

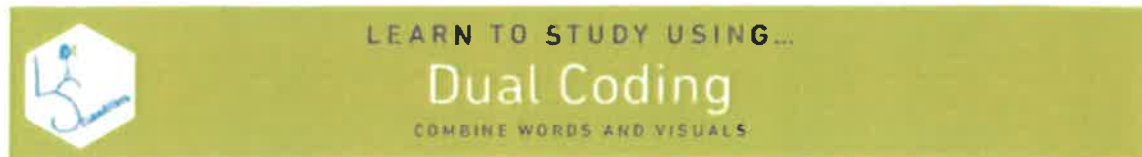
Year 7 Knowledge Organiser Term 1



	LOOK, COVER, WRITE, CHECK	DEFINITIONS TO KEY WORDS	FLASHCARDS	PICTURES
STAGE 1	Look at & study an area of your knowledge organiser 	Write down the key words & definitions 	Write key words, dates/formulae, equations/quotes on one side & answers on the other 	Draw pictures/diagrams/ cartoon strips 
STAGE 2	Cover up your knowledge organiser and write everything you remember 	Cover up the definitions. How many can you remember? Repeat. 	Include pictures or diagrams if it helps. Read through them. 	Label your pictures/diagrams/ cartoon strips 
STAGE 3	Check. Correct mistakes in green and add anything you missed. Repeat 	Check. Correct mistakes in green pen. Which ones do you find hard to remember? 	Test yourself and get someone to test you. 	Explain out loud to yourself or family/friend what your images show 
	SELF QUIZZING	MINDMAPS	PAIRED RETRIEVAL	SPEAK, COVER, WRITE, CHECK
STAGE 1	Use your knowledge organiser to create quiz questions. 	Create a mindmap of everything you can remember from your knowledge organiser 	Give a family member/friend the knowledge organiser to hold 	Read out loud the information from the knowledge organiser several times. 
STAGE 2	Write down the answers to your quiz 	Check your knowledge organiser & use a green pen to make any corrections. 	Get them to test you using the knowledge organiser 	Cover up your knowledge organiser and write everything you remember 
STAGE 3	Keep self-quizzing until you get all the answers correct 	Add additional information to your mindmap or make connections to other knowledge 	Write down your answers to their questions 	Check. Correct mistakes in green and add anything you missed. Repeat. 

Choose any of the following activities to complete your homework

Dual coding example



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HOW TO DO IT



Look at your class materials and find visuals. Look over the visuals and compare to the words.



Look at visuals, and explain in your own words what they mean.



Take information that you are trying to learn, and draw visuals to go along with it.

HOLD ON!

Try to come up with different ways to represent the information visually, for example an infographic, a timeline, a cartoon strip, or a diagram of parts that work together.

INFOGRAPHIC



CARTOON STRIP



DIAGRAM



TIMELINE



GRAPHIC ORGANIZER



Work your way up to drawing what you know from memory.



RESEARCH

Read more about dual coding as a study strategy

Mayer, R. E., & Anderson, R. B. [1992]. The instructive animation: Helping students build connections between words and pictures in multimedia learning. *Journal of Educational Psychology*, 4, 444-452.

Elaboration



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LEARN TO STUDY USING...

Elaboration

EXPLAIN AND DESCRIBE IDEAS WITH MANY DETAILS



HOW TO DO IT

Ask yourself questions while you are studying about how things work and why, and then find the answers in your class materials and discuss them with your classmates.



As you elaborate, make connections between different ideas to explain how they work together. Take two ideas and think of ways they are similar and different.



Describe how the ideas you are studying apply to your own experiences or memories. As you go through your day, make connections to the ideas you are learning in class.



HOLD ON!



Make sure the way you are explaining and describing an idea is accurate. Don't overextend the elaborations, and always check your class materials or ask your teacher.



Work your way up so that you can describe and explain without looking at your class materials.



RESEARCH

Read more about
elaboration
as a study strategy

McDaniel, M. A., & Donnelly, C. M. (1996). Learning with analogy and elaborative interrogation. *Journal of Educational Psychology, 88*, 508-519.

Wong, B. Y. L. (1985). Self-questioning instructional research: A review. *Review of Educational Research, 55*, 227-268.



LEARNINGSOCIETISTS.ORG

LEARN TO STUDY USING...

Interleaving

SWITCH BETWEEN IDEAS WHILE YOU STUDY



HOW TO DO IT

Switch between ideas during a study session. Don't study one idea for too long.



Go back over the ideas again in different orders to strengthen your understanding.



Make links between different ideas as you switch between them.



HOLD ON!



While it's good to switch between ideas, don't switch too often, or spend too little time on any one idea; you need to make sure you understand them.



Interleaving will feel harder than studying the same thing for a long time. But don't worry - this is actually helpful to your learning!



RESEARCH

Read more about interleaving as a study strategy

Rohrer, D. (2012) Interleaving helps students distinguish among similar concepts. *Educational Psychology Review*, 24, 355-367.

KNOWLEDGE ORGANIZER – YEAR 7 ART

Portraiture

EXAMPLES OF FINAL OUTCOMES:

YOU WILL LEARN:

Skills to produce two accurate portraits using pencil shading and paint. You will then produce your own self-portrait using mark-making techniques with oil pastels.

WHY AM I LEARNING THIS?

The foundation skills in this project will enable you to tackle the varied concepts, artists, techniques and processes throughout Year 7. You will build on your knowledge and skills with each project as they increase in difficulty, enabling you to express yourself in a confident way.

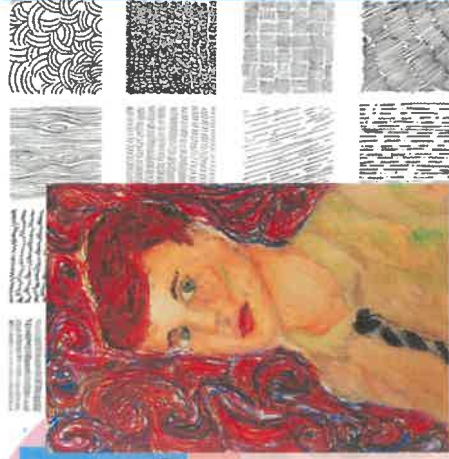
CONTEXTUAL KNOWLEDGE:

Steve McCurry Vincent van Gogh



Impressionism was about artists painting outdoors and spontaneously usually of landscapes and of everyday life. The focus was on light and colour using rapid and broken brushstrokes to represent this.

Post-Impressionism was a few artists who extended and changed impressionism from 1886. Vincent van Gogh was one of these artists.



Mark making is a term used to describe the different lines, patterns, and textures we create in an artwork.

KEYWORDS

Proportion

Tone

Monochrome

Mark-making

Shape

Form

Photography

HOMEWORK TASKS:

Tick when complete ✓

1. Draw an eye.
2. Draw a mouth and nose.
3. Draw an ear.
4. Research Vincent van Gogh.
5. Sunrise/sunset in the style of van Gogh.
6. Create a paper collage of a person.

My Progress in Year 7

Name:	Project: Portraiture	Year grade:
	From 12.2	Grade 12
Targets		
Show creative details with the oil pastels and develop a background for your portrait in keeping with Van Gogh's style.		
Show skilled application of oil pastels to create light and dark tones and replicate Van Gogh's style.		
Show accurate colour selection/layering and demonstrate the mark-making technique with oil pastels.		
Draw facial features accurately with correct proportions.		
Use pastels to show accurate detail and colour. Carefully apply dark and light tones, which suggest form and build up layers of paint to achieve an even application.		
Show a variety of dark to light tones of your chosen colour painted carefully onto your portrait.		
Draw facial features accurately with correct proportions.		
Develop areas of features shading to show accurate detail and colour. Show accurate detail.		
Use pastels to show accurate detail and colour. Show accurate detail.		
Show accurate colour selection/layering and demonstrate the mark-making technique with oil pastels.		
Draw facial features accurately and begin to show shading and detail.		
End of project grade		
Teacher comment:		

HOW WELL AM I DOING?

The relationship of one part of a whole to other parts.

The lightness or darkness of something – this could be shade, or how dark or light a colour appears.

Monochrome means one colour.

Different lines, patterns and textures.

A shape is an area enclosed by a line. It is 2 dimensional and can be geometric or organic.

Forms are 3 dimensional shapes. They occupy space, like people!

A photograph is an image produced by the action of light onto light sensitive paper.

