

Year 7

Autumn Term

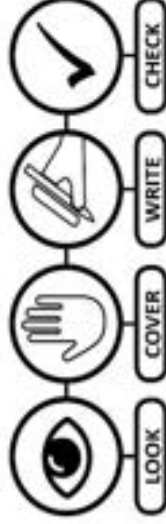


Knowledge
Champion Booklet



Knowledge Organisers

- You should always have this booklet with you **every day**.
- The knowledge organisers contain the key facts, dates, events, characters, concepts and vocabulary you must memorise to succeed this year and in your future studies.
- Use your green exercise book for **self-quizzing**. It may be set for extended learning or during a form period.
- Use the following method for self-quizzing:



Read a section of your knowledge organiser and try to memorise it	Repeat it to yourself from memory until you think you have got it right.
Cover it up	Put your Knowledge Organiser sheet away so that you cannot copy it. This will mean that your brain will have to work harder, meaning it is more likely to stay in your long-term memory.
Write it out	Put the date and title in your self-quizzing book. Write out what you can remember. Even if you are finding it difficult, do not look back at your KO, but think hard and challenge yourself to find that answer. Always take pride in your work, so write neatly, taking good care of spelling, capital letters and punctuation.
Check it	Refer to your KO sheet and check your work against it.
Correct it	Make corrections using a green pen and continue this process until you can recall the information.

<h2 style="text-align: center;">How should you use your knowledge organisers? – 20-minute plan</h2>	
<p>20 minutes Quizzing</p>	<p>Select the relevant parts of the knowledge organiser to quiz from – this could be key terms from English, or key formulae from Maths. It should only be small chunks of information. Spend 3 minutes reading and re-reading the section of the knowledge organiser.</p> <p>Spend 2 minutes trying to recall the information in your head or say it out loud. You could ask yourself ‘how’ and ‘why’ questions. This is called ‘Elaboration’.</p> <p>Put your KO away and write out the topic and answers relevant to the information – use your self-quizzing book for this. Spend about 10 minutes on your Qs and & As.</p> <p>In your self-quizzing book, spend the last 5 minutes checking your answers by looking again at the knowledge organiser and writing any corrections in a green pen. Remember to correct any spelling errors by writing them out again.</p>
<p>Flash Cards</p>	<p>Another way to revise from your knowledge organiser is to put the information onto flashcards. Put key terms / key questions on one side of the card, then the definition / answer on the other side. Either test yourself or ask somebody else to test you.</p>
<p>Online learning</p>	<p>Quizlet, Memrise, and Brainscape are examples of free learning platforms which will help you learn in a fun way. You could use the information on your knowledge organisers to create your own quizzes. You would then be able to use these regularly.</p>

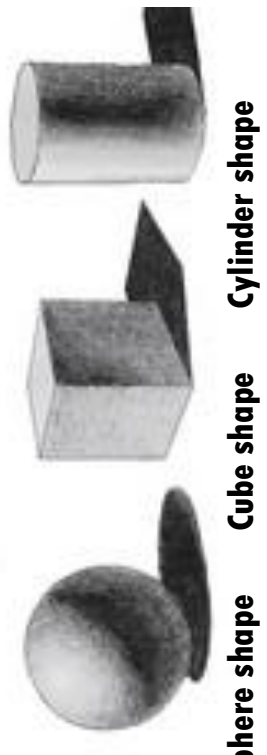




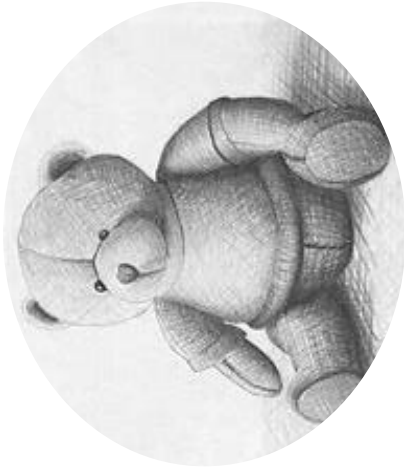
Art

This term you will learn

- To create light, medium and dark pencil tones with control
- To apply tone to 2D shape to make it appear a 3D shape
- To understand how light and shade is applied to create a form (3D Shape)



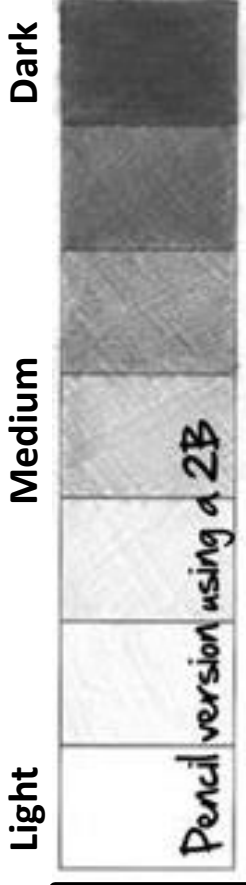
Sphere shape Cube shape Cylinder shape



Assessment 1 – Apply tone to a teddy bear making it appear 3D by using the knowledge and skills learnt.

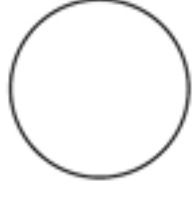


Tone is the lightness or darkness of something.

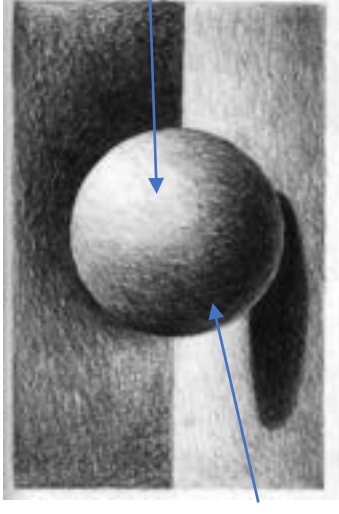


Shape is an area enclosed by a line

Circle = 2D shape



Sphere = 3D shape / form



Form is a three dimensional shape such as a sphere.

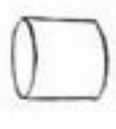
How to draw a Cylinder



Step 1: draw a pawsake



Step 2: add table legs



Step 3: connect the bottom corners with a smile

How to draw a Cube



Step 1: draw a square



Step 2: add table legs



Step 3: connect the back corners

2D = Two Dimensional
3D = Three Dimensional

How to draw and shade a cylinder	https://www.youtube.com/watch?v=b4NI0LwomrU
How to draw and shade a cube	https://www.youtube.com/watch?v=_yXPQm92oCE
How to draw and shade a sphere	https://www.youtube.com/watch?v=TeVjwQd_kkE



Computer Science

<u>Keyword</u>	<u>Definition</u>
Copyright	Copyright gives a person ownership over the things they create.
Email	Electronic messages sent from one computer user to one or more recipients via a network.
Recipient	A person who receives something.
Network	A group or system of interconnected people or things.
Hackers	A person who uses computers to gain unauthorised access to data.
Password	A string of characters that allows access to a computer system or service.
Cyberbullying	Cyberbullying is bullying that takes place over digital devices like mobile phones, computers, and tablets.
Target Audience	A particular group at which a product such as a film or advertisement is aimed.

What is cyberbullying?

Cyberbullying is **bullying** that takes place over **digital devices like mobile phones, computers, and tablets**. Cyberbullying can occur through **SMS, Text, and apps, or online in social media, forums, or gaming** where people can view, participate in, or share content. Cyberbullying includes **sending, posting, or sharing negative, harmful, false, or mean content about someone else**



Advice for writing comments online

- Keep it friendly.
- Be specific.
- Try to stick to the facts.
- Remember that your tone can sound different to the reader.
- Avoid sarcasm as it is difficult to interpret online.
- Try to use the 'sandwich technique'. This means to say something positive, then something critical, and end with something positive.
- Ask a question to start a discussion.

Social Media Profiles

1. Check your privacy settings (friends only)
2. Delete any images that might reveal your location
3. Remove any geotagging of images
4. Keep your date of birth private
5. Avoid public profile pictures that might reveal your identity
6. **Use a strong password and change it often**
7. Check your friend list — could any of those friends be fake profiles?

A **strong password** is one that is difficult for someone to guess or crack.



A **weak password** is one that is easy for someone to guess or crack.



Choosing a password

DO

- Do use at least 8 characters – even more if possible
- Do include a good mixture of numbers, symbols and special characters (e.g. ~%!*), lower case and UPPER CASE letters
- Do try and use a different password for each account.



DON'T

- Don't use names these are easy to guess;
- Don't write down your password
- Don't share your password with anyone else.



How to send an appropriate email?

The screenshot shows an email composition window with the following fields and annotations:







- To:** An arrow points to this field with the text: "Add the email address of recipient".
- Cc:** This field is empty.
- Add a subject:** An arrow points to this field with the text: "Add a meaningful subject line. The subject line of an email is the single line of text people see when they receive your email."
- Body:** The text "Dear Mr Ward," is entered. An arrow points to this text with the text: "Always open your email with a greeting, such as 'Dear Mr Ward'".
- Signature:** The text "Thank you Amy" is entered. An arrow points to this text with the text: "Write you email message, in full word and sentences."

The bottom of the window shows a rich text toolbar with options for font color, bold, italic, underline, link, unlink, insert image, insert video, insert emoji, and a "Send" button. A "Draft saved at 12:05" notification is visible in the top right corner.






The last step is to include an appropriate closing with your name. **"Best regards"**, **"Sincerely"**, and **"Thank you"** are all professional.

1b Using Media- Knowledge Organiser

Keyword	Definition
Formatting	Changing the appearance of a document
Credibility	Something is credible if it true and trustworthy
Citation	Is the way you tell your readers that certain material in your work came from another source. It also gives your readers the information necessary to find that source again, including information about the author. the title of the work.
Plagiarism	The process or practice of using another person's ideas or work and pretending that it is your own
Paraphrase	To repeat something written or spoken using different words.
Copyright	Copyright means that any creative piece of work belongs to the people who made it, and so it cannot be copied or used without permission.

Tool icon	Tool name	Brief explanation
	Bold	Makes your text bold.
	Font Style	Change the font style of your text.
	Font Size	Change the size of your text.
	Centre Alignment	Alignment gives document a formal appearance and is often used for heading.
	Font Colour	Change the colour of your text
	Bullet Points	Create a bulleted list

Why do we format documents?
<ul style="list-style-type: none"> To make the text easy to read To make it easy for the audience to extract the information that they need To highlight the important information Sometimes, to attract the audience to read the information

Creative Commons Name	Symbol	Meaning
Creative Commons		Creative Commons
Compulsory		If you use it, you must always credit the author.
Non-commercial		You are not allowed to sell this or make money from it.
Non-derivatives		You can use it but you cannot change it.
Share alike		You must keep the same creative commons license on it.



