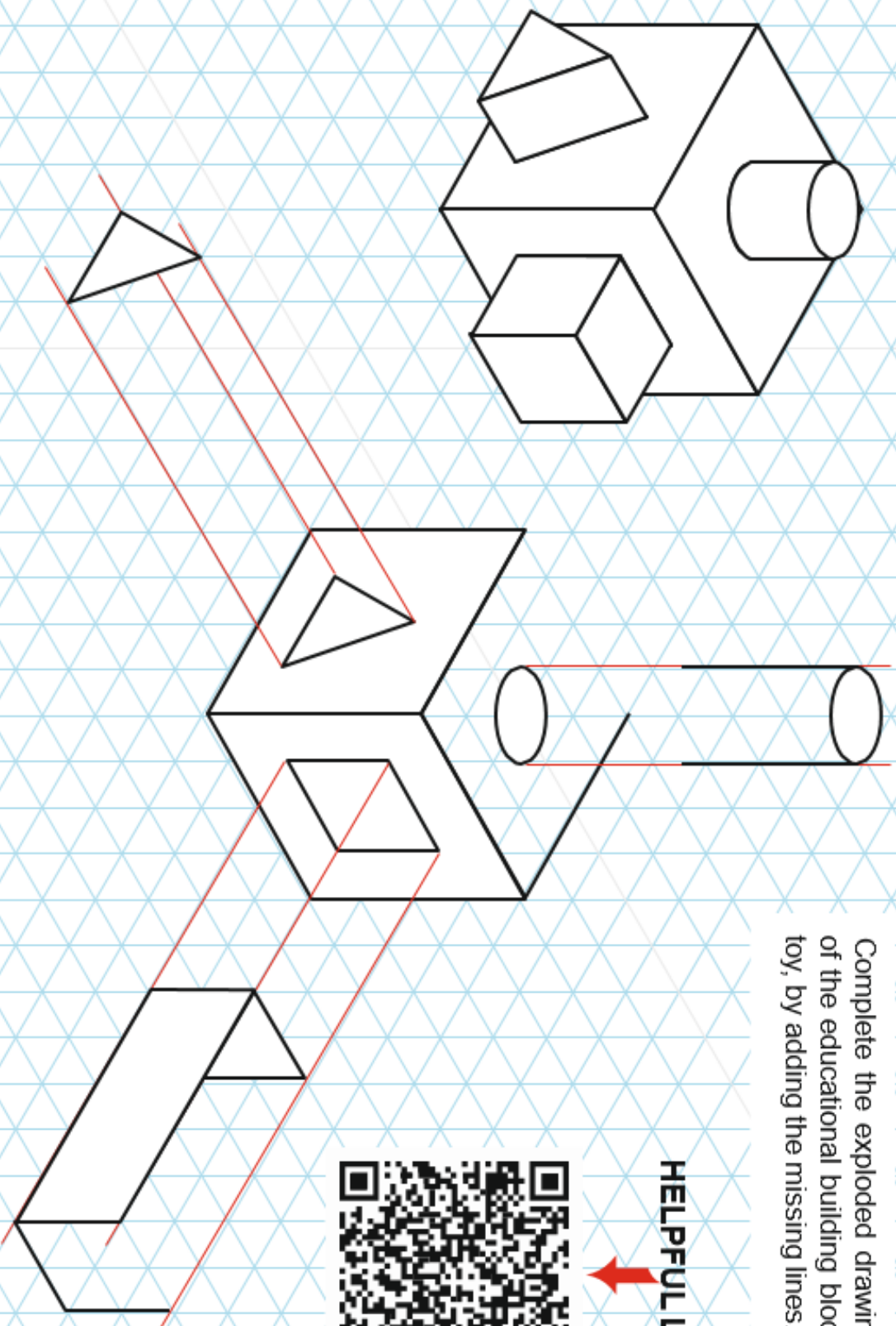
Alongside the example, draw an isometric cube, using a 30 degree set square. If you do not have a set square, use a ruler and estimate the angles. All the sides should be the same size.