Information about Vincent Van Gogh:

<https://www.tate.org.uk/kids/explore/who-is/who-vincent-van-gogh>

Year 7 Computing – Online safety

Keywords for types of e-safety :

Cyberbullying	The bullying of another person using the internet, mobile phones and other digital devices, with the intent to deliberately upset them.
Netiquette	Correct or acceptable way of communication on the internet.
Cyberstalking	Repeated use of electronic communication to harass or frighten someone.
Online Grooming	Deliberate act taken to befriend and create an emotional connection with a child, resulting in not good intentions.
Cyberpal	A friend who you only communicate with through the internet or cyberspace.
Password	A secret word or phrases that must be used to gain access to something.
Emoji	Small digital image or icon used to express an idea, emotion, etc.
Hacking	Gaining access to a computer, with the intention of stealing data or causing damage.
Download	Copying data from one computer system to another, typically over the internet.
Chat room	A website, or part of a website which allows people to communicate via a computer network in real time.
Spam	An email that is sent to a large number of people and mostly consists of advertising.
SNS	An online platform that allows users to create a public profile and interact with others.

IM	Instant messaging.
Block	Action taken to stop interactions from certain people via online communication.
Social network	An online platform that allows users to create a public profile and interact with other users on the website.
Online profile	A social identity that an internet user establishes in online communities and on websites.
Privacy settings	The part of a social networking website, internet browser, piece of software, etc. that allows you to control who sees information about you.
Virus	A program or piece of code that is loaded onto your computer without your knowledge and runs against your wishes and has a detrimental effect.
Phishing	Trying to get you to follow a link and provide information to the sender, like a password or an account number.
Plagiarism	The act of presenting another's work or ideas as your own.

How do you stay safe on the Internet?

1. Create complex passwords
2. Boost your network security
 3. Use a firewall
 4. Click smart
 5. Keep up to date

Types of Cyberbullying:

- **Harassment:** Using text messaging, instant messaging and email to harass, threaten or embarrass the target.
- **Impersonating someone:** Developing a screen name that is similar to the victim's screen name and then posting rude or hurtful remarks while pretending to be the victim.
- **Creating Websites:** Spreading rumours, lies or gossip about the victim online through websites or blogs.

Ways to Prevent Cyberbullying:

- **Notice:** Recognize if there has been a change in mood or behavior and explore what the cause might be.
- **Talk:** Ask questions to learn what is happening, how it started, and who is involved.
- **Report:** Most social media platforms and schools have clear policies and reporting processes. If a classmate is cyberbullying, report it the school.
- **Support:** Peers, mentors, and trusted adults can sometimes intervene publicly to positively influence a situation where negative or hurtful content posts about a child.

Character

For the GCSE course you are required to have a thorough knowledge of performance skills, one of which is using different techniques to create a range of characters.

VOCALS

High **Pitch:** How high or low your voice is.

Low

Pause: A break in speaking; a period of silence.

Volume: The loudness or quietness of your voice.

Power: The amount of tension in your voice. This is not the same as volume - you can have large vocal power at a low volume.

Accent: The way words are pronounced in a local area or country. E.g. Liverpudlian, R.P., 'Jerkier', Irish, American South.

Pace: The speed that you speak at.

Diction: The clearness of your voice - the audience being able to understand what you are saying.

Emphasis: 'Highlighting' a specific word or phrase, by changing at least one aspect of your vocals.

Articulation: The way that you pronounce each letter in a word. If using a high level of articulation, you would pronounce every letter in every word.

PHYSICALITY

Direction: The position you face or move in.

Gait: The way that you walk.

Tension: How tightly you are holding your muscles.

Gesture: A movement (of the head, arm, hand, leg or foot) which communicates a specific meaning.

Eye Contact: Choosing to look at a specific performer, object, audience member or direction.

Pace: The speed that you move at.

Control: Being able to execute a specific and precise movement.

Facial Expression: Using your face to show how a character is feeling.

Posture: The way that you sit or stand; the alignment of your spine. Your physical stance, which conveys information about your character.

How could you use vocal skills to communicate subtle changes to a character's emotions?

How can eye contact change the meaning communicated?

How could you use physical skills to communicate subtle changes to a character's emotions?

How might adding a pause change the meaning of a line?

What makes a successful performance?



KS3 YEAR 7 D&T RESISTANT MATERIALS

Isometric Drawing 2 point perspective



Tools and Equipment

Measuring and marking

Steel rule

An accurate tool for measuring and marking out

Try square

A tool used to check right angles on wood or plastic

Template

A template is a tool used to mark out shapes repeatedly

Shaping and finishing

Metal file

Used to shape or smooth wood, metal or plastic

Glass paper

An abrasive paper used to smooth the surface or edges of wood

Disc sander

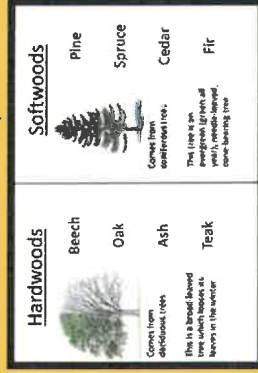
A machine used to smooth the edges of materials

Softwood

Softwoods come from coniferous trees which are evergreen, needle-leaved, cone-bearing trees, such as cedar, fir and pine.

Hardwood

Hardwoods come from broadleaved, deciduous trees, such as oak, maple and beech.



Manufactured board

Manufactured boards are timber sheets which are produced by gluing wood layers or wood fibres together. Manufactured boards often made use of waste wood materials. Ply, MDF or chipboard.



Keywords

Bench hook
Bookend
Coping saw
Hardwood
Softwood
Joint
Tenon saw
Reciprocating saw
Vice
Abrasive
Template
Specification
Research
Design
Practical task
Evaluation
Timber cycle



Cutting

Tenon saw



Coping saw



Scroll saw



Bench hook



Pillar drill



Laser cutter



We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse** and **describe** an already existing product.

ACCESS FM - Helpsheet



A is for **Aesthetics**

C is for **Cost**

C is for **Customer**

E is for **Environment**

S is for **Size**

S is for **Safety**

F is for **Function**

M is for **Material**

Traditional wood joints:

Butt Joint
Lap / Rebate Joint
Finger Joint
Dovetail Joint
Mitre Joint

Maths in DT:

Multiplication
Divide
Add / Subtract
Measurement conversion
Ratios
Percentages
Surface area

What is good design?

Clear ideas
Annotations
Measurements
Content
Presentation
Balance

Health and Safety in DT:

- Listen to your teacher's instructions
- Always wear an apron
- Long hair should be tied back
- Don't use equipment you are not trained on
- Always stand up during practical lessons
- When using machines, always wear safety glasses
- Only use the stop button in an emergency
- Work quietly and be sensible and careful at all times



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KS3 YEAR 7

DT TEXTILES

Tools and Equipment	
Measuring and marking	
Measuring Tape	Fabric tape measure used to measure
Tailor's chalk	A temporary mark on fabric
Template / Pattern	A template / pattern is a tool used to mark out shapes repeatedly

Constructing	
Sewing needle	Helps to sew fabric together
Embroidery needle	A needle with a larger eye to accommodate embroidery thread
Sewing machine	Machine sews fabric together
Pins	A temporary method to hold fabric in place
Tacking stitch	A temporary stitch to hold fabric together

Fibres to Fabric

Fibres – short (staple) or long (filament) threads used to make yarn.

Yarn - Yarn is a **length of fibres**.

Continuous length of fibres which are interlocked, used to produce fabrics, as well as in crocheting, knitting, embroidery and ropemaking.

Fabric – cloth made up of woven/knitted/bonded fibres/yarn

Fibre Categories:

Natural Fibres

- Plant based natural fibres:
- Cotton
- Linen
- Flax
- Coir (coconut)

Animal based natural fibres:

- Wool
- Angora
- Silk

Man-made Fibres

- Polyester
- Acrylic
- Nylon

Fabric Construction:

- Woven
- Knitted
- Bonded

Keywords

Resilience
Design
Product analysis
Research
Evaluation
Stitch
Scissors
Sewing machine
Fibres
Yarn
Fabric
Customer
Environment
Function
Material
Seam allowance
Invisible stitch
Embroidery
Applique
UCD

Cutting

Fabric shears	Scissors used for cutting fabric
Thread scissors	Scissors used for cutting thread
Stitch ripper	Used for removing sewn stitches from fabric
Pinking shears	Creates a zig zag cut edge for decoration to prevent fraying

Surface Decoration

Applique	Sewing one piece of fabric on top of another piece of fabric
Embroidery	A decorative stitch
Beads	A small decorative object which can be sewing onto fabric
Buttons	A type of fastener

Types of Seams:

- Plain
- French
- Flat felled
- Bound
- Lapped

Maths in DT:

- Multiplication
- Divide
- Add / Subtract
- Measurement conversion
- Ratios
- Percentages
- Surface area

What is good design?

- Clear ideas
- Annotations
- Measurements
- Content
- Presentation
- Balance

Health and Safety in DT:

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Year 7 Food - Knowledge Organiser

Key Skills

Breadmaking

Kneading – This works the dough to develop the gluten in the flour.