Dance

The 5 Basic Dance Actions



Jump



Turn



Travel

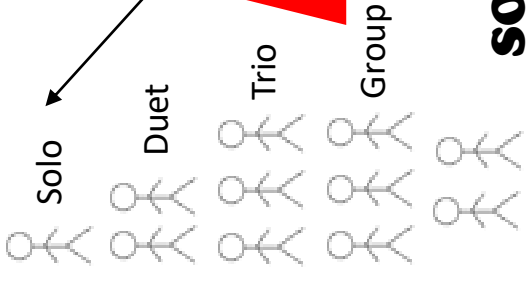


Stillness/balance



Gesture

RELATIONSHIPS



The Components of Dance

Action – what you do

Space – where you do it

Dynamics – how you do it

Relationship – who you dance with

DYNAMICS

SOFT SUDDEN JERKY SHARP

Space = where in the dance studio you are dancing and the different pathways you create.



CHOREOGRAPHIC DEVICES: Something that enhances your dance and allows you to create more movement material.

REPETITION – REPEAT AN ACTION(S)

DIRECTION – PERFORM TO A DIFFERENT PART OF THE DANCE STUDIO

RETROGRADE – PERFORM YOUR SEQUENCE BACKWARDS

CANON – PERFORMING ONE AFTER ANOTHER, LIKE DOMINOES WHEN THEY FALL

EMBELLISHMENT - ADD DETAIL TO AN EXISTING MOVEMENT, SUCH AS A HAND GESTURE OR ARM MOVEMENT

Dance styles:

- Jazz
- Contemporary
- Street Dance
- Ballet
- Break Dance
- Tap Dance
- Flamenco
- Salsa
- Charleston
- Lindy Hop



1. Cardiovascular/pulse raising. E.g. Star jumps.

2. Strengthening. E.g. Press ups.

3. Stretching. E.g. Side stretch.



Does everyone in the group know all the movements?

How can you use this feedback to make improvements?

How can you make your dance look even better?

feedback

Unit 1: Understanding Dance

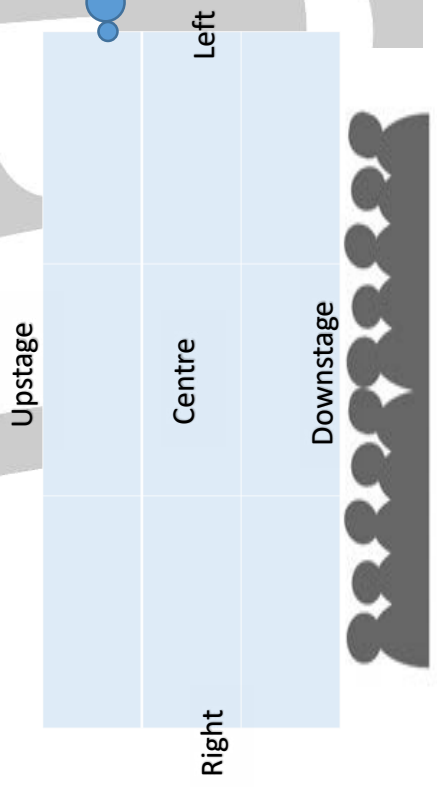


Drama

Unit 1 – Introduction to Drama



Skill	Definition
Mime	Using physical skills (body) to explain something without using any words or sound.
Freeze Frame	It is a moment where you freeze in a position to tell a moment within a story using physical skills.
Thoughts out loud	What the character would be thinking or feeling in that moment.
Devising	Plan or create using careful thought.
Evaluate	To assess how successful something is/was or not.



Physical Skills

Skill	Definition
Facial expressions	Showing emotion through the facial features.
Gestures	An expressive movement of the body.
Posture	The way in which you hold your upper body.
Body language	Communication through movement or positions of the body.
Gait	The way you travel in character.

Vocal Skills

Skill	Definition
Tone	This suggests your mood and your intention towards the listener, e.g. happy, sad.
Volume	How loud or quiet you speak
Pitch	Speaking in a high, low or natural voice.
Pace	The speed in which you speak.
Emphasis	This is the pressure on individual words that makes them stand out.
Pause	To stop for a moment to create dramatic effect.

What Went Well?







FEEDBACK

Now Try This!!!



English

Rhetoric Structure:

Exordium		This is your introduction. You need to introduce yourself, hook your audience, and establish your ethos as a speaker.
Narratio		This where you set out your argument and the facts of the case. Here you should use logos, statistics and syllogisms.
Divisio		This is where you consider the counter-argument to your point. Explain what your opponents would say to show you are considering both sides of the debate.
Refutation		This is where you refute your opponent's counter-argument to show the strengths of your own. Explain why their thinking is flawed and why your argument is better.
Proof		This is where you give further examples to support your arguments. This will include an anecdote to create pathos within your audience. You can also use further logos techniques here too.
Peroration		This is your conclusion. Here you play on the audience's emotions and make the audience feel what you want them to feel. This part should have lots of emotive language in it.

How to answer retrieval questions:

- Search for the information in the text. This information may be explicit or implicit.
- Select only the relevant information. Do not copy out huge parts of the text.
- List or bullet point your answer.

How to answer inference questions:

- Use the structure: **Point + Quote + Inference.**
Ensure your inference gives an insight into the quote. Do not just repeat the quote.
- Ensure you include a range of points. You will recognise this question as it will ask you what your impressions are **E.g. What impression does the writer create of Medusa?**
- Make sure your evidence supports your point, and ensure your inference matches your point.

How to answer evaluate questions:

- Use the structure: **I think/I feel + Point + Quote + justification.**
Ensure your justification is clearly explained in your own words.
- Ensure you write a range of points. You will recognise an evaluate question when it asks you for your thoughts and feelings on a character **E.g. What are your thoughts and feelings on Prometheus?**
- Make sure your evidence matches your point, and ensure your justification matches your point.

Vocabulary	Definition
Myth	A traditional story, one concerning the early history of a people, typically involving supernatural beings and events.
Alluring	Powerfully and mysteriously attractive or fascinating.
Aetiological	A tale or story which teaches a lesson or has a moral.
Omnipotent	Having unlimited power and great influence.
Archetypal	Very typical of a certain kind of person or thing
Retrieval	The process of searching for information in a text that is either explicit or implicit.
Inference	An idea or conclusion that is drawn from evidence or reasoning.
Evaluation	To judge the value or worth of something or someone.
Rhetoric	The art of speaking or writing effectively to influence people.
Ethos	The way in which a speaker uses argument and persuasion to establish their credibility, knowledge and good moral character
Logos	The way in which a speaker uses facts and statistics to appeal to the audience's sense of logic and reasoning.
Pathos	The way in which a speaker appeals to an audience's emotions to make them feel the way the author wants them to feel.
Antithesis	Is where opposing words or ideas are put together to show a contrast.
Dialysis	Using an alternative argument to strengthen your own: a 'don't do that, do this' approach

Punctuation and Grammar Rules to succeed in AO6

Subject: a subject is the thing doing the verb.

Verb: an action, emotion or state of being. It is the word that shows us what is being done in a sentence.

Main Clause: a clause has a subject and a verb working together.

E.g. The girl ate her cake.

Subordinate Clause: a clause which depends on the main clause to make sense. **E.g. Even though it rained every day, we had a good holiday.**

Sentence Types:

Simple: a sentence which contains a main clause made up of a verb and a subject. **E.g. The dog barked loudly.**

Compound: Two main clauses joined by a FANBOYS co-ordinating conjunction **E.g. I went to school, and I completed all of my homework.**

Complex: This is a sentence which consists of a main clause and a subordinate clause. I WAS A BWABE should help you remember some key subordinators.

E.g. Although I had never tried it before, I enjoyed my vegan burger.

Embedded Clause:

An embedded clause gives your reader more information about your subject. They come after the subject in your sentence and have commas at the start and end of the embedded clause.

E.g. The man, who was wearing a blue jacket, came up to me in the queue.

Prepositional Phrase:

This is when you use prepositions in part of your sentence to describe something's position or place. If you begin sentences with a prepositional phrase, you must have a comma.

E.g. Under my bed, there was a mountain of forgotten toys.

Other prepositions include:

in, between, outside, opposite, beside, next to, under, above, for, with

Co-ordinating conjunctions for compound sentences

For
And
Nor
But
Or
Yet
So

Paragraphs

TipTop

Ti - stands for time

P - stands for place

To - stands for topic,

P - stands for person

Subordinators for complex sentences

If

When

After

Since

Although

Because

While

As

Before

Even though

Apostrophes:

These can be used to either:

- show where letters have been missed out. These are called contractions.

E.g. Don't worry.

- show that someone owns something. This is called using apostrophes to show possession.

E.g. That is Sarah's dog.

Comma Rules:

Rule 1: use a comma to separate items in a list

E.g. I needed to buy apples, bananas, grapes and a pineapple.

Rule 2: use a comma around an embedded clause ('who' / 'which').

E.g. The dress, which had red roses on the hem, was completely ruined.

Rule 3: use a comma in a compound sentence before a FANBOYS co-ordinating conjunction.

E.g. I needed to eat healthily, but I really wanted a slice of cake.

Rule 4: use a comma after a subordinate clause when it is used before a main clause.

E.g. As I was ten minutes early, I decided to get a coffee.

Sentences for Year 7

2 Pair Rule:

When you have two pairs of adjectives at the start of your sentence.

E.g. Elated and overjoyed, excited and giddy, the children scrambled onto the ride.

3ed Rule:

This is when you list three adjectives which have an 'ed' suffix at the start of your sentence.

E.g. Confused, troubled, worried, she didn't know what had happened.

The More, the More Rule:

This is when you begin each clause with 'the more'.

E.g. The more the teacher tried to explain, the more confused the pupils became.



Geography

What is geography?

1. What is geography?

Examples of the 3 types of geography:

Human: Cities, migration, tourism, economy

Physical: Weather, volcanoes, rivers

Environmental: Plastic pollution, climate change
Geographers aim to understand the world and to find solutions to the challenges that we face.



3. Geography in the news

Fake news is news that isn't accurate. WAAT analysis can be used to identify it:

Where: Does it match other news stories?

Author: Are they an expert?

Accuracy: Any spelling/grammar errors?

Timing: Is it recent/relevant or out of date?