EXAMPLE



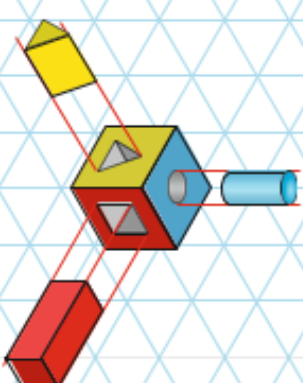
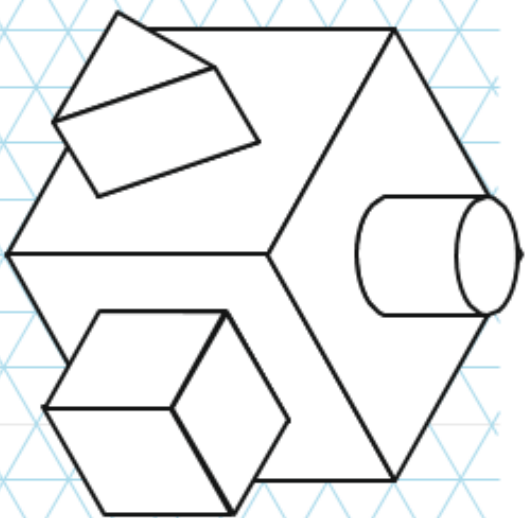
EXPLODED DRAWINGS

Complete the exploded drawing of the educational building block toy, by adding the missing lines.



HELPFUL LINK

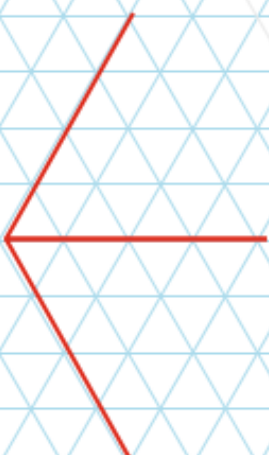




EXPLODED DRAWINGS

Draw an exploded view of the educational building block toy. Add appropriate colour and shade. Start your drawing on the 30 degree lines and single vertical line, just below the centre of the page

HELPFUL LINK



Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Each serving (150g) contains

Energy 1066kJ 250kcal	Fat 3.0g LOW	Saturated 1.3g LOW	Sugars 34g HIGH	Salt 0.9g MED
13%	4%	7%	38%	15%

Typical values (as sold) per 100g: 697kJ/167kcal

Choose foods lower in fat, salt and sugars

Eat at least 5 portions of a variety of fruit and vegetables every day



6-8 a day

Water, lower fat milk, sugar-free drinks including tea and coffee all count.

Limit fruit juice and/or smoothies to a total of 150ml a day.

Eat less often and in small amounts



Eat more beans and pulses, fish, eggs, meat and other proteins sourced fish per week, one of which is oily. Eat less red and processed meat

Dairy and alternatives Choose lower fat and lower sugar options

Choose unsaturated oils and use in small amounts

Per day 2000kcal 2500kcal = ALL FOOD + ALL DRINKS

Languages and me! Year 7 French 7.1

Knowledge Organiser

My belongings – Cognates, Gender; masculine and feminine nouns. Plurals. Use of 'avoir'.

A **noun** is an object, place or thing.

In French, all nouns are either **masculine (masc)** e.g. **un** stylo or **feminine (fem)** e.g. **une** gomme.

If there is more than one item e.g. 3 pens, we call this **plural (pl)**.

	masculine singular	feminine singular	Word beginning with a vowel	plural
a	un	une		des
the	le	la	l'	les
my	mon	ma		mes

An **adjective** describes a noun e.g. a **green** bag.

In French, adjectives normally go after the word it's describing e.g. un sac **vert** (a bag green).

If the noun is feminine the adjective has to agree (e.g. une gomme **verte**)

If the noun is plural we also add an 's' to make it agree (e.g. deux gomme**s** **vertes**)

	masc	fem	masc plural	fem plural
green	vert	verte	verts	vertes
white	blanc	blanche	blancs	blanches

Usually words that end with the letter 'e' or 'ion' are feminine e.g. **une** trousse, **une** animation.

Most plurals end with the letter 's' like in English e.g. **deux** gomme**s**

Some form their plural with an 'x' e.g. **un** jeu, **deux** jeu**x**

A pronoun is a word that states who is doing the verb e.g. **She** plays tennis.