Gluten – The protein in flour that gives baked goods their structure and texture.

When making the dough the dry ingredients are combined with the wet ingredients. Warm water is added to activate the yeast which is a natural raising agent.

Fermentation - Yeast feeds on the sugar contained with the dough, producing carbon dioxide and alcohol, in a process called fermentation. During bread making, the dough is left in a warm place. The warmth causes fermentation to take place

Function of ingredients in bread – Strong plain flour, water, salt, yeast, sugar, oil.

Key Practical Skills

- **Chopping and Knife Skills** – fruit salad, layered salad
- **Rubbing in method** – shortbread, scones and quiche
- **Creaming method** – fairy cakes
- **Melting method** – flapjacks
- **Pastry Making and Rolling** – Quiche, tomato tart
- Bread making – Bread Rolls, Focaccia, Chelsea buns.

Health and Safety Rules in our Kitchen

- Wash hands thoroughly with soap and hot water
- Tie hair back
- Put on a clean apron
- Blazer and jumper off and roll up sleeves
- Bags under the table and chairs pushed under
- Sensible behaviour
- Listen to instructions
- No running in the kitchen
- Do not cough or sneeze onto food
- Use the correct colour chopping board
- Clear up spills immediately
- Do not mix raw and cooked food on the same board
- Follow the washing up routine

Food Hygiene

- **Food Poisoning:** illness caused from eating contaminated food.
- **Bacteria:** Microscopic living organisms – some are good and some are bad!
- **High risk foods:** Foods that are high in protein and high in moisture. These foods need to be cooked and stored correctly to avoid harm

Personal Skills

- Confidence
- Organisation
- Teamwork
- Time management



Knife Skills



Bridge Hold



Claw Hold

Vegetable cuts



Conduction

Energy is transferred by direct contact



Convection

Energy is transferred by the mass motion of molecules



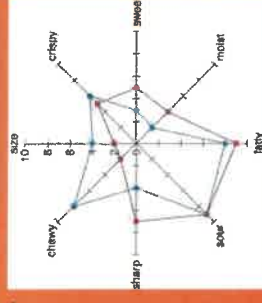
Radiation

Energy is transferred by electromagnetic radiation



Sensory Analysis

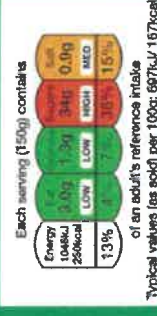
Using technical descriptive words to evaluate food products. Using our senses – taste, texture, aroma and appearance. We record this information onto a star (sensory) profile.



We use this to compare the sensory profile of a shop bought and home made product.

Healthy eating

The Eatwell guide shows how much of what we eat in total should come from each of the five food groups.



The Traffic light system shows us if a product is high, medium or low in fat, saturated fat, sugar, fibre and energy so we can make an informed choice

FIGURATIVE LANGUAGE DEFINITIONS

- Personification:** giving human qualities to non-human things.
- Onomatopoeia:** a word whose sound suggests its meaning.
- Hyperbole:** exaggeration to emphasise a point.
- Simile:** a comparison that uses the words 'like' or 'as'.
- Metaphor:** comparing one thing to another, directly, in a way that isn't literally true.
- Alliteration:** use of the same consonant at the beginning of adjacent or closely connected words.
- Sibilance:** use of the 's' sounds in quick succession.

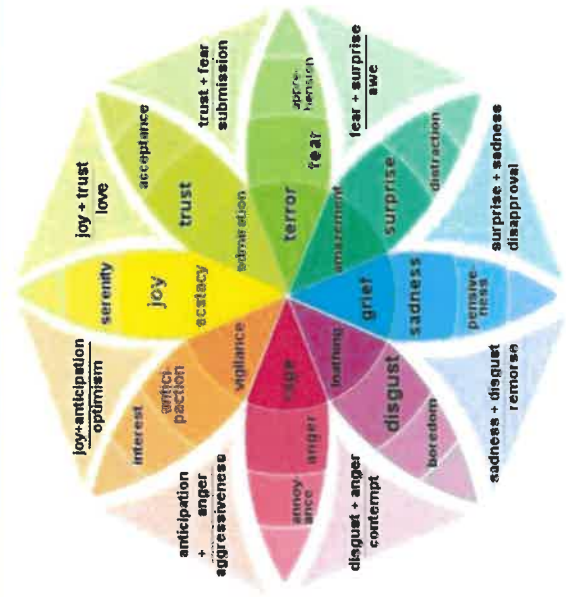
ENGLISH LANGUAGE DEFINITIONS

- Clause:** a group of words that includes a subject and a verb.
- Simple Sentence:** a sentence that consists of one independent clause.
- Compound Sentence:** a sentence that consists of two clauses joined with a connective.
- Complex Sentence:** a sentence containing multiple clauses, with one main clause and a subordinate (less important) clause.
- Noun:** a naming word.
- Verb:** a doing word.
- Adjective:** a word that describes a noun.
- Adverbs:** word giving extra information about the verb.
- Pronouns:** a word that can replace a person's name to refer to them.
- Connective:** a word that joins parts of a sentence together.

ELEMENTS OF WRITTEN ANALYSIS

- P POINT** • **What is the point you're making?**
- E EVIDENCE** • **How do you know this?**
• *Quote from text.*
- T TERMINOLOGY** • **Give a term for a key word/phrase.**
- A ANALYSIS** • **Why is the word/phrase /comparison used?**
- L LINK** • **Refer to context, or link back to the question.**

FEELINGS AND EMOTIONS



STRUCTURAL FEATURES DEFINITIONS

- Rhythm:** the beat and pace of a poem, created by the pattern of stressed and unstressed syllables in a line or verse.
- Rhyme:** the correspondence of two or more words with similar-sounding final syllables placed so as to echo one another.
- Rhyming couplet:** two consecutive lines that end with the same sound.
- Form:** the overarching structure or pattern of the poem - how it looks on the page.
- Structure** refers to what the poem is made up of, how it is presented to the reader, and the technical aspects, like line length and rhyme scheme.
- Stanza:** a division of a poem consisting of two or more lines arranged together as a unit. More specifically, a stanza usually is a group of lines arranged together.
- Open form:** a structure that doesn't have to follow traditional or specific patterns.
- Closed form:** poems written in specific patterns.



UK Physical Characteristics

Most mountains are located in the **north and west**, e.g. Wales & Scotland. These areas have **few roads and settlements** but beautiful scenery. – Sparsely populated.

South and east of the UK is **flat** with a few hilly areas.

These areas are suited for **settlements, roads and railways** – Densely populated.

Rivers flow from mountainous areas down to the sea.



What is the UK

England

Capital: London
Population = 54m

Wales

Capital: Cardiff
Population = 3.2m

Scotland

Capital: Edinburgh
Population: 5m

Northern Ireland

Capital: Belfast.
Population = 1.9m



The UK is made up of **4 nations**, each nation uses the same currency, shares the same Prime Minister and follow the same laws. However each nation does have its own sports teams and can decide more local rules and guidelines.

The British Isles is all the land in the map above. This means that The Republic of Ireland is part of the British Isles but not part of the UK.

Population in the UK

The UK population is 65 million and still rising. It is predicted to reach 70 million by 2030.

UK Population Distribution

Low

Much of Northern Scotland is sparse due to a **mountainous** landscape and **difficult climate**.

High

Rest of the UK because of the **gentle hills, moderate climate** and **good transport routes**.

Very High

Population is **concentrated** around the South East of England, in cities such as London, due to attractions of **employment, retail** and **attractions**



UK Rainfall Patterns

- Highest rainfall is in the north and west** where average rainfall is **2500mm**.
- Lowest rainfall** is in the **south and east** with average rainfall of **500 – 625mm**.



UK Relief Rainfall

Most UK rainfall is caused by **prevailing wind** blowing from the southwest.

The other side of the upland area has **little moisture**, this is called the **rain shadow**.



Year 7 Topic 1:

What on Earth is the UK?



Our links to the Wider World

Trade:

We sell and buy goods from all over the World, earning us **£Billions**

Tourism:

Each year, **40 million** tourists visit us, spending **£Billions**. **70 million** UK tourists from the UK visit other countries.

Transport:

We fly abroad from **25** British airports, the Channel Tunnel links us to France.

Membership:

The UK belongs to many clubs of countries including NATO for military defence, the UN for World Peace and The Commonwealth.

Factors affecting population density

Moderate climate.	Remote and poor communications.	Opportunities for work
A presence of raw materials.	Steep and mountainous.	Fertile and suitable for farming.
Poor quality of soil.	Plentiful supplies of water.	Flat land for farming.