2. Geography our class

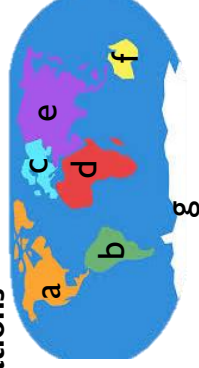
Questionnaires are a set of written questions that can be used to survey people have **open** and **closed** questions.

Open: People can give any answer

Closed: People choose from answer list
Results can be displayed on a **bar chart**.

4. Describing locations

- a. North America
- b. South America
- c. Europe
- d. Africa
- e. Asia
- f. Australasia
- g. Antarctica



5. Mapping the UK



Physical:

- Mountainous in Wales and NW Scotland, flatter in SE England.
- Longest river is the River Severn.
- West is wetter.

Human:

- London is capital city
- Most people live in central and SW England
- Population = 68 million

6. Intro to Map skills

Scale: This is used to show the real life distance that is on the map.

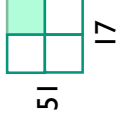
Key: This shows what symbols mean, e.g.

- Camp site
- Picnic site
- Caravan site
- Visitor centre

7. 4-figure grid references

These locate a particular **grid square** on a map, for instance 1751. To find these:

1. Locate bottom left corner of square
 2. Read the number along the bottom
 3. Read the number up the side
- 'Along the corridor then up the stairs'.



	Key Term	Definition
1	Geography	The study of the relationships between people and places.
2	Human geography	How and where people live
3	Physical geography	What the natural world is like
4	Environmental geography	How people affect the natural world
5	Location	Where something is, e.g., Birmingham is located in central England.
6	UK	A country made up of England, Scotland, Wales and Northern Ireland
7	Great Britain	The island on which England, Wales and Scotland are located
8	Compass	An instrument used to find out which direction you are pointing. Always used compass directions to describe the location of places.
9	Grid square	These are squares on a map that can be used to help to locate various features.
10	Grid reference	This is a set of numbers that identifies a location on a map.



History

Knowledge organiser pack: Year 7

What is a knowledge organiser?

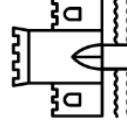
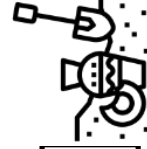
A knowledge organiser provides a summary of the key information you need to know and remember for each Big Question. It is a good place to start when you are revising and self-quizzing, but if you want to be able to give more detailed answers you should go to your information booklet and class notes as well. It also provides the key terms for each topic and a timeline overview.

How should you use your knowledge organiser pack?

The Big Question topics will teach you different knowledge and historical skills, and it is important that you retain this knowledge throughout Year 7 and beyond because it will be useful for you to have a foundation of knowledge that you will build on throughout the year. You will have knowledge quizzes in class throughout the year that will test your knowledge from previous Big Questions. You should use it to **self-quiz**. Just re-reading information won't help you to remember it. You could cover up the information and then say aloud or write down what you remember about each heading, then check what you have missed.

Knowledge organisers in this pack:

Pages 2-3	History basics
Pages 4-5	How has migration shaped the Midlands?
Pages 6-7	Which Ancient Persian King was the most effective ruler?
Pages 8-9	How have historians and archaeologists uncovered the history of the Silk Routes?
Pages 10-11	How was England created?
Pages 12-13	How did the Normans conquer England?
Pages 14-15	What was it like to live in a Medieval Village?
Pages 16-17	How did Plantagenet Kings deal with threats to their power?
Pages 18-19	What is the significance of the Crusades?



Knowledge organiser: **History basics**

10,000-500 BC
Prehistoric


500BC-450AD
Classical

450-1500
Medieval

1500-1800
Early Modern

1800-present
Modern



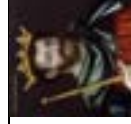
1	What is history?	History is the study of the past. The word 'history' comes from the Greek language, <i>historia</i> means finding out about something. History is the story of how people lived and developed over time. We can learn why events happened and how society has changed over time.
2	What is a historian? 	History is ongoing and people are finding out new things about the past all the time. Historians might study a certain part of the past that they are interested in, such as the Victorians or women's history. They use sources and evidence to learn about the past. There are many different historians, for example Miranda Kauffman who has written about the lives of Africans in Tudor England, and David Olusoga, who has written many books about black history.
3	What skills do historians need?	In history, you need the skills to study sources and evidence and to work out what this can tell us about the past by asking questions about provenance . Historians create interpretations and make a judgement about what they think happened. Historians also decide how significant different events were. In history, you will develop skills in literacy (writing) and analysis.



Stonehenge was built in prehistoric Britain



Modern drawing of Roman Britain



King John, a Medieval King



The Tudors, an Early Modern royal family



Factories during the Industrial Revolution: from the Modern period

Time periods in History

1	Prehistoric	Prehistory is the time before people were writing things down, so we cannot use written sources to find out about it. Instead, we find out about it just using objects.
2	Classical	Classical or Ancient history in Europe is when the Greek and Roman empires were powerful. In Britain, this is when the Romans ruled Britain – 50BCE-450CE .
3	Medieval	Medieval (sometimes called the Middle Ages) is split into 3 sections: Early, High and Late. In Britain in this time, kings ruled, there were lots of battles and the Christian church was very powerful.
4	Early Modern	This is when the Tudors and Stuarts were in charge in Britain. It was a time of big change in religion and power, with kings, queens and religion becoming less powerful.
5	Modern	The modern era started with the Industrial Revolution and comes right up to now! The World Wars are included here.
6	BCE	Before the Common Era (sometimes known as BC). This refers to years that come before '0' on a timeline.
7	CE	Common Era (sometimes known as AD). This refers to years that come after '0' on a timeline. For example, the Battle of Hastings in 1066 CE

Key terms: **History basics**

Word	Definition and characteristics	Examples in a sentence
cause	A cause is something that makes another thing happen. Reasons for something happening.	World War II was caused by Adolf Hitler.
consequence	Something that happens as a result of something else; the effects or impacts. A consequence can be positive or negative.	A consequence of the British Empire was the terrible treatment of Aboriginal Australians.
change	When something becomes different over time.	Women's rights have changed a lot in the last 100 years.
continuity	When something stays the same over time.	There was a lot of continuity during the Medieval period, as the Church had power throughout.
significance	When something is historically important, both at the time and now (short term and long term)	Magna Carta was a significant document because it is still important today.
source	Something produced at the time that tells us about a time in history, a document or object made when the event was happening	The historian used the source to tell the story about the people who lived in the past.
interpretation	Something produced after the event that contains a historical judgement or opinion about the event.	The historian created an interpretation about what happened.
inference	An idea or conclusion about what the source/interpretation is saying based on what you can see/read and your knowledge of the context.	The pupil made an <i>inference</i> about the source using her subject knowledge.
source/ interpretation content	What you can see or what is said/drawn etc. in the source/interpretation.	The content of the source showed a cartoon of the political leader.
source/ interpretation context	Your historical knowledge of what was happening at the time the source/interpretation is talking about.	The historians used their knowledge of the context to work out when the source could have been made.
source/ interpretation provenance	This is the five 'wh' questions: What is it? Who made it? When was it made? Where was it made? Why was it made?	The historian used the provenance of the source to find out if it was truthful.

Key terms: **How has migration shaped the Midlands?**

Key word (subject specific vocabulary)	Definition and characteristics	Example used in a sentence
campaign	To fight for something you believe in and to share your opinions.	<i>Jenny Harry campaigned for the end of slavery.</i>
community	A group of people living in the same space or area and having shared values.	<i>Birmingham is home to many different communities with different beliefs and traditions.</i>
discrimination	Treating someone badly because of who they are and what they believe in.	<i>They had difficult experiences as a result of discrimination against them.</i>
diversity	When people of different backgrounds, beliefs and identities mix in society.	<i>The city of Birmingham has a lot of diversity</i>
expel	To send someone away from a certain place.	<i>The Jewish population were expelled from England.</i>
famine	When there is not enough food for everyone and there is starvation.	<i>There was a famine because the crops did not grow</i>
migration	Movement from one place to another, settling in a new city or country.	<i>There has been a lot of migration to the UK throughout history.</i>
poverty	When people to not have enough money to afford necessities such as shelter.	<i>Many lived in poverty because they could not find enough work.</i>
pull factor	People might want to get to a particular country or area. These are known as pull factors. For example, a new job.	<i>The pull factors led to the family moving for a new start.</i>
push factor	People might want to get away from where they previously lived. These are known as push factors. For example, war or discrimination.	<i>The push factors led to their migration to a new country.</i>
racism	Treating people from a particular background or race badly.	<i>The migrants faced racism when they moved to Birmingham.</i>

Knowledge organiser: **Which Ancient Persian King was the most effective ruler?**

559BC	539BC	530BC	525BC	522BC
Cyrus the Great become king of Persia	Cyrus conquers Babylon	Cambyses become king of Persia	Cambyses conquers Egypt	Darius become king of Persia



518BC	490BC	486BC	480BC	466 BCE
Darius builds Persepolis	Invasion of Greece & Battle of Marathon	Xerxes become king of Persia	Battles of Thermopylae and Salamis	Death of Xerxes



1	Persian Empire	The Persian Empire was a large and powerful empire that existed around the same time as the Greeks in Europe. It controlled lots of land in the Ancient Near East including important cities such as Babylon. Their land stretched from Egypt all the way to India.
	Herodotus	A Greek historian who lived in what is now Turkey, called Herodotus, provides us with information about the Persian empire. He wrote a book about Persia after he visited and used the stories told by other people to reconstruct the past. He wrote from a Greek point of view many years after the kings we will study. A lot of what he wrote is supported by other evidence such as archaeology .
	Archaeology	Archaeology is the study of the past through finding (e.g. digging up) the objects that tell us about how people have lived, such as art, buildings, religious objects and practical objects. Objects that tell us about how people have lived are called material culture . Archaeology is important for the study of ancient history, because there are not as many written sources.
3	Cyrus the Great	Cyrus became king of Persia in 559BCE. He was king of the first of the 'King of Kings' of the Persian Empire and was known as 'Cyrus the Great'. He had a large army and conquered the lands of Media, Lydia and Babylon, taking them under the control of Persia. Cyrus is known as the liberator of the Jews as he treated them with respect in Babylon. Cyrus built a new city at Pasargadae.
4	Cambyses	Cambyses was the son of the previous king Cyrus. He wanted to expand the Persian Empire. Cambyses attacked Egypt and

		took control of their lands. Cambyses was known as the 'mad king' because he did not always respect the Egyptian people's religion and beliefs. He let his soldiers sleep in Egyptian temples. He also had his own brother killed and then later his wife.
5	Darius the Great	The next king, Darius, was a cousin of Cambyses.. He was a powerful leader and created many new buildings and monuments , and changing the way that Persia was run.
6	Susa and Persepolis	King Darius built new cities during his reign, called Susa and Persepolis. Some of the best preserved remains from the Persian empire come from Persepolis. This city had beautiful gardens, art and architecture . A lot of Persian money was put into building the city. The most famous part is the staircase showing all the people in the empire that Darius conquered.
7	Darius and the Battle of Marathon	Darius attacked Greece after a revolt of the Greeks living in Persia. Darius wanted to conquer Greece and take the land for his empire. The Battle of Marathon took place in 490 BCE. The Persians had a lot more soldiers, but the Greeks won. After the battle, a Greek ran 26 miles back to Athens to share the news of victory.
8	Xerxes and the Battle of Thermopylae	Xerxes became king after his father, Darius, died. He was a powerful leader who wanted to get revenge on Greece for defeating his father. The Persians won the Battle of Thermopylae, defeating a small but fearsome Spartan army (Sparta was a Greek city-state). However, soon after this, the Greeks won the Battle of Salamis