Pronouns	Avoir – to have
je (I)	J'ai – I have
tu (you)	tu as – You have
il (he), elle (she), on (we)	il a / elle a / on a - He has/she has/we have
nous (we)	nous avons – we have
vous (you) (pl)	vous avez – you have (pl)
ils/elles (they)	ils ont / elles ont – they have

Je n'ai pas de... = I don't have... When we use this phrase there is no un/une e.g. Je n'ai pas **de** stylo

People around me 7.2 Knowledge Organiser

Describe yourself (appearance and personality). Family, friends (describing others), pets,

<u>Pronouns</u>	<u>Avoir – to have</u>	<u>Être – to be</u>
Je (I)	J'ai (I have)	Je suis (I am)
Tu (you)	Tu as (you have)	Tu es (You are)
il (he), elle (she)	il a (he has), elle a (she has)	il est (he is), elle est (she is)
Nous (we)	Nous avons (we have)	Nous sommes (we are)
Vous (you) (pl)	Vous avez (you have)	Vous êtes (you are)
ils /elles (they)	ils ont /elles ont (they have)	ils / elles sont (they are)

<u>Comparisons</u>	
Plus - more	Jean est plus intéressant que Paul
Moins - less	Paul est moins intéressant que Jean
<u>Superlative</u>	
Le /la plus – the most	Jean est le plus intelligent
Le /la moins – the least	Marie est la moins sympa

Je m'appelle - My name is / I am called
Elle s'appelle - she is called
Il s'appelle – he is called
Ils s'appellent – they are called

To say “my” in French we must change how we say it to match the noun (whether it is masculine, feminine or plural). Whether you are male or female doesn't change which word you use.

Examples :

Mon père = my dad

Ma mère = my mum

Mes parents = my parents

	<u>Masc</u>	<u>Fem</u>	<u>Plural</u>
my	mon	ma	mes
your	ton	ta	tes
his/her	son	sa	ses

Adjective agreement.

Remember adjectives have to agree with the noun.

Normally you would add an 'e' to make the adjective feminine but check out the following rules...

Il est paresseux – elle est paresseuse

Il est sportif – elle est sportive

Il est travailleur – elle est travailleuse

Il est gentil – elle est gentille

Il est mignon – elle est mignonne

Il est beau – elle est belle

Il est vieux – elle est vieille

Il est sympa – elle est sympa

A **noun** is an object, place or thing.

In Spanish, all nouns are either **masculine (masc)** e.g. *un boli* or **feminine (fem)** e.g. *una goma*.

If there is more than one item e.g. 3 pens, we call this **plural (pl)**.

	masculine singular	feminine singular	plural
a	un	una	unos/ unas
the	el	la	los/las
my	mi	mi	mis

An **adjective** describes a noun e.g. a **red** pen.

In Spanish, adjectives normally go after the word it's describing e.g. *un boli rojo* (a pen red).

If the noun is feminine the adjective has to agree e.g. **una goma blanca**

If the noun is plural we also add an 's' to make it agree e.g. **dos gomas blancas**

	masc	fem	masc plural	fem plural
white	blanco	blanca	blancos	blancas

Most Spanish nouns ending in "**o**" and "**ma**" are masculine e.g. **un libro, un problema**
 Most Spanish nouns ending in "**a**", "**sión**" "**dad**" and "**tud**" are feminine e.g. **una tableta, una televisión, la felicidad, la gratitud**
 All plurals end with the letter '**s**' like in English e.g. **dos gomas**

A pronoun is a word that states who is doing the verb e.g. **She** plays tennis.

Pronouns	Tener – to have
yo (I)	tengo – I have
tú (you)	tienes – You have
él (he), ella (she)	tiene - He has/she has
Nosotros/nosotras (we)	tenemos – we have
Vosotros/vosotras (you) (pl)	tenéis – you have (pl)
ellos/ellas (they)	tienen – they have
No tengo...=I don't have... When we use this phrase there is no un/una e.g. No tengo boli	

People around me 7.2 Knowledge Organiser

Describe yourself (appearance and personality). Family, friends (describing others), pets,

<u>Pronouns</u>	<u>Avoir – to have</u>	<u>Être – to be</u>
Je (I)	J'ai (I have)	Je suis (I am)
Tu (you)	Tu as (you have)	Tu es (You are)
il (he), elle (she)	il a (he has), elle a (she has)	il est (he is), elle est (she is)
Nous (we)	Nous avons (we have)	Nous sommes (we are)
Vous (you) (pl)	Vous avez (you have) (pl)	Vous êtes (you are) (pl)
ils/elles (they)	ils ont/elles ont (they have)	ils/elles sont (they are)