Latitude and Longitude

The longitude and latitude of Corsham is 51N 2W

Lines of Latitude

Tell us how far north or south we are from the equator. These are important as they help us understand climate.

Lines of Longitude

Tell us how far East or West places are from the UK. London is longitude 0, and the line is called "The Prime Meridian"

Communication:

We are linked to the world via the internet which travels through cables on the ocean floor

Culture:

British music, media and books make a big impact around the world. American TV makes a big impact on the UK population.

Communication:

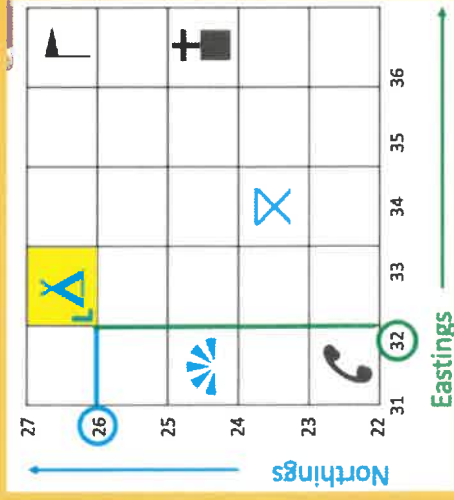
We are linked to the world via the internet which travels through cables on the ocean floor

Culture:

British music, media and books make a big impact around the world. American TV makes a big impact on the UK population.

4 figure Grid references

Along the edges of each map there are numbers. These numbers help you work out where a location is on a map. The key is to look for the bottom left hand corner.



The first two numbers give the eastings.

The second two numbers give the northings.

Remember.... Eastings then northings!
Along the corridor and up the stairs!

Atlas Skills

Physical maps show height, depth and other physical features like rivers.

Political maps show countries

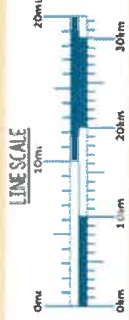


Scale and Distance

OS maps have a scale. Some maps have 1cm representing 250m, others have 1cm representing 500m. Make sure you always check the scale.

Line Scale

Using a line scale is as easy as using a ruler. Remember the line scale shows km and your ruler shows cm.



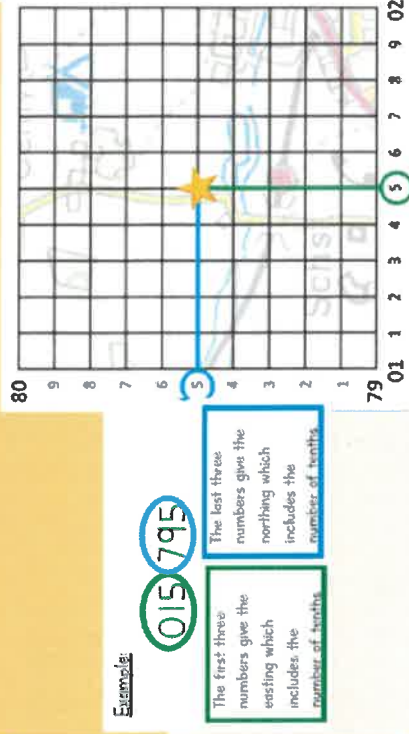
Word Scale

One centimeter on the map represents 3 kilometers on the ground. (1cm = 3 km)

Using the scale above, if we measure the distance on a map between 2 places with a ruler and then multiply the answer by 4, we get the real distance between the 2 places.

6 Figure Grid references

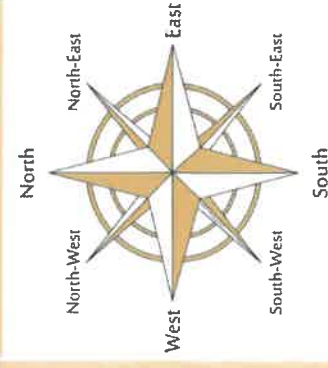
We can use 6 figure grid references to find an exact location within a grid. Each square is divided up into 10 smaller squares. Remember to still go along the corridor and up the stairs.



Remember within each square, 5 is always $\frac{1}{2}$ way along or up.

Compass points

Compass points are needed when describing the location of places.

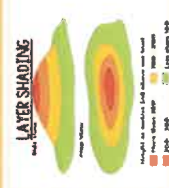


Yr7 Term 1: Map skills

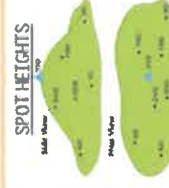
Height and Relief

Relief is the difference between the highest point on a map and the lowest point on a map.

Areas of different heights are shown in different colours – look at the key for the heights.



The exact height of a place is measured and shown in dots.



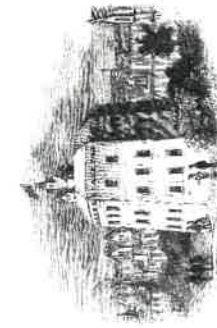
Contour lines are lines on a map that join up places of the same height. The closer the lines are together, the steeper the slope.



Enquiry: How did life change for ordinary people?

Outline: During the Medieval and early Modern periods, life for ordinary people was complex and depended on who you were. What unified many was the popular culture they enjoyed and the catastrophic events which affected their lives.

Date	Event	Description
1348	Black Death	This disease arrived in Weymouth from Europe. It was transported by fleas on rats which traveled across land and on ships from China. Nearly 1/2 of the population of Europe died.
1381	Peasants' Revolt	A huge rebellion against Richard II. Many were angry at a new tax and they marched on London.
1475	Printing press	William Caxton brought the Printing Press to England from Germany. From now on knowledge was less easy to control as it was quicker to produce books.
1599	Globe Theatre built	Shakespeare's main theatre was built in Southwark on the south bank of the river Thames.



Furthering learning

Want to find out more about life for ordinary people?



History – Year 7 Knowledge Organiser Topic 1

Key individuals



Julian of Norwich. Dedicated her life to God and wrote many books about God.



William Caxton. Brought the printing press over to England from Germany.



William Shakespeare. Wrote and Performed plays during Elizabeth I's reign



Samuel Pepys. Worked for the king and wrote a diary about his everyday life. He recorded events like the Great Fire of London.

Key vocabulary:

Banquets: parties for richer people which had lots of food in several courses to show off their wealth.

Black Death: a disease called the plague which arrived in 1348 in England onboard ships and killed about 1/3 – 1/2 of the population.

Bubonic Plague: a type of plague where the victim has huge boils or buboes full of pus.

Doom painting: pictures in churches which showed the joys of heaven and the horrors of hell as a lesson to the people.

Patriarchy: a system in society where men are in charge and can control how women behave.

Peasant: a person who worked in farming who was often living in poverty. About 90% of the population were peasants.

Pilgrimage: journey to a holy place to please God.

Pope: head of the Catholic Church

Popular culture: entertainment and shared activities that most people enjoyed taking part in.

Pneumonic Plague: a type of plague which affects the lungs. Victims often die within 3 days.

Relic: a holy item which has religious importance to those who follow a faith.

Tragedy: plays that have an unhappy ending and lessons for the audience to learn about how to behave.



Historical skill focus: similarity & difference

- How is the past similar to life now?
- How does the past differ to life now?

Year 7 – Algebraic thinking...

Sequences

What do I need to be able to do?

By the end of this unit you should be able to:

- Describe and continue both linear and non-linear sequences
- Explain term to term rules for linear sequence
- Find missing terms in a linear sequence

Keywords

Sequence: items or numbers put in a pre-decided order

Term: a single number or variable

Position: the place something is located

Rule: instructions that relate two variables

Linear: the difference between terms increases or decreases by the same value each time

Non-linear: the difference between terms increases or decreases in different amounts

Difference: the gap between two terms

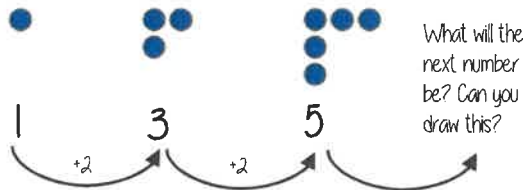
Arithmetic: a sequence where the difference between the terms is constant

Geometric: a sequence where each term is found by multiplying the previous one by a fixed non zero number

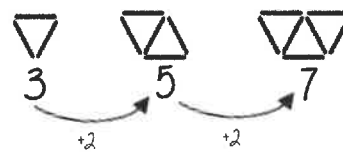


Describe and continue a sequence diagrammatically

Count the number of circles or lines in each image



Predict and check terms



CHECK – draw the next terms



Predictions:

Look at your pattern and consider how it will increase.

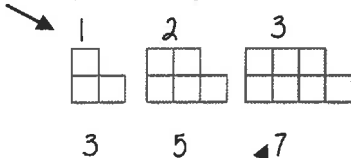
e.g. How many lines in pattern 6?