Key terms: **Which Ancient Persian King was the most effective ruler?**

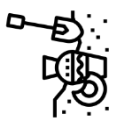
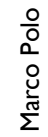

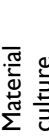
Word	Definition and characteristics	Examples in a sentence
empire	Lands or countries taken over and controlled by a single leader.	The Persian empire included lands known today as Iraq and Afghanistan.
conquer	To take over a place or a group of people, sometimes using violence.	The Persian kings decided to <i>conquer</i> many lands to grow their empire.
liberate	To set someone free from being trapped or from being a slave.	Cyrus decided to <i>liberate</i> the Jews in Babylon so they could return home.
architecture	The way that buildings are built and how they look.	Different cultural styles could be seen in the <i>architecture</i> of the palace.
source	Something we can study to find out about events or people in the past. It could include written sources or objects.	One of the main <i>sources</i> for studying Ancient Persia Herodotus's book <i>The Histories</i> .
archaeology	Finding (e.g. by digging up) and analysing objects material culture from the past to find out how people lived.	<i>Archaeology</i> has helped us to understand Ancient Persia.
material culture	The objects that tell us about how people live – such as art, buildings, practical or useful objects, religious objects.	Archaeologists analyse the material culture of the past to find out about how people lived.
mutiny	A refusal to follow orders, particularly in the army.	The Medians <i>mutinied</i> , which meant the Persians won the battle.
succession	The transfer of power from one person to another, e.g. when the previous king dies and the new king becomes king.	The <i>succession</i> of Darius was complicated.
invade	To take your army into somewhere to take control of the area.	Darius attempted to <i>invade</i> Greece.
revolt	Fight against those in power using violence.	There was a <i>revolt</i> against Persian rule in Greek-speaking areas.

Knowledge organiser: How have historians and archaeologists uncovered the history of the Silk Routes?






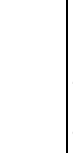






Key people, ideas and developments

1	 <p>Silk Routes</p> <p>The Silk Road was multiple routes in different directions connecting parts of Asia. The route ran from China through central Asia, Samarkand, Tehran and to Istanbul. Items such as tea, spices, pottery and silk were traded along these routes. Historians have used archaeology and the writing of explorers such as Marco Polo to reconstruct what life was like along the Silk Road.</p>
2	 <p>Traded objects</p> <p>Merchants were traders who carried goods along the silk roads to other parts of the world. China produced silk, tea, rice, paper, bronze and ceramics, all of which were in high demand in Asia, the Middle East and Eastern Europe. In the other direction, merchants traded wool, glass, gold and embroidery, taking products from Europe to the east.</p>
	 <p>Religion</p> <p>As well as trading objects, the Silk Road became a way of spreading ideas, including religious ideas. People with different religions came into contact with each other, including Buddhists, Zoroastrians, Christians, Muslims and Jews. Zoroastrianism developed in Persia and was combined with local traditions. Buddhism started in India and Sogdian merchants helped spread the religion to China and Japan. Merchants also helped to spread</p>

		Christian ideas. There were periods of tolerance and intolerance of religious minorities.
4	 <p>Aurel Stein</p> <p>Sir Aurel Stein was a British-Hungarian explorer and archaeologist. He went on expeditions to areas along the Silk Routes to excavate the areas. His finds supported that the Silk Routes had spread not only religious ideas but languages and other ideas. He made detailed notes and maps of each of the areas, helping historians understand the importance of the Silk Road by using objects.</p>	
5	 <p>Marco Polo</p> <p>A traveller and writer from Venice (now in Italy), who travelled across Asia and wrote about his experiences. His book about his travels tells us about how the Silk Routes operated.</p>	
6	 <p>Ibn Battuta</p> <p>Ibn Battuta was an explorer from Morocco who travelled to the Islamic holy city of Mecca and journeyed to multiple countries around the world in the 14th century (1300s). He wrote about his travels along the Silk Routes.</p>	
7	 <p>Material culture</p> <p>Historians can find out about the Silk Routes by studying material culture, which is often excavated by archaeologists. This can include artworks that tell us about ideas and fashions, and practical items such as clothing.</p>	

Key terms: **How have historians and archaeologists uncovered the history of the Silk Routes?**

Word	Image	Definition and characteristics	Examples in a sentence
archaeology		The study of human history through physical objects such as pottery or statues.	Archaeology can help historians to find out how people used to live.
Buddhism		A religion that originated in India in around the 4 th century BCE and which spread across Asia in along the Silk Routes.	Buddhism spread from India across Asia due to the Silk Road. People who practise Buddhism are called Buddhists .
caravan		People travelling in a group, particularly in Asia or North Africa.	Ibn Battuta joined the caravan and travelled across Asia. Good were transported from east to west in caravans .
embroidery		Cloth decorated with patterns and decorated with thread.	The embroidery was very detailed and was very valuable.
excavate		To discover things by digging in a particular area.	Aurel Stein excavated areas along the Silk Road to find out what life was like.
material culture		The objects that tell us about a society, for example artworks, architecture or practical objects.	Archaeologists often find material culture. Material culture can tell us about societies from the past.
merchant		A person who makes money by buying and selling things.	Nanaivandak was a merchant from the 4 th century. Merchants bought items in China and sold them as far away as Constantinople.
silk		A type of fabric made from the threads produced by the silk moth. It is very beautiful and strong, and also expensive.	Until the 5 th century, China was the only place in the world that knew how to produce silk . Silk was very desirable because it is so beautiful.
Sogdiana		An area in Central Asia – now part of Uzbekistan and Tajikistan. Sogdians were important Silk Road merchants between the 4 th and 7 th centuries CE.	Many middlemen were from Sogdiana . They were was Sogdian .
Zoroastrianism		A religion that originated in what is now Iran in the 5 th century BCE. It emphasised opposites: good and evil, heaven and hell.	Zoroastrianism was an important religion in Sogdiana. Zoroastrianism declined due to people converting to other religions, but small Zoroastrian communities spread along the Silk Road.

Knowledge organiser: **How was England created?**

Early 5 th century	5 th and 6 th centuries	7 th century (died 688)	9 th century onward	871 to 899	911 to 918	925 to 939
End of Roman Britain	Angles, Saxons and Jutes migrate/invade	Life of Saint Cuthbert	Viking raids	Reign of Alfred	Æthelwulf's reign	Æthelstan's reign



Key people, ideas and developments

1	The end of Roman Britain	When the Roman Empire ended, Roman rule in Britain ended and the Romans left. The people remaining, called Celts and Britons, ruled themselves in small groups.
2	Angles, Saxons and Jutes	New groups of people from what is now Germany and Denmark arrived and took control of what is now England. They ruled in small kingdoms. These kingdoms changed over time, but the most long-lasting ones were Sussex and Kent in the south, Essex and East Anglia in the east, Mercia in the midlands, Northumbria in the north and Wessex in the south-west. They became known as the Anglo-Saxons.
3	Christian conversion	In the late 6 th and early 7 th centuries, people were sent to England to convert the Anglo-Saxons to Christianity from their existing pagan religions. Over the next century or so, all the Anglo-Saxon kingdoms officially converted.
4	Saint Cuthbert	Cuthbert was a monk who lived in Northumbria. Many of the items he was buried with survive, and they can tell us about many aspects of the Anglo-Saxon period.
5	Viking raids	Vikings, from Scandinavia – what is now Norway, Sweden and Denmark – started raiding the coasts. To start with, they just attacked and took loot (valuable items), and then got back on their ships.
6	Viking invasion	In 865, the Vikings brought an army to England – this time, not just to raid, but to invade and take control of the Anglo-Saxon kingdoms. The Vikings had many successes against most of the kingdoms, but Wessex remained undefeated.

7	Alfred the Great	Alfred was King of Wessex. He led an Anglo-Saxon army against the Vikings and won at the Battle of Edington in 878. The treaty agreed between Alfred and the Viking leader split England into a northern section, known as the Danelaw, which was Viking-controlled, and a southern section which remained in the hands of the Anglo-Saxons. Alfred started calling himself 'King of the Anglo-Saxons.'
8	Æthelwulf, Lady of the Mercians	Æthelwulf ruled the Kingdom of Mercia from 911 until her death in 918. She took over after the death of her husband. She led her Mercian army in battle and won many victories against the Vikings, for example at Tettenhall (now near Wolverhampton), pushing the border of the Danelaw north.
9	King Æthelstan	Æthelstan ruled Wessex and Mercia from 925 onwards. He won a key battle against the Vikings in York, the capital of the Danelaw, and went on to defeat the Viking army and claim control over the whole of England. He is recognised as the first King of England.
10	Reforms	As well as military successes, Alfred, Æthelwulf and Æthelstan fortified towns, encouraged markets to grow, made new laws (e.g. to help people in poverty and reduce punishments for young people who broke the law under Æthelstan's reign), and translated books into English to encourage learning.
11	Sources	Much of our information about the Anglo-Saxon period comes from the Anglo-Saxon Chronicle, a record that was kept at the time of all the major events that happened from the reign of Alfred onwards. We also have other sources, for example some legal codes and other written records survive, as do some examples of material culture.