Comparisons

Plus - more
Moins - less

Jean est plus intéressant que Paul
Paul est moins intéressant que Jean

Superlative

Le /la plus – the most
Le /la moins – the least

Jean est le plus intelligent
Marie est la moins sympa

Je m'appelle - My name is / I am called
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his/her	son	sa	ses

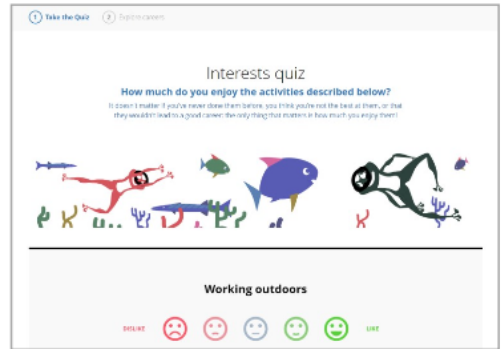
Adjective agreement:

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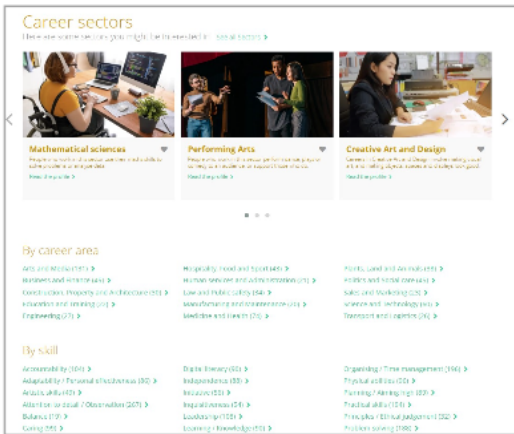
Il est paresse**ux** – elle est paresse**use**
Il est sportif – elle est sportive
Il est travail**leur** – elle est travail**leuse**
Il est gentil – elle est gentille
Il est mignon – elle est mignonne
Il est beau – elle est belle
Il est vieu**x** – elle est vieu**ille**
Il est sympa – elle est sympa

CAREERS AT HPA

Our Careers guidance and provision at Hans Price offers a wide range of experiences and opportunities to inform and develop aspirations for the future. In addition to a careers featuring in our SPACE curriculum and weaving through all subjects taught at Hans Price, all students use UniFrog to support their careers provision and their planning for Post-16 and beyond.

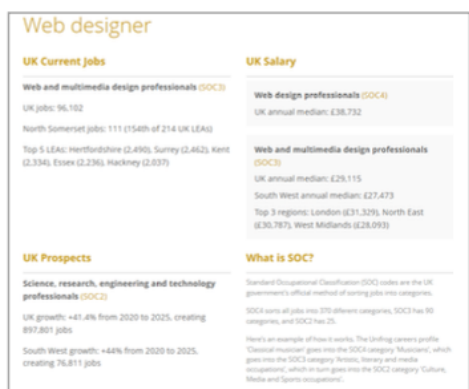


Unifrog is the universal destinations platform and is designed to support learners in making the most informed decisions about their futures. It has a range of tools that are suitable for all year groups. Each student has their own account where they can explore all the career and next step options available to them and find information on everything from managing their workload to writing a winning CV. Students have access to a wide variety of video and written content, and interactive quizzes and tests, information about careers and the local labour market and emerging industries.



Students can access Unifrog through the LCF Student Navigator page or searching for Unifrog online. Students initially sign up to the platform by clicking a link in their welcome email, where they create a password and can begin using the platform. They sign in to Unifrog using their Hans Price email address and password and they can do so from any computer, tablet, or smartphone. We would encourage you to use the platform with your child so you can support them through the process of deciding their next step.

You can also have your own Unifrog account. You'll be able to research careers, attend webinars delivered by employers and universities to learn more about their opportunities, and compare pathways so you can support your child in making an informed decision about their next steps. The sign up code you need is: **HPAMParents** and you can sign up here: www.unifrog.org/code. You can also sign up to Unifrog's parent/carer newsletter when you first sign



Upcoming Webinars

Join live

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Watch on demand

Top tips for writing the perfect CV

Part of Applications masterclasses webinar series

Employers will use your CV to decide whether you're fit for the job, so you need to make sure it stands out from the crowd. In this webinar, professional services network, Crowe, hygiene and health company, Essity, and consultancy firm, Barnett Waddingham, give their insider tips on how to ace your CV or written application. Sign up today to join this live webinar!