Prediction – 13

If it is increasing by 2 each time – in 3 more patterns there will be 6 more lines

Sequence in a table and graphically

Position: the place in the sequence

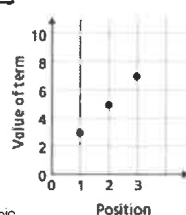


Term: the number or variable (the number of squares in each image)

In a table

Position	1	2	3
Term	3	5	7

Graphically



Because the terms increase by the same addition each time this is **linear** – as seen in the graph

Linear and Non Linear Sequences

Linear Sequences – increase by addition or subtraction and the same amount each time

Non-linear Sequences – do not increase by a constant amount – quadratic, geometric and Fibonacci

- Do not plot as straight lines when modelled graphically
- The differences between terms can be found by addition, subtraction, multiplication or division

Fibonacci Sequence – look out for this type of sequence

0 1 1 2 3 5 8 ...

Each term is the sum of the previous two terms

Continue Linear Sequences

7, 11, 15, 19...

How do I know this is a linear sequence?

It increases by adding 4 to each term

How many terms do I need to make this conclusion?

At least 4 terms – two terms only shows one difference not if this difference is constant (a common difference)

How do I continue the sequence?

You continue to repeat the same difference through the next positions in the sequence



Continue non-linear Sequences

1, 2, 4, 8, 16 ...

How do I know this is a non-linear sequence?

It increases by multiplying the previous term by 2 – this is a geometric sequence because the constant is multiply by 2

How many terms do I need to make this conclusion?

At least 4 terms – two terms only shows one difference not if this difference is constant (a common difference)

How do I continue the sequence?

You continue to repeat the same difference through the next positions in the sequence



Explain term-to-term rule

How you get from term to term

Try to explain this in full sentences not just with mathematical notation

Use key maths language – doubles, halves, multiply by two, add four to the previous term etc

To explain a whole sequence you need to include a term to begin at...

The next term is found by tripling the previous term
The sequence begins at 4

4, 12, 36, 108...
First term

Year 7 – Algebraic thinking...

Algebraic notation

What do I need to be able to do?

By the end of this unit you should be able to:

- Be able to use inverse operations and "operation families".
- Be able to substitute into single and two step function machines
- Find functions from expressions
- Form sequences from expressions
- Represent functions graphically

Keywords

Function: a relationship that instructs how to get from an input to an output

Input: the number/ symbol put into a function

Output: the number/ expression that comes out of a function

Operation: a mathematical process

Inverse: the operation that undoes what was done by the previous operation. (The opposite operation)

Commutative: the order of the operations do not matter.

Substitute: replace one variable with a number or new variable

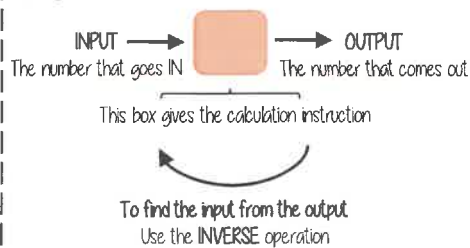
Expression: a maths sentence with a minimum of two numbers and at least one math operation (no equals sign)

Evaluate: work out

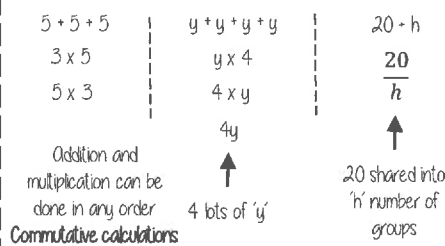
Linear: the difference between terms increases or decreases by the same value each time

Sequence: items or numbers put in a pre-decided order

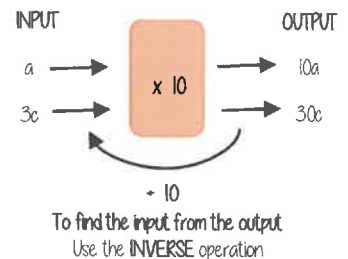
Single function machines



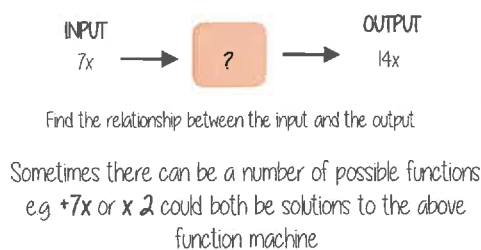
Using letters to represent numbers



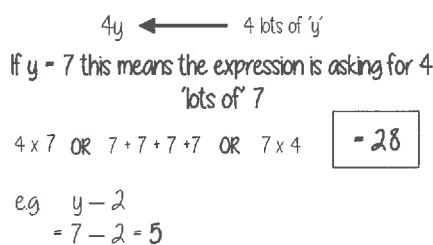
Single function machines (algebra)



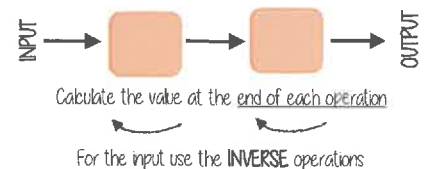
Find functions from expressions



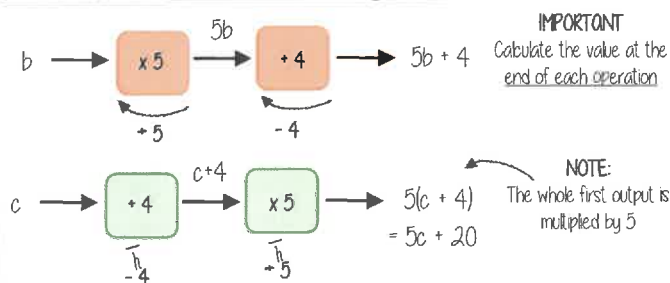
Substitution into expressions



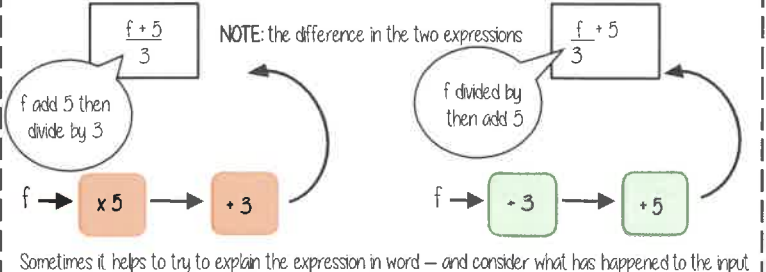
Two step function machines



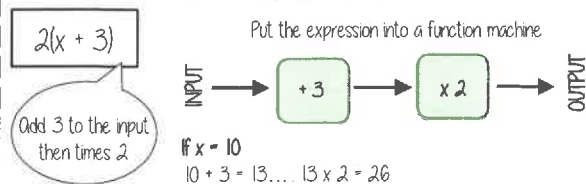
Two step function machines (algebra)



Find functions from expressions

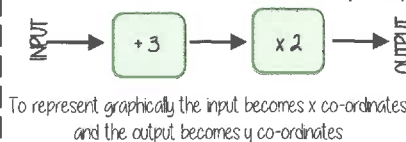


Substitution into an expression



Representing functions graphically

Take the function and generate a sequence $2(x + 3)$

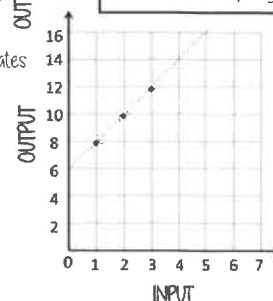


$$y = 2(x + 3)$$

INPUT (x)	1	2	3
OUTPUT (y)	8	10	12

This becomes a co-ordinate pair (2, 10) to plot on a graph

Not all graphs will be linear only those with an integer value for x
Powers and fractions generate differently shaped graphs



NOTE:
Because this is a linear graph you can predict other values

Forming a sequence

INPUT	1	2	3
OUTPUT	8	10	12

The substitution is the 'input' value
The OUTPUT becomes the sequence

Year 7 – Algebraic thinking...

Equality and Equivalence

What do I need to be able to do?

By the end of this unit you should be able to:

- Form and solve linear equations
- Understand like and unlike terms
- Simplify algebraic expressions

Keywords

Equality: two expressions that have the same value

Equation: a mathematical statement that two things are equal

Equals: represented by '=' symbol – means the same

Solution: the set or value that satisfies the equation

Solve: to find the solution.

Inverse: the operation that undoes what was done by the previous operation (The opposite operation)

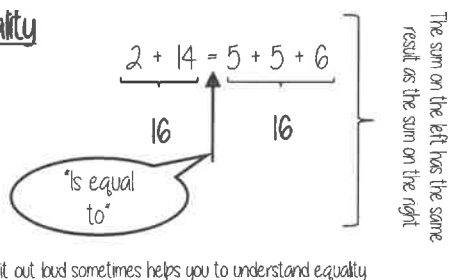
Term: a single number or variable

Like: variables that are the same are 'like'

Coefficient: a multiplicative factor in front of a variable e.g. $5x$ (5 is the coefficient, x is the variable)

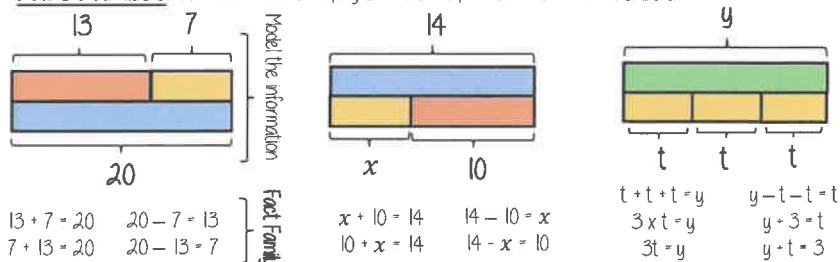
Expression: a maths sentence with a minimum of two numbers and at least one math operation (no equals sign)

Equality



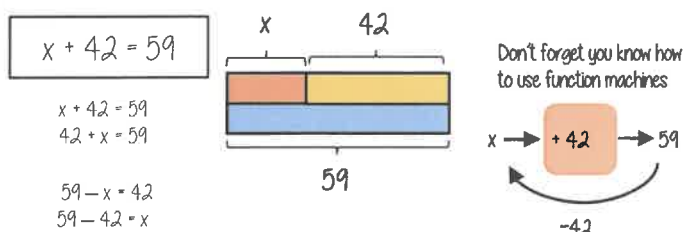
Fact Families

Use a bar model to display the relationships between terms and numbers.

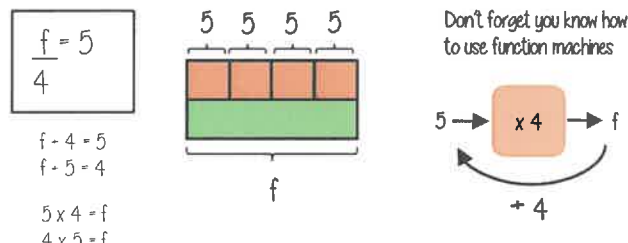


Solve one step equations (+/-)

There is more to this than just spotting the answer



Solve one step equations (x/÷)



Like and unlike terms

Like terms are those whose variables are the same

♥ and 3♥ are like terms
 the variable is the same

★ and 3♥ are unlike terms
 the variables are NOT the same

Examples and non-examples

Like terms

$y, 7y$
 $2x^2, x^2$
 $ab, 10ba$
 $5, -2$

Un-like terms

$y, 7x$
 $2x^2, 2c^2$
 $ab, 10a$
 $5, -2t$

Note here ab and ba are commutative operations, so are still like terms

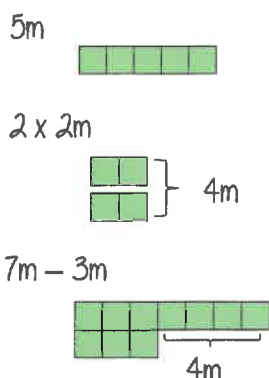
Equivalence

Check equivalence by substitution
 e.g. $m = 10$

$5m$	$2 \times 2m$	$7m - 3m$
5×10	$2 \times (2 \times 10)$	$(7 \times 10) - (3 \times 10)$
$= 50$	$= 2 \times 20$	$= 70 - 30$
	$= 40$	$= 40$

Equivalent expressions

Repeat this with various values for m to check

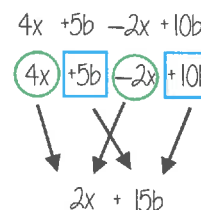


Collecting like terms $\equiv$ symbol

The $\equiv$ symbol means equivalent to
 It is used to identify equivalent expressions

Collecting like terms

Only like terms can be combined



Common misconceptions

$$2x + 3x^2 + 4x \equiv 6x + 3x^2$$

Although they both have the x variable x^2 and x terms are unlike terms so can not be collected

Bonjour! Salut! Monsieur/Madame Hi/Bye! Sir/Mr... /Madam/Mrs...	Comment tu t'appelles? What are you called? Et toi? And you?	Je m'appelle..... I am called ...
	Ça s'écrit comment? How's that spelt?	Ça s'écrit That's spelt... A – ah H- ash O-oh V-vay B-bay I -ee P-pay W-doo-blavay C-say J -jee Q-koo X-iks D-day K -ka R-air Y-ee-grec E-ugh L-el S-ess Z-zed F-eff M-em T-tay G-zjay N-en U-ouu
	Ça va? How are you?	Oui, ça va bien merci Yes, I'm well thank you Oui ça va très bien merci! Yes, I'm well thank you Pas mal, merci Not bad, thanks Non, ça ne va pas aujourd'hui No, I'm not good today
Au revoir! À plus! Goodbye See you later		
Les maths Maths + plus - moins x multiplié par ÷ divisé par = égal/ça fait..	Quel âge as-tu? How old are you?	J'ai... ans I'm (have)... years old 1-un 8-huit 15-quinze 2-deux 9-neuf 16-seize 3-trois 10-dix 17-dix-sept 4-quatre 11-onze 18-dix-huit 5-cinq 12-douze 19-dix-neuf 6-six 13-treize 20-vingt 7-sept 14-quatorze 21-vingt et un
Joyeux anniversaire! Happy Birthday!	C'est quand ton anniversaire? When is your birthday? Quelle est la date aujourd'hui? What's the date today?	Mon anniversaire, c'est le ... My birthday is on the... premier – first trente – 30 vingt-deux – 22 trente et un-31 vingt-trois -23 Aujourd'hui, c'est Today it's the lundi/mardi/mercredi/jeudi/ Mon/Tues /Wed /Thurs vendredi/samedi/dimanche Friday /Sat / Sunday janvier - January février - February mars - March avril - April mai - May juin - June juillet- July août - August septembre-Sept octobre - Oct novembre -Nov décembre - Dec

	Qu'est-ce qu'il y a dans ton sac? What is in your bag?	Dans mon sac il y a / il n'y a pas de.. *(no un/une/des) In my bag there is / there is no... un crayon – a pencil une trousse – a pencil case un stylo – a pen une règle – a ruler un agenda – a planner une gomme – a rubber un cahier – a book une calculatrice - un livre – a text book a calculator un portable—a mobile phone deux stylos – 2 pens /trois gommess – 3 rubbers des livres – some books
Ouvrez/Fermez la porte/la fenêtre/les cahiers Open/Close the door/the window/the books Écoutez le prof/ la conversation Listen to the teacher/the conversation Regardez le tableau (interactif) Look at the (interactive) board Asseyez-vous! – Sit down! Levez-vous! – Stand up	Qu'est-ce qu'il y a dans ta salle de classe? What is there in your classroom? Voilà... Here's...	Dans la salle de classe il y a ... In my classroom there is/are... le bureau – the desk le tableau (interactif)- the (interactive) board le professeur- the teacher l'ordinateur- the computer les élèves- the pupils la chaise– the chair la table – the table la porte – the door la fenêtre – the window Mon Prof s'appelle My teacher is called...
et - and mais - but	Tu aimes? Do you like.....? Tu préfères...? Do you prefer...?	J'aime / J'adore / Je n'aime pas / Je déteste/ I like / I love / I don't like / I hate Je préfère I prefer le foot le rugby le tennis le vélo le skate le judo la danse la musique la gymnastique les jeux vidéo c'est super! it's great! c'est nul! it's rubbish!

	C'est de quelle couleur? What colour is it? Tu préfères quel scooter? Which scooter do you prefer? Tu préfères quelle voiture? Which car do you prefer?	C'est... It's... Je préfère le scooter... Je préfère la voiture... I prefer the scooter I prefer the ... car <table><tr><td>bleu</td><td>blue</td><td>bleue</td></tr><tr><td>vert</td><td>green</td><td>verte</td></tr><tr><td>gris</td><td>grey</td><td>grise</td></tr><tr><td>noir</td><td>black</td><td>noire</td></tr><tr><td>jaune</td><td>yellow</td><td>jaune</td></tr><tr><td>orange</td><td>orange</td><td>orange</td></tr><tr><td>rouge</td><td>red</td><td>rouge</td></tr><tr><td>rose</td><td>pink</td><td>rose</td></tr><tr><td>blanc</td><td>white</td><td>blanche</td></tr><tr><td>violet</td><td>purple</td><td>violette</td></tr><tr><td>marron</td><td>brown</td><td>marron</td></tr></table>	bleu	blue	bleue	vert	green	verte	gris	grey	grise	noir	black	noire	jaune	yellow	jaune	orange	orange	orange	rouge	red	rouge	rose	pink	rose	blanc	white	blanche	violet	purple	violette	marron	brown	marron
bleu	blue	bleue																																	
vert	green	verte																																	
gris	grey	grise																																	
noir	black	noire																																	
jaune	yellow	jaune																																	
orange	orange	orange																																	
rouge	red	rouge																																	
rose	pink	rose																																	
blanc	white	blanche																																	
violet	purple	violette																																	
marron	brown	marron																																	
nm - un – masculine noun a nf - une – feminine noun a nmpl -des -masculine plural some nfpl – des- feminine plural some	Tu as un animal? Do you have a pet?	J'ai ... un chat deux chats a cat 2 cats un chien trois chiens a dog 3 dogs un cheval deux chevaux a horse 2 horses un serpent quatre serpents a snake 4 snakes un lapin trois lapins a rabbit 3 rabbits un hamster deux hamsters a hamster 2 hamsters un cochon d'Inde quatre cochons d'Inde a guinea pig 4 guinea pigs un oiseau trois oiseaux a bird 3 birds un poisson rouge deux poissons rouges a goldfish 2 goldfish une souris quatre souris a mouse 4 mice une tortue trois tortues a tortoise 3 tortoises Je n'ai pas d'animal I don't have a pet																																	

voici ma famille Here's my family Je m'appelle...	Comment s'appelle-t-il/elle? What is he/she called? Quel âge a-t-il/elle? What age is he/she?	mon père my father mon frère my brother mon cousin my cousin mon oncle my uncle mon grand-père my grandfather ma mère ma soeur my sister ma cousine my cousin ma tante my aunt ma grand-mère my grandmother mes parents my parents mes grands-parents my grandparents mes frères my brothers	s'appelle..... is called a.... ans isyears old
	Comments'appellent-t-ils/elles? What are they called? Quel âge ont-ils/elles? What age are they?	s'appellent.... are called.... ontans are..... years old	
	Où habites-tu? Where do you live?	J'habite... I live.... dans une grande /petite maison in a big/small house dans un grand/grand appartement in a big/small apartment dans un château in a castle dans une ferme on a farm à la campagne in the country à la montagne in the mountains dans un petit/grand village in a smali/big village dans une petite/grande ville in a small / big town au bord de la mer by the sea dans la forêt in the forest	

Music
Year 7 term one knowledge organiser

The musical elements.		
	Element name	Definition
1	Beat	The beat is the heartbeat of a piece of music and is what a musician follows to play in time.
2	Rhythm	Rhythm then divides these beats into smaller sections
3	Melody	The combination of rhythm and pitch using single notes. Often called the main tune and is the most memorable part
4	Timbre	The unique sound quality of each instrument.
5	Tempo	The musical speed of the beat of the music.
6	Pitch	Pitch is how we measure how low or high a musical sound is.
7	Texture	Texture describes the thickness of musical instruments playing at the same time.
8	Harmony	How many notes are combined to create emotion.
9	Dynamics	How loud or quiet music is.

Sharps

A sharp is the black note to the right of a white note.

A sharp is shown with a (#)

Flats

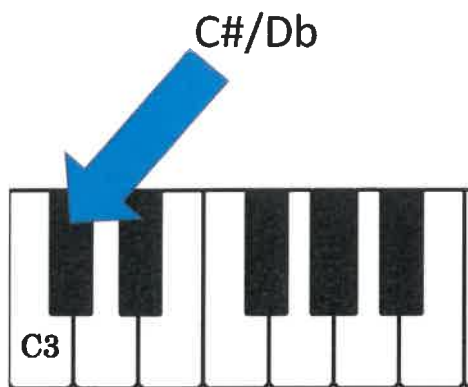
A flat is the black note to the left of the white note.

A flat is shown with a (b)

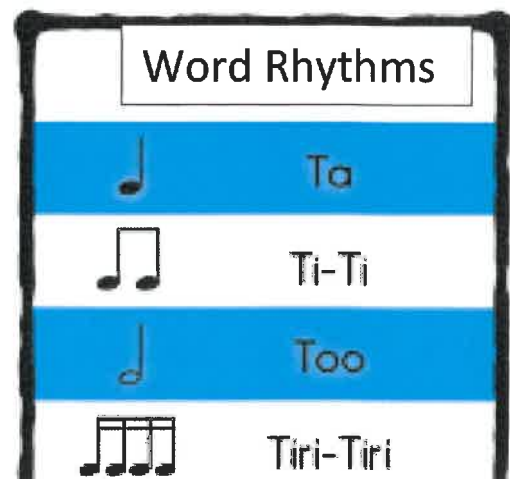
Each black note has two names.

This one here is both C# and Db.

We write:



C is to the left of the two black keys.



Key Terms

Intelligent Question is a question that will help us to understand what is going on
Deeper questions search deeper than others , going beyond what is obvious. They usually start with could or should.

Philosophy Love of wisdom

Plato – an ancient Greek philosopher

Platonic viewpoint (what Plato said) There's more to life than what we can see.

Materialism – if you can't prove it's there, it doesn't exist.

Introduction to Philosophy



Plato thought there was a lot more to life than what humans could actually see. He said that we are like those men sitting in the cave: we think we understand the real world, but because we are trapped in our bodies we can see only the shadows on the wall (what our brain tells us is there). Some religious people have said, this is why human beings can't see God, because as humans we are physically unable to.

Is one **type of knowledge** more **important or reliable** than any other?

Empirical knowledge use your sense to discover information

Authoritarian Knowledge when you are told information

Reason when you use logic to figure something out

Belief what you choose to think about something

Different questions look for different types of knowledge. We need to get used to asking different questions and to recognise the **different types of knowledge** they are looking for:

Try asking questions about the year 2100 and consider these topics to focus your questions:

School Food Transport Movies Racism Pandemics
 Global warming Politics Technology Equality

E.g. When might men and women be truly equal?

	Is? Does? Present	Did? Past	Can? Possibility	Could?/Should? Probability	Will? Prediction	Might? Imagination
What (Event)						
Where (Place)						
When (Time)						
Who (Person)						
Why (Reason)						
How? (Meaning)						

What do you mean by X?

How do you know?

P1 Chapter 1: Forces

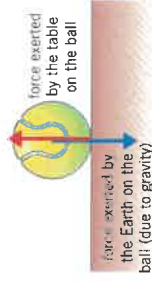
Knowledge organiser

Activate
Question • Progress • Succeed

What is a force?

- A **force** can be a **push** or a **pull**
- A force is measured in **Newtons (N)**
- We measure forces with a **newton meter**
- Forces explain why objects will move, change direction and change speed

- Forces always act in pairs, we call these **interaction pairs** e.g. the tennis ball exerts a downward force of **weight** onto the table, the table exerts an equal and opposite reaction force onto the ball



Balanced and unbalanced forces

- When forces acting on an object are the same size, but acting in different directions, we say that they are **balanced**
- When forces are balanced, the object is either not moving (stationary) or moving at a constant **speed**
- When the two forces acting on an object are not the same size, we say that the forces are **unbalanced**
- When forces are **unbalanced**, the object will either be in **acceleration** or **deceleration**
- The **resultant force** is the difference between the two unbalanced forces



Types of forces

- Contact forces** act when two objects are physically touching
- Air resistance** and **friction** are examples of contact forces
- Non-contact forces** act when two objects are physically separated (not touching)
- Examples of non-contact forces include **gravitational force** and magnetic forces
- We call the region where an object experiences a non-contact force a **field**, examples of these include gravitational fields and magnetic fields

Gravity

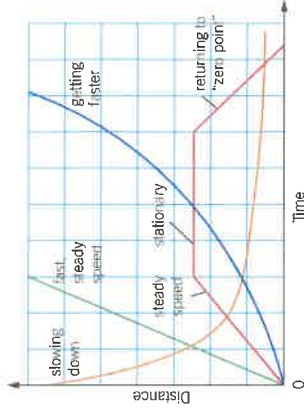
- Gravity** is a non-contact force that acts between two objects
- Gravitational force** pulls you back to Earth when you jump
- The size of the gravitational force depends on the mass of the two objects and how far apart they are
- Weight** is the downward force caused by gravity acting upon the mass of an object, it is measured in Newtons (N)
- Mass** is the amount of matter within an object, whereas weight is the downward force of the object, we measure mass in **kilograms**
- We calculate weight with the equation:
$$\text{weight (N)} = \text{mass (kg)} \times \text{gravitational field strength (N/kg)}$$
- The value of the gravitational field strength can vary, so although a person's mass would be the same on different planets, their weight would not be

Speed

- Speed** is a measure of how quickly or slowly that something is moving
- We measure speed in meters per second (m/s), this means that distance must be in meters and time must be in seconds
- We calculate speed with the following formula:
$$\text{speed (m/s)} = \frac{\text{distance travelled (m)}}{\text{time taken (s)}}$$
- Relative motion** compares how quickly one object is moving compared to another
- If both objects are moving at the same speed, they are not changing position in comparison to one another, meaning that their relative speed is zero

Distance-time graphs

- Distance-time graphs** tell the story of a journey, they show how much distance has been covered in a certain period of time



- To find the average speed, the total distance must be divided by the total time

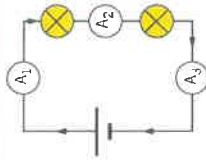
Key terms

Make sure you can write definitions for these key terms.

acceleration	air resistance	balanced	contact force	deceleration	distance-time graph	field	force	friction	gravity	gravitational force	interaction pair
kilograms	mass	Newton	newton	non-contact	pull	push	relative motion	resultant force	speed	unbalanced	weight

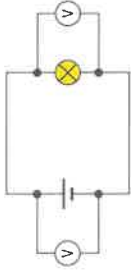
Current

- Current** is the amount of **charge** flowing per second
- The charges that flow in a circuit are **electrons**, they are negatively charged
- Electrons** leave the negative end of the **cell** and travel around the circuit to the positive end of the cell
- Current has the unit of Amps (A) and is measured with an **ammeter** (which is placed in series or in the main circuit)



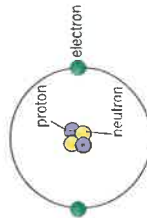
Potential difference

- Potential difference** is the amount of energy transferred by the cell or **battery** to the charges
- The value of potential difference tells us about the force applied to each charge and then the energy transferred by each charge to the component which it passes through
- Potential difference has the unit of volts (V) and is measured with a **voltmeter** (which is placed in parallel to the circuit)



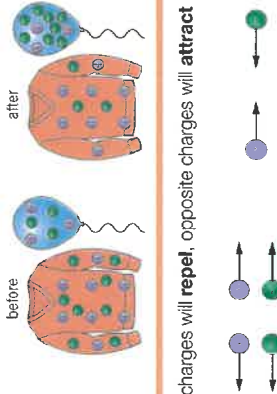
The atom

- The **atom** consists of a central nucleus with electrons orbiting around the outside in shells
- Electrons** have a negative charge
- Protons** are inside the nucleus and have a positive charge
- Neutrons** are inside the nucleus and have a neutral charge



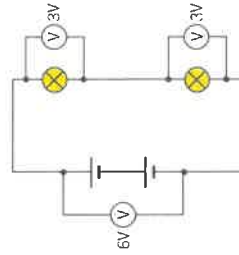
Static electricity

- Static electricity is caused by the rubbing together of two **insulators**
- This causes electrons to be transferred, leaving one object with a positive charge, and one object with a negative charge
- Like charges will **repel**, opposite charges will **attract**



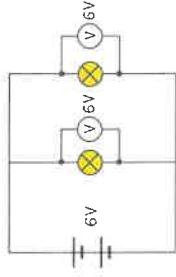
Series circuits

- Series** circuits only have one loop
- If one component breaks, the whole circuit stops working
- Current is the same everywhere in a series circuit
- The total potential difference from the battery is shared between the components in a series circuit
- Adding more bulbs decreases the brightness of the bulbs



Parallel circuits

- Parallel** circuits have more than one loop
- If one component breaks, the rest of the circuit will still work
- Current is shared between the different loops in the circuit
- The potential difference is the same everywhere in the circuit
- Adding more bulbs does not affect the brightness of the bulbs



Resistance

- Resistance** is a measure of how easy or how hard it is for charges to pass through a component in a circuit
- Resistance has the unit of ohms (Ω)
- Resistance is calculated by measuring potential difference and current and using the following equation:

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

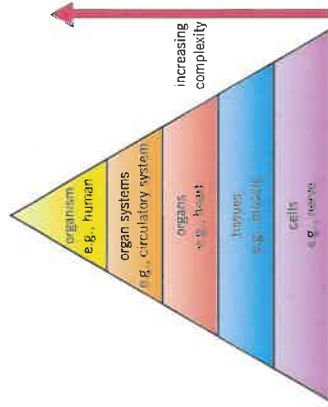
- Materials with a high resistance are said to be **insulators**
- Materials with a low resistance are said to be **conductors**

Key terms

Make sure you can write definitions for these key terms.

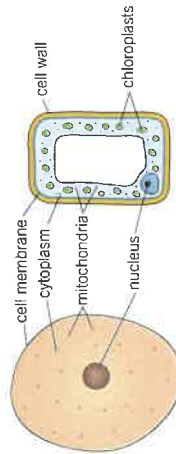
ammeter atom attract battery cell conductors current electrons electric charge insulator neutral neutrons parallel potential difference protons repel resistance series voltmeter

Levels of organisation



Plant and animal cells

- To be able to **observe** a cell we need to use a **microscope**, this magnifies the cell to a point to which we can see it
- Plant and animal cells have small structures inside known as **organelles**, each of these performs a certain role which allows the cell to survive

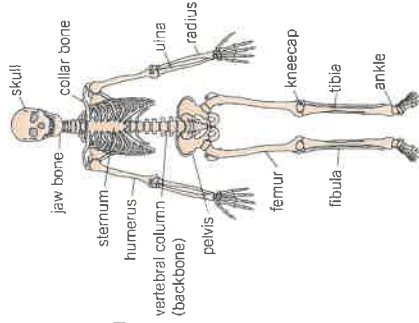


Specialised cells

- Specialised cells** are designed to carry out a particular function, because of this they have specific features and adaptations to allow them to carry this out
- Both plant and animal cells can be specialised, with these specialised cells working together to help the organism to survive

The skeleton

- The **skeleton** is made up of 206 **bones** which are a type of **tissue**
- Bones have a blood supply and are a living tissue
- The skeleton is part of the **muscular-skeletal system**
- The four main functions of the skeleton are:
 - To support the body – to keep you upright and hold **organs** in place
 - Protect organs – such as the skull protecting the brain
 - Movement – by working with muscles to allow you to move
 - Making blood cells – the **bone marrow** produces red and white blood cells



Muscles

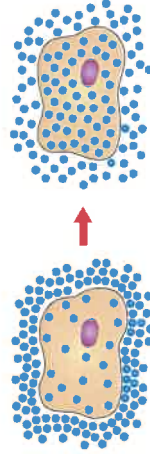
- Muscles** are a type of tissue which allows movement
- They pull on tendons which in turn pull on bones to allow movement
- Muscles like the triceps and biceps are known as **antagonistic muscle pairs**, they work together – as one contracts, the other will relax

Organs

- An organ is a group of tissues that have the same function
- They can work with other organs in an **organ system**, such as the respiratory system which uses organs like the heart and lungs to transfer oxygen around the body
- Vital organs are the organs that need to keep functioning for an **organism** to stay alive, e.g. the heart

Movement into and out of cells

- The process in which substances move into and out of cells is known as **diffusion**
- This occurs across the **cell membrane**
- During diffusion particles move from an area of high **concentration**, to an area of low concentration
- Oxygen and nutrients enter the cell by diffusion, carbon dioxide and waste products leave



Movement

- Joints** occur between bones and allow movement, there are three main types of joints
- Hinge**
 - Ball and socket
 - Fixed
 - Do not allow movement, e.g. skull
- For back and forward movement, e.g. knees**
- Joints have three main types of tissue:

Ligaments

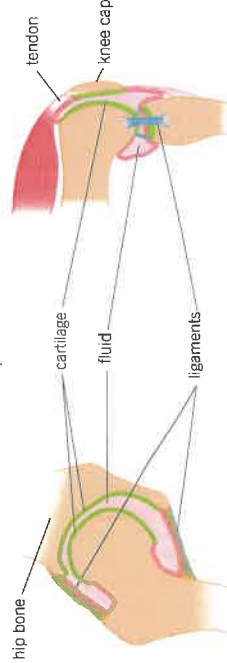
- Connect bone to bone
- Coats the end of bones as a protection

Cartilage

- Connects bone to muscle
- Coats the end of bones as a protection

Tendons

- Connects bone to muscle
- Coats the end of bones as a protection



Key terms

Make sure you can write definitions for these key terms.

antagonistic muscle pair bone bone marrow nucleus organ cartilage cell concentration diffusion joints ligaments microscope muscular skeletal system tendons tissue