Key terms: **How was England created?**

Word	Definition	In a sentence
fortify	To strengthen against military attack, for example by building strong walls	Æthelflad fortified towns against Viking attack.
invade	invade: go to a place with an army to take control of it	The Vikings invaded in the 9 th century
kingdom	An area ruled over by a king or queen.	Wessex was an Anglo-Saxon kingdom.
loot	Noun: something stolen from a place during an attack Verb: to steal something from a place during an attack	The Vikings took their loot back to Scandinavia. The Vikings looted towns on the coast.
monk	A man who devotes himself to religion, in this case Christianity, living in a separate community and spending time praying and doing charitable work inspired by religion (the female version is a nun)	Cuthbert was a Northumbrian monk
overlord	The person you recognise as your ruler in a system of power	Some Welsh and Scottish leaders recognised Æthelstan as their overlord.
pagan	A religion that involves worshipping multiple gods and goddesses; pagans existed in most parts of the world before the major world religions spread	The Anglo-Saxons were pagan before they converted to Christianity.



Maths

Year 7 Maths

Autumn Term 1 Knowledge Organiser

Sequences

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

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	1	4	9

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

Graphically

Algebraic Notation

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.

Variable: Represented by a letter

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)

Eva

In words	In algebraic notation
2 more than m	$m + 2$
5 less than h	$h - 5$
4 lots of a or $4 \times a$	$4a$
y divided by 3 or $y \div 3$	$\frac{y}{3}$

Numbers and letters written next to each other indicate multiplication.

Divisors are written using fraction notation.

All of graphs will be linear only those with an integer value for x. Powers and fractions generate affinely spaced graphs.

Representing functions graphically

Take the function and generate a sequence: $2k + 3$

INPUT k → $\times 2$ → OUTPUT

To represent graphically the input becomes x co-ordinates and the output becomes y co-ordinates

$y = 2k + 3$

INPUT k	1	2	3
OUTPUT y	5	7	9

This becomes a coordinate pair (2, 7) to plot on a graph.

NOTE
Because the x-axis graph you can predict other values.

Equality & Equivalence

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 as 'like'

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

Simplify: Collect like terms together

Collecting like terms
Only like terms can be combined

$4x + 5b - 2x + 10b$

$(4x - 2x) + (5b + 10b)$

$2x + 15b$

$2 \times 6 = 12$

$6 \times 2 = 12$

$12 \div 2 = 6$

$12 \div 6 = 2$

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

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

Place Value, Order integers and Decimals

Keywords:

Approximate: To estimate a number, amount or total often using rounding of numbers to make them easier to calculate with

Integer: a whole number that is positive or negative **Interval:** between two points or values

Median: A measure of central tendency (middle, average) found by putting all the data values in order and finding the middle value of the list.

Negative: Any number less than zero; written with a minus sign.

Place holder: We use 0 as a place holder to show that there are none of a particular place in a number

Place value: The value of a digit depending on its place in a number. In our decimal number system, each place is 10 times bigger than the place to its right

Ascending: Numerical order smallest to biggest

Descending: Numerical order biggest to smallest

Range: The difference between the largest and smallest numbers in a set
Significant figure: A digit that gives meaning to a number. The most significant digit (figure) in an integer is the number on the left. The most significant digit

Median *The middle value*

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	
M	HTh	TTh	Th	H	T	O	.	t	h	th
	3	4	5	8	6	2	0	1	2	7

Example 1 Median: put the in order
 4 5 9 6 12
 find the middle number 5 4 6 9 12

Example 2 Median: put the in order
 10 54 14 137 146 50 15 160
 137 146 50 15 160
 There are 2 middle numbers
 Find the midpoint 152

Range *Spread of the values*
 Difference between the biggest and smallest
 5 9 6 12
 Range: Biggest value - Smallest value
 12 - 5 = 7
 Range = 7

Autumn Term 2 Knowledge Organiser

Fraction, Decimal, Percentage Equivalence

Keywords:

Fraction: how many parts of a whole we have

Decimal: a number with a decimal point used to separate ones, tenths, hundredths etc.

Percentage: a proportion of a whole represented as a number between 0 and 100

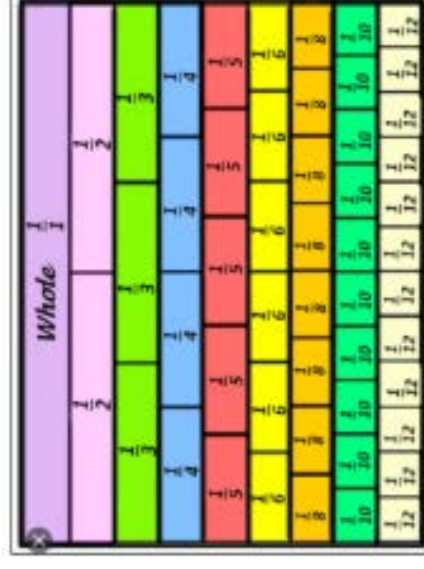
Interval: a range between two numbers

Tenth: one whole split into 10 equal parts

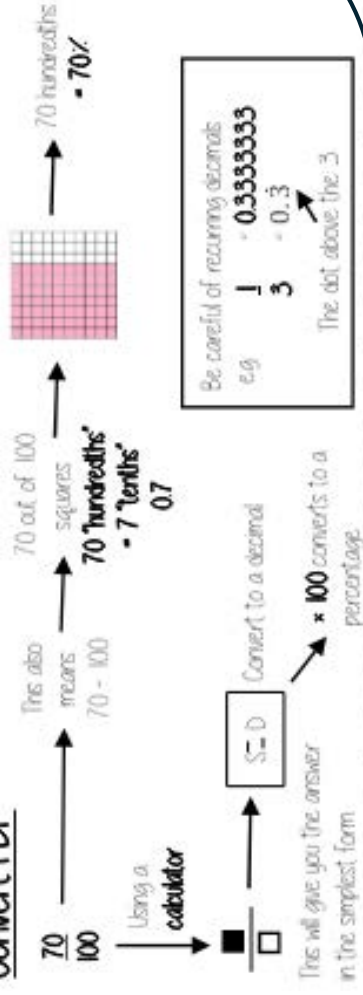
Hundredth: one whole split into 100 equal parts

Sector: a part of a circle between two radius (often referred to as looking like a piece of pie)

Recurring: a decimal that repeats in a given pattern



Convert FDP





MFL (French)

Comment tu t'entends avec ta famille? How do you get on

Comment tu t'entends avec ton/ ta/ tes....

Other details

Je m'entends bien avec

mon père/ mon frère/ grand père/ mon oncle/ mon cousin

I get on well with...

ma mère/ ma sœur/ ma grand-mère/ ma tante/ ma cousine

Je ne m'entends pas bien avec

mes parents/ mes grands-parents

I don't get on well with...



Opinion opener

parce que/ car *because* comme *as*

Être conjugated

A mon avis

je suis I am

In my opinion

je **ne** suis **pas** I am not

Je pense que/ qu'

il est he is

I think that

il **n'**est **pas** he is not

Je crois que/ qu'

ils sont they (m.) are

I believe that

ils **ne** sont **pas** they (m.) are not

Je dirais que/ qu'

je suis je suis I am

I would say that

je **ne** suis **pas**

elle est she is

elle **n'**est **pas** she is not

elles sont they (f.) are

elles **ne** sont **pas** they (f.) are not

Adjective

agaçant(s) annoying

amusant(s) funny

indépendant(s)

independent

patient(s) patient

ouvert(s) open-minded

calme(s) quiet

sévère(s) serious

fidèle(s) loyal

sympa(s) nice

responsable(s) responsible

calme(s) quiet

sévère(s) serious

fidèle(s) loyal

sympa(s) nice

responsable(s) responsible

agaçante(s) annoying

amusante(s) funny

indépendante(s)

independent

patiente(s) patient

ouverte(s) open-minded

calme(s) quiet

sévère(s) serious

fidèle(s) loyal


sympa(s) nice

responsable(s) responsible


Scanne-moi!



Décris-moi ta famille

<p>Maintenant <i>Now</i> Actuellement <i>Currently</i></p>	<p>j'ai <i>I have</i> il a <i>he has</i> elle a <i>he has</i> ma mère a <i>my mother has</i> mon père a <i>my father has</i></p> <div style="border: 1px solid black; padding: 10px; text-align: center;">  </div> <div style="background-color: black; color: white; padding: 5px; text-align: center; margin-top: 5px;"> Scanne-moi! </div>	<p>les cheveux <i>hair</i></p>	<p>blonds <i>blond</i> gris <i>grey</i> noirs <i>black</i> roux <i>red</i> châtain <i>brown</i> courts <i>short</i> raides <i>straight</i> longs <i>long</i> frisés <i>curly</i> ondulés <i>wavy</i></p> <p>verts <i>green</i> marron <i>brown</i> gris <i>grey</i> bleus <i>blue</i></p>
<p>Si c'était possible <i>If it was possible...</i></p>	<p><i>je (ne) suis (pas) I am (not)</i> il/ elle (n')est (pas) <i>he/ she is (not)</i></p> <p>je voudrais avoir... <i>I would like to have...</i> il/ elle voudrait avoir... <i>he/ she would like to have...</i> je voudrais être... <i>I would like to be...</i> il/ elle voudrait être... <i>he/ she would like to be...</i></p>	<p>des lunettes <i>glasses</i> une barbe <i>beard</i> une moustache <i>moustache</i></p>	<p>mince <i>skinny</i> gros(se) <i>large</i> petit(e) <i>short</i> grand(e) <i>tall</i> jeune <i>young</i> vieux/ <i>vielle</i> <i>old</i></p>
<p>aussi <i>also</i></p>	<p>mais <i>but</i> cependant <i>however</i></p>	<p>très <i>very</i> assez <i>quite</i> trop <i>too</i> vraiment <i>really</i> un peu <i>a little bit</i></p>	<p>et <i>and</i> donc <i>therefore</i></p>

Tu habites où?

Tu habites où? <i>Where do you live?</i>		Quelles langues tu parles? <i>Which languages do you speak?</i>	
Habiter (Infinitive)	Place	Parler (Infinitive)	Langues
J' <u>habite</u> / <i>live</i>	à Birmingham <i>in Birmingham</i>	Je <u>parle</u> / <i>speak</i>	anglais <i>english</i>
Tu <u>habites</u> / <i>live</i>	à Londres <i>in London</i>	Tu <u>parles</u> / <i>speak</i>	français <i>french</i>
Il <u>habite</u> / <i>live</i>	à Paris <i>in Paris</i>	Il <u>parle</u> / <i>speak</i>	espagnol* <i>spanish</i>
Elle <u>habite</u> / <i>live</i>	à + city/ town	Elle <u>parle</u> / <i>speak</i>	allemand* <i>german</i>
lel <u>habite</u> / <i>live</i>	en Angleterre (f) <i>in England</i>	lel <u>parle</u> / <i>speak</i>	arabe* <i>arabic</i>
Mon père <u>habite</u> / <i>live</i>	en Algérie (f) <i>in Algeria</i>	Mon père <u>parle</u> / <i>speak</i>	italien* <i>italian</i>
Ma mère <u>habite</u> / <i>live</i>	en France (f) <i>in France</i>	Ma mère <u>parle</u> / <i>speak</i>	ourdou* <i>urdu</i>
Mes grands-parents <u>habitent</u> / <i>live</i>	en Martinique (f) <i>in Martinique</i>	Mes grands-parents <u>parlent</u> / <i>speak</i>	
My grandparents <i>live</i>	en Europe (f) <i>in Europe</i>		
	en Asie (f) <i>in Asia</i>		
	en Afrique (f) <i>in Africa</i>		
	en Amérique (f) <i>in America</i>		
	en + feminine country/ continent		
	au Madagascar (m) <i>in Madagascar</i>		
	au Royaume-Uni (m) <i>in the U.K.</i>		
	au + masculine country		
	aux Etats-Unis (pl.) <i>in the U.S.A.</i>		
	aux + plural country		
Si c'était possible, je voudrais habiter / <i>If it was possible, I would like to live</i>		 <p>Scanne-moi!</p>	
aussi / <i>also</i>	mais / <i>but</i>	Si je pouvais, je voudrais parler / <i>If I could, I would like to speak</i>	
pendant / <i>however</i>	et / <i>and</i>		
	tandis que / <i>whereas</i>		
	pourtant / <i>yet</i>		



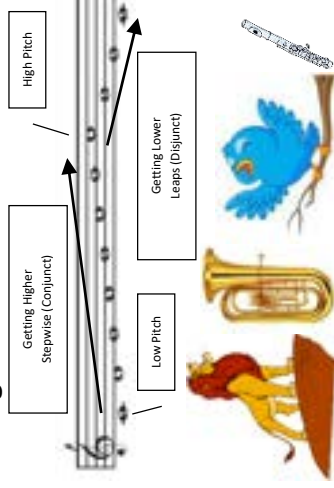
Music

Building Bricks

Exploring the Elements of Music

A. Pitch

The **highness or lowness** of a sound.



E. Texture

How much sound we hear.

THIN TEXTURE: (*sparse/solo*) – small amount of instruments or melodies.



THICK TEXTURE: (*dense/layered*) – lots of instruments or melodies.



B. Tempo

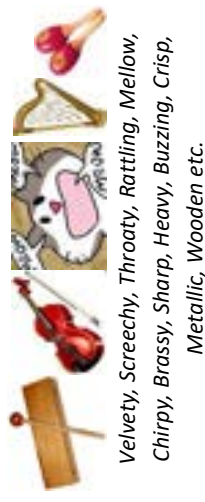
The **speed** of a sound or piece of music.

FAST: *Allegro, Vivace, Presto*
SLOW: *Andante, Adagio, Lento*
GETTING FASTER –
Accelerando (accel.)
GETTING SLOWER –
Ritardando (rit.) or Rallentando (rall.)



F. Timbre or Sonority

Describes the **unique sound or tone quality** of different instruments voices or sounds.



C. Dynamics

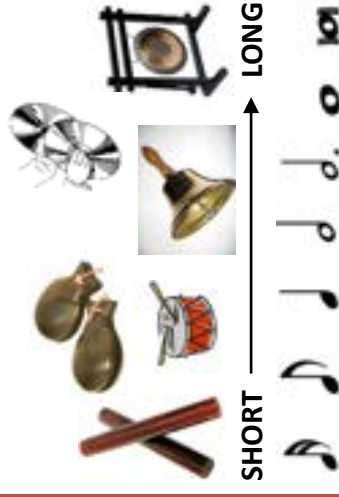
The **volume** of a sound or piece of music.

VERY LOUD: *Fortissimo (ff)*
LOUD: *Forte (f)*
QUITE LOUD: *Mezzo Forte (mf)*
QUITE SOFT: *Mezzo Piano (mp)*
SOFT: *Piano (p)*
VERY SOFT: *Pianissimo (pp)*
GETTING LOUDER: *Crescendo (cresc.)*
GETTING SOFTER: *Diminuendo (dim.)*



D. Duration

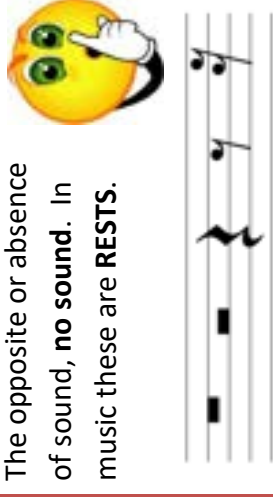
The **length** of a sound.



G. Articulation

How individual notes or sounds are **played/techniques**.

LEGATO – playing notes in a long, smooth way shown by a **SLUR**.
STACCATO – playing notes in a short, detached, spiky way shown by a **DOT**.



H. Silence

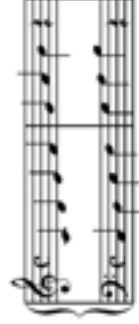
The opposite or absence of sound, **no sound**. In music these are **RESTS**.



I. Notation

How music is **written** down.

STAFF NOTATION – music written on a **STAVE** (5 lines and spaces)



GRAPHIC NOTATION/SCORE – music written down using shapes and symbols to represent sounds.



J. How Music Works

Music can create an **atmosphere** or **ambience** e.g., supermarkets and restaurants.

Music can create an **image** e.g., in response to art, a story, a poem, a character, a situation – this is called **PROGRAMME MUSIC**.

Music can be **calming** e.g., end of an evening in clubs and bars.

Music can be used for **spiritual reasons** e.g., worship, meditation, reflection, hymns and chants, yoga, and spiritual reflection.

Music can be used for **commercial** purposes e.g., advertising, TV themes.

Gamelan

Performing as an ensemble

A. What is the gamelan?

A set of instruments consisting mainly of gongs, metallophones (instruments with rows of tuned metal bars that are struck with mallets) and drums. Some gamelans include bamboo flutes (suling), bowed strings (rebab) and vocalists. Each gamelan has a different tuning and the instruments are kept together as a set. No two gamelans are the same.

B. Context

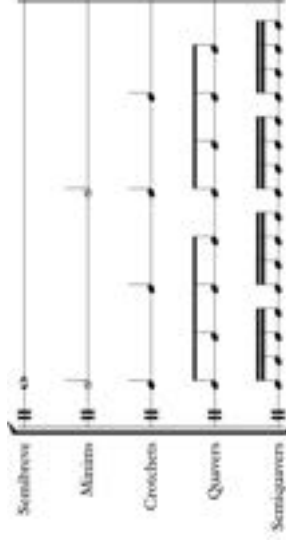
- Traditionally from Java and Bali in Indonesia
- Thought to originate between 8th and 11th century.
- Mainly uses percussion instruments. Instruments that you hit, shake or scrape to make a sound.
- Learned through aural tradition—not written down, but passed down through generations
- It is often heard at celebrations, theatre, puppet shows, rituals, feasts and spiritual occasions.

C. Gamelan features

Gongan—A cyclic pattern of 8 beats
Balungan—The main melody
Pelog—A scale of 7 notes
Slendro—A scale of 5 notes. In most western music this is called the pentatonic scale.
Heterophonic—A texture where a main melody, and decorated/ varied versions of the same melody, are played at the same time.

D. Theory

Scale—A sequence of notes in pitch order.
Unison—All musicians play exactly the same part at the same time.
Structure—The layout of the piece of music. Introduction, Middle, End.
Duration—The length of a note.
Semibreve—4 beat note
Minim—2 beat note
Crotchet—1 beat note
Quaver—1/2 beat note
Semiquaver—1/4 beat note



I. Instruments

The saron is a metallophone made out of metal bars. The saron plays the Balungan.



The kendang is a double-sided drum which keeps the ensemble in time.



The kempul is a selection of Gongs marking

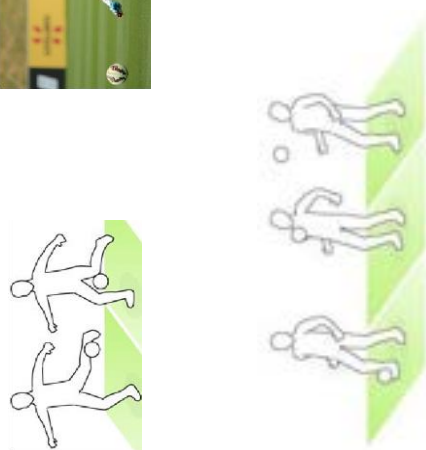



The start and end of each gongan cycle.



Physical Education

Knowledge organiser – FOOTBALL year 7, 8 and 9

<p><u>Key Skills/Techniques</u></p> <p><u>Dribbling</u> Dribbling allows you to move the ball around the field without losing possession. Keep the ball close to your feet at all times, when running with it. Use the inside of your foot to control the ball when moving. Don't look down when running with the ball. Keep your head up.</p> <p><u>Passing</u> Non-kicking foot is closest to the ball. Kicking foot needs to be at a right angle to the ball. Body need to be over the ball. Eyes focused upon the ball and arms are to be used for balance.</p> <p><u>Shooting</u> Non kicking foot needs to be next to the ball and players needs to keep their body balanced with their head slightly over the ball. Contact the ball either with the side of the foot (placement of ball) top of the foot (to generate power). Both legs need to be fixed but when striking the ball, kicking foot needs to be fully extended on the follow-through. For accuracy, aim to shoot between the goal keeper and the posts</p> <p><u>Heading</u> The forehead is used to contact the ball. Eye must be focused on the ball. Meet the ball with your head by moving your feet or jumping to gain the extra height advantage and power. Do not wait for the ball to hit your forehead.</p> <p><u>Chest</u> – Used when the ball is played in the air, to bring it down onto the floor. Player needs to align himself with the ball. Roll their shoulders back to generate a greater surface for the ball to contact with. Chest needs to be slightly curved, to cushion the ball. Bend your knees to take the impact of the ball and then allow the ball to roll down your leg to your kicking foot.</p>	<p><u>Rules/Tactics</u></p> <p><u>Rules</u> Game is started with a kick-off or restarting it after a goal is scored. It is taken at the centre part of the soccer field. During a kick-off, both teams must be on their own halves and only the kicker and the receiver can be inside the centre circle. The game has 11 players on the pitch, consisting of a goal keeper, defenders, midfielders and strikers. A referee and 2 linesmen, officiate the game. If the ball is played outside of the pitch lines, the possession is given to the opposing team. If it goes out the side of the pitch, a throw in is awarded. If it is kicked behind the A corner kick is awarded when the whole of the ball passes over the goal line, either on the ground or in the air, having last touched a player of the defending team. If the attacking team hit the ball behind the goal line a goal kick is awarded. If a foul is committed a free kick or penalty is issued, depending on the incident. To score a goal the ball must cross the opposition's goal line. The team with the most amount of goals at the end of the game will win the game.</p> <p><u>Tactics</u> Vary the passes that you make Play to your opponents weaknesses (if they are dominantly using their left foot, then play the balls on their right). Move opponents around he pitch to tire them out. Vary the pace and direction of passes.</p>	<p><u>Glossary</u></p> <p>Throw in Attack Defend Dribbling Foul Off side Referee Volley Accuracy Penalty Pass Formation Goal Ball Posts Free kick Striker Midfielder Header Tackle Passing communication Formation Corner kick</p> <p><u>Pictures</u></p>  
--	---	---

Volley – The volley involves striking a ball that is still in the air. Focus eyes upon the ball. Arms out for balance. Keep eyes focused on the ball as you get into the line of flight. Head still. Non kicking foot on the floor and lead with the kicking leg forward.

Turning with the ball

Cruyff - Great skill for losing your opponent.

Named after the brilliant Dutchman Johan Cruyff.

Shape as if to pass or cross but then drag the ball behind your standing leg with the inside of foot. Turn your shoulders and your hips so that you are back in line with the ball and then race away.

Step over – Skill for sending an opponent in the opposite direction.

Lift your foot over the top of ball to use a 'step over' and this should immediately create you time and space. Then hook the ball away with the outside of the foot and race away.

Inside Hook - You need to keep your body between the ball and your opponent.

Reach round the outside of the ball with your foot so that you can change its direction. Bend your knees so that you can transfer your weight quickly and turn your hips to change your own direction. Then get a positive first touch on the ball that puts it into an area that is comfortable for you to move on to and accelerate away from your opponent .

Outside Hook – This tricks your opponent

Use the outside of the foot to hook the ball back in the direction that you are going to go.

Drag Back - The drag back is a great turn to use when you haven't got a lot of space to work.

Place one foot on top of the ball and staying in contact with it throughout, roll it back and move off in the opposite direction.

Team formation

4-4-2 (4 defenders, 4 midfielders and 2 strikers) a traditional team set up

5-4-1 (5 defenders, 4 midfielders and 1 striker) A more defensive set up.

3-5-1-1 (3 defenders, 5 midfielders, and 2 strikers one in front of each other). A more attacking set up.

Counter attacking – The team withdraws players into their own half but ensuring that one or two players are committed to the attack

Direct long ball football – Often used to deride 'boring' teams, the long-ball style of play is genuine route one football. Rather than spending time on the ball picking up the pass, exploiting small gaps in the opposition's defence or utilising the flanks, the long-ball is employed as an opportunistic method of attack.

Wide/Wing plays – The ball is played to the wings. By spreading the ball wide, you allow a different angle of attack and offer a number of opportunities for the winger; take on the fullback and drag central defenders out of position, cut inside and drive forward at an angle, or whip in a cross from deep for the strikers to attack.

Off side - An attacking player is flagged offside by the assistant referee if there is only one defending player between the player and the goal line at the time the ball is struck. The player should be in active play if the offside offense is to be called.

Throw in - A method of restarting play during the game, when the ball has exited the side of the field of play. Throw in is taken from where it went out. At the moment of delivering the ball, the thrower must face the field of play. The thrower must have part of each foot on the touchline or on the ground outside the touchline, and use both hands to deliver the ball from behind and over the head.

Cruyff Turn



Inside Hook



Step over



Free Kick

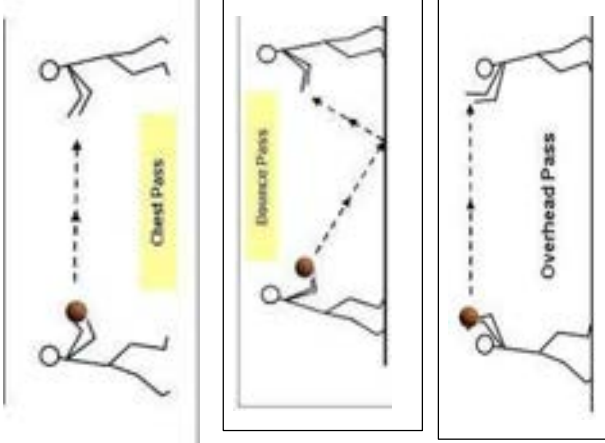
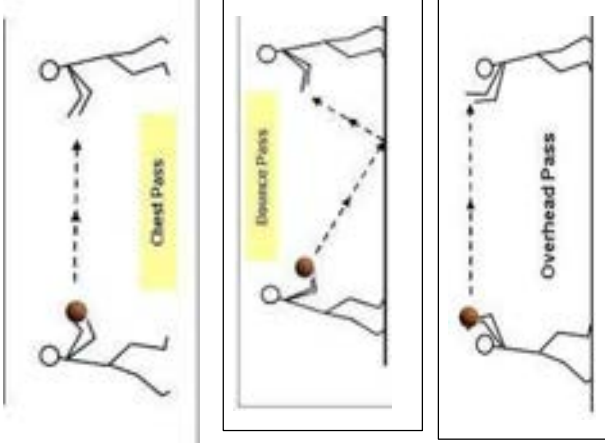
4-4-2 example



Throw in



Knowledge organiser – NETBALL year 7, 8 and 9

<u>Skills and Techniques</u>	<u>Rules</u>	<u>Glossary</u>	<u>Pictures</u>
<p>Footwork: When you receive the ball from another player you will land with your feet using '1, 2' the first foot is your landing foot the second foot is your pivoting foot.</p> <p>Pivoting: You may move around on a pivot by keeping foot number 1 on the floor, but not lifting it up, your foot number 2 can help you by moving around in a circle.</p> <p>Chest pass: This is a short and powerful pass, you have your hands in a W shape and push to extend your arms, you also step forward to give more power.</p> <p>Shoulder pass: This is a long and powerful shot, you start with the ball in your strong hand next to your shoulder, you extend your arm and follow through with your body.</p> <p>Bounce pass: This is a pass which is low to the ground, you use the same position as a chest pass but aim in $\frac{3}{4}$ of the way between you and the person you are bouncing too.</p> <p>Marking: You must be 1m away with your feet from the player, once you have this distance you put both of your arms up over the ball and go onto your tiptoes, when the ball is released you jump to attempt to intercept.</p> <p>Shooting: You have once hand underneath the ball and the other helping it to balance, you get your arm correct and then bend your knees and release the ball, flicking your wrists</p> <p>Dodging: When you need to get free from your player you push off one foot and then turn your hips to change direction and run the other way.</p>	<p>Contact: You can't touch or push any player during the game as it is a non-contact sport, this will result in a penalty pass or if they contact you whilst you are in the shooting circle, you will get a penalty shot.</p> <p>Footwork: If the player moves the landing foot or takes 3 steps with the ball, the other team gets a free pass.</p> <p>Obstruction: You must be 1 metre away from the player with the ball before your arms go up and over the ball. If your defender is obstructing you before you shoot, you get a penalty shot.</p> <p>3 Seconds: You can only hold the ball for 3 seconds before you pass or shoot.</p> <p>Centre Pass: To start a game, and after a goal is scored you go back to the centre pass and players must receive the ball in the centre third.</p> <p>Repossession: If a player drops the ball or bounces the ball and picks it back up again the other team gets a free pass.</p> <p>Offside: If you go into a third that you are not allowed in or if any other player than GS GA GK GD go into the shooting circle the other team gets a free pass.</p> <p>The Game: Netball is played over 4 quarters.</p>	<p>Attack Defence Footwork Pass Interception Marking Dodging Receive Obstruction Contact Pivoting Shooting Repossession Signal Space Rebound Umpire</p>	
		<p>Positions</p> <p>GS GA WA C WD GD GK</p>	 <p>Marking the ball Landing</p>

Tactics

Blocking: This is where you face on and try and block a player. You have to have your hands by your side and if your opponent pushes/runs into you, it would be contact and you get a free pass. This is usually used around the circle. E.G. the defending C will block out the GA, which assists the GD

Dodging tactics: always signal when you want to receive the ball.

Feint Dodge: This is where you trick your player into thinking you are going to run into a certain space by dropping your shoulder but then change your direction and get free for the pass.

Drive/Sprint Dodge: Start on your toes and sprint into a space to receive the ball.

Roll Off: Step to one side to draw the defender, pivot on that foot, make a quick half turn with your back towards the defender and sprint in the opposite direction.

Double feint dodge: Drop your shoulder one way and then the other and then sprint into the space in the opposite direction.

Attacking: Gain the front position on a defender. Move in front of the defender to gain an advantage. Receive the ball on ball side

Defending- 3 steps - mark the player, mark the ball and mark the space
Limit available options for the ball carrier.

Umpire decisions:

Penalty pass - Awarded to the opposing team for any penalty incurred involving obstruction or contact. The offending player must stand to the side of the opposing player and is not allowed to move until the ball has been released.

Free pass - if a player breaks a minor rule such as footwork, offside, the opposition is awarded a free pass, which is a pass taken from the same spot where the rule was broken.

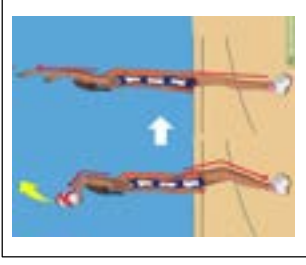
Scoring systems and positions

To score a point the GA or GS must shoot the ball into the net and it must travel all the way through the net. You get 1 point for each goal. They must be wholly inside the goal circle to shoot. If the shooter does not hit the rim of the net/post with the ball and the shooter catches the ball after shooting, this is repossession and the ball goes to the other side.

Goal	To score goals and to work in and around the circle with the GA.
Shooter (marks GK)	Allowed in the shooting third.
Goal Attack (marks GD)	To feed and work with GS and to score goals. Allowed in the shooting and centre third.
Wing Attack (marks WD)	To feed the circle players giving them shooting opportunities. Allowed in the centre and shooting third but not the circle.
Centre (marks C)	To take the centre pass and to link the defence and the attack. Allowed everywhere except the 2 semi circles.
Wing Defence (marks WD)	To look for interceptions and prevent the WA from feeding the circle. Allowed in the centre and defending third but not the circle
Goal Defence (marks GD)	To win the ball and reduce the effectiveness of the GA. Allowed in the defending third and centre third
Goal Keeper (marks GS)	To work with the GD and to prevent the GA/GS from scoring goals. Defending third only.



Shooting position



= Blue Team.
 = Red Team.



Religion and Worldviews

Year 7 Religious Education Autumn Term Sikhism Knowledge Organiser

1. Sikhism was founded by Guru Nanak (1469-1539).
2. Sikhism began in the Punjab, a country that was inhabited mainly by Hindus but where Muslims had the most power and wealth.
3. Guru Nanak believed all humans are equal.

Nature of God – Key information

Sikhs believe that God is beyond human description. They believe that God has no gender and so is not male or female. Sikhs do use the 'he' and 'him' but only able to talk and write easily about God. They believe that any words used to describe God are inadequate because they are human words and so cannot describe fully the greatness that is God. Sikhs believe that God can be experienced because he reveals himself to individuals. Therefore, some of the words often used by Sikhs about God show him as someone who communicates with humans, for example Satnam (which means true name, personality); Shabad (word); and Guru (one who teaches or enlightens). Sikhs believe that God has no limits. God is immanent and so is everything. At the same time is transcendent, above and beyond creation. Sikhs have many names for God but none can describe properly the nature of God. Wareguru (Wonderful Lord or Teacher) is the name Sikhs use in worship.



After Guru Nanak there were 10 Guru's.
Guru- religious teacher- broken down 'gu' means darkness and 'ru' means light so it makes to take someone from light to darkness. Gurus are not worshipped because they are not God.

Guru Granth Sahib – Key information

- The Guru Granth Sahib is the Sikh holy book.
- After the death of Guru Gobind Singh there were no more Gurus, so Sikhs were guided by their holy book.
- The GGS is a collection of the first five Gurus' writings in the form of a book.
- It also contains Hindu and Muslim poems, teaching Sikhs that there is always something that can be learned from others
- It is treated like a living person and is given a special place to live/sit in the Gurdwara.

The Mool Mantra – Key information

The Guru Granth Sahib opens with the words of the Mool Mantra, meaning main chant. Sikhs believe that this was the first teaching of Guru Nanak, after he had become enlightened. It is the most important part of the Guru Granth Sahib and summarises Sikh beliefs about the nature of God.

Vaisakhi is a spring festival which happens on the 13 or 14 April every year.

In 2021 Vaisakhi takes place on Tuesday 13 April.

It was originally a harvest festival in the Punjab until it became Sikhism's most important festival. On Vaisakhi, Sikhs go to the Gurdwara in the morning for a service. Afterwards, they have a procession through the streets with lots of singing, chanting and colourful clothes. The procession is called the Nagar Kirtan. In the evening, Sikhs have a special meal with family and friends.



How the Guru Granth Sahib is treated – Key information

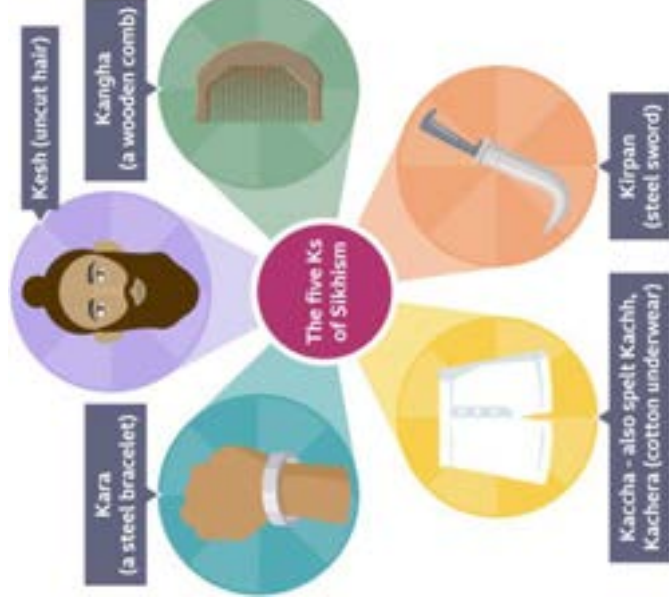
- It is so important that it is placed on a manji, which is like a throne, so that everyone can see it in the gurdwara.
- Someone stands behind it holding a special fan, called a chauri.
- The chauri is a mark of respect.
- There is a canopy or roof over the throne to give extra protection to the Guru Granth Sahib and this is called a chanani.
- Sikhs show their respect to the Guru Granth Sahib by taking off their shoes when they are in the gurdwara and by keeping their heads covered.
- Sikhs also bow before the manji and make offerings of money, sweets or milk.
- Sikhs believe that the Guru Granth Sahib is the word of God and that it is more than just a book.

Key Word	Definition
Granthi	A man or woman who can read the Guru Granth Sahib during ceremonies
Gurdwara	The Sikh Holy Temple
Guru	Sikh word for spiritual leader or teacher. There were 10 living Gurus
Guru Granth Sahib	The Sikh Holy Book. Which is considered to be the last Guru
Kaur	The name given to all Sikh females by Guru Gobind Singh. It means princess.
Khalsa	The formation of Sikhs at Vaisaki initiated by Guru Gobind Singh.
Khanda	The symbol of Sikhism
Langar	The free kitchen inside a gurdwara
Martyr	Someone who dies for their religion.
Mool Mantra	The essential teaching of Sikhism and is the first prayer that the Guru Granth Sahib opens with.
Nishan Sahib	is the name for the triangular Sikh flag which marks all gurdwaras and other religious premises of the Sikhs.
Panj Pyare	The first five members of the Khalsa.
Reincarnation	The cycle of birth, death and rebirth.
Sewa	Selfless Service
Singh	The name given to all Sikh males by Guru Gobind Singh. It means lion.
Waheguru	The Sikh term for God, the Supreme Being or the creator of all. It means "Wonderful Teacher."

The Afterlife

Sikhs believe that every person is a part of God and will eventually return to God.

The soul never dies. There is no heaven or hell but a birth, death and rebirth cycle which will need to be experienced many times before being reunited with God will be possible.



The 10 Gurus

Guru Nanak (1469-1539)

Guru Angad (1504-1552)

Guru Amar Das (1479-1574)

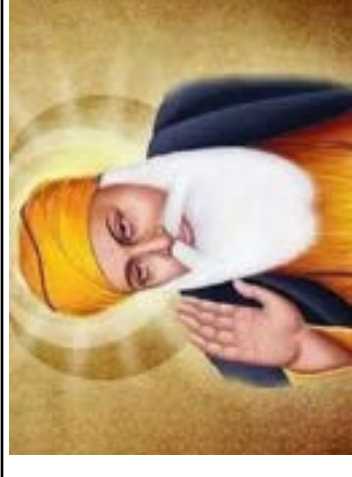
Guru Ram Das (1534-1581)

Guru Arjan (1563-1606)

Guru Hargobind (1595-1644)

Guru Har Rai (1630-1661)

Guru Har Krishan (1656-1664)

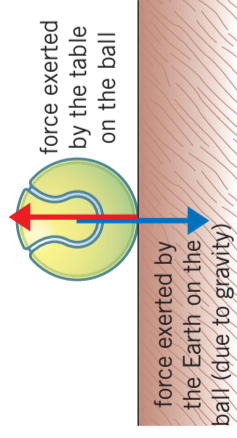




Science

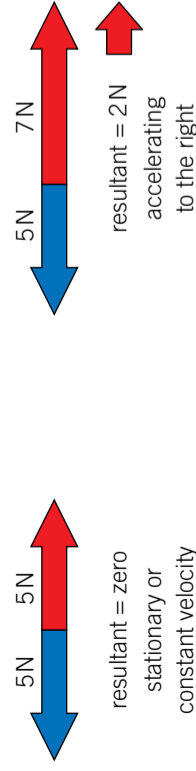
What is a force?

- 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

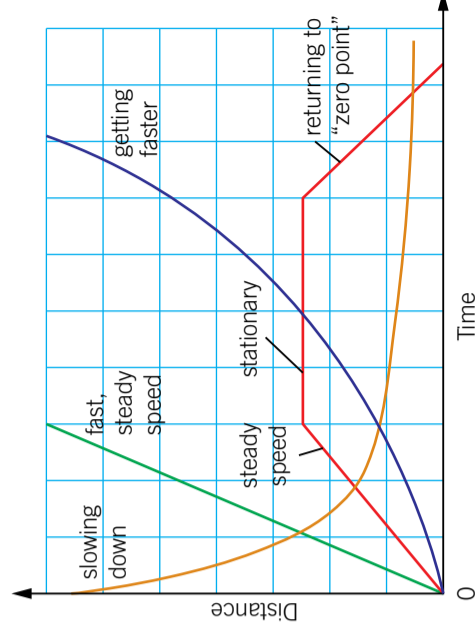
- **Speed** is a measure of how quickly or slowly that something is moving
- We measure speed in meters per second (m/s), this means that distance must be in meters and time must be in seconds
- We calculate speed with the following formula:

$$\text{speed (m/s)} = \frac{\text{distance travelled (m)}}{\text{time taken (s)}}$$

- **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.

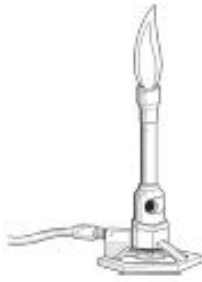
acceleration air resistance kilograms mass Newton contact force newton deceleration non-contact pull push relative motion resultant force friction force field gravitational force gravity interaction pair unbalanced speed weight



HAZARD SYMBOLS

Symbol	Word	Meaning
	Toxic	Poisonous – it could kill you or cause you serious harm
	Corrosive	This will destroy living tissue (e.g. skin, eyes)
	Harmful	Can cause you harm
	Flammable	Catches fire easily
	Oxidising	Allows other substances to burn well
	Explosive	May explode
	Damaging to the environment	May damage the environment

Naming scientific equipment



Bunsen burner



beaker



**measuring
cylinder**



test tube



boiling tube



**evaporating
basin**



tripod



funnel



**clamp stand,
boss and clamp**



conical flask



gauze



heatproof mat



**test tube
holder**



pipette



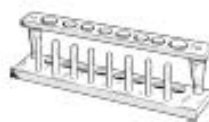
tongs



stop watch



**top-pan
balance**



test tube rack



spatula



safety goggles

Atoms

Atoms are incredibly tiny particles that make up all substances.

There are 92 types of atom – one for each of the 92 elements that exist naturally.

Each type of atom has different properties (