Monday 27 November @ 16:30 UK time - 45 mins - [sign up](#) or [Share](#)



PERFORMING ARTS OPPORTUNITIES




SCHOOL MUSICAL:

SCHOOL MUSICAL IS IN JULY - REHEARSALS ARE TUESDAY & WEDNESDAY AFTER SCHOOL READY FOR THE SHOW IN JULY.


DANCE SHOW:

YOU CAN AUDITION FOR THE DANCE SHOW IN APRIL. AUDITIONS ARE USUALLY 3 WEEKS BEFORE THE SHOW.



MUSIC SHOW:

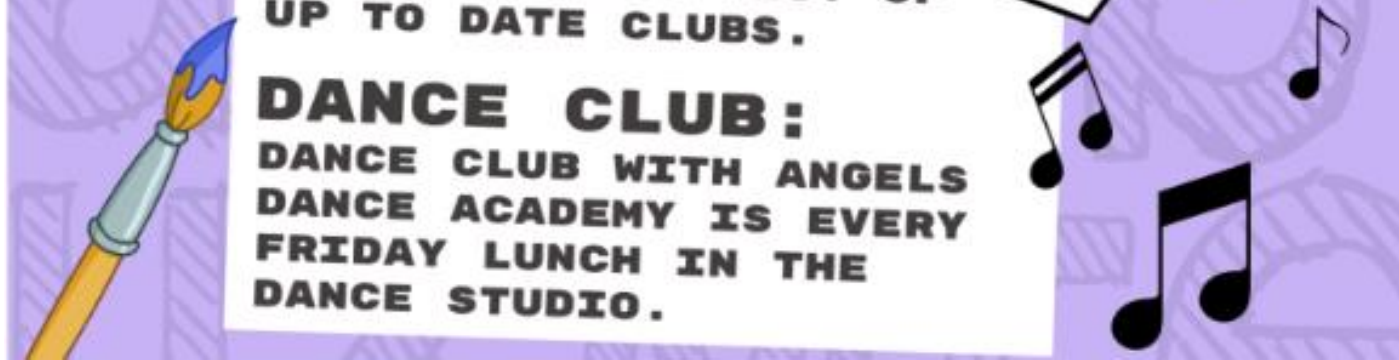
YOU CAN AUDITION FOR THE MUSIC SHOW IN FEBRUARY. AUDITIONS ARE USUALLY 3 WEEKS BEFORE THE SHOW.



PLEASE SEE YOUR MUSIC TEACHER FOR A LIST OF UP TO DATE CLUBS.

DANCE CLUB:

DANCE CLUB WITH ANGELS DANCE ACADEMY IS EVERY FRIDAY LUNCH IN THE DANCE STUDIO.



	Monday	Tuesday	Wednesday	Thursday	Friday
Before School			Touch Rugby 7.15 - 8am Years 9&10 Astro		Just Dance 8 - 8.30am All students Dance Studio
Lunch	Futsal Year 7 Sports Hall	Futsal Year 11 Sports Hall	I.S Club Years 7, 8 & 9 G7	Chess Club All students F6	Just Dance 8 - 8.30am All students Dance Studio
	I.S Club Years 7, 8 & 9 G7	Hero Club All Students G2	Futsal Year 9 Sports Hall	I.S Club Years 7, 8 & 9 G7	Dance Club All Students Dance studio
		I.S Club Years 7, 8 & 9 G7	Film Club All years Library	Futsal Year 10 Sports Hall	I.S Club Years 7, 8 & 9 G7
			Hula Hoop Club All years Dance Studio		Dance Club All Students Dance studio
After School	I.S Club Years 7, 8 & 9 LS3	Girls Football All years Outside Changing Rooms	I.S Club Years 7, 8 & 9 LS3	Football Years 7&8 Outside Changing Rooms	Futsal Year 8 Sports Hall
		Cheerleading All Students Inside Changing Rooms		Netball Years 7, 8 & 9 Inside Changing Rooms	I.S Club Years 7, 8 & 9 LS3
		Football Years 9&10 Outside Changing Rooms		Basketball All students Inside Changing Rooms	Parkour 5.45-6.45pm Externally delivered sessions free to CLF/HPA students G3
		Rugby All Students Outside Changing Rooms		I.S Club Years 7, 8 & 9 LS3	
		Drama Club All Students Drama Studio (A6)			
		I.S Club Years 7, 8 & 9 LS3			

For all lunchtime sports clubs please bring trainers and remove tie and blazer

Enrichment Timetable Term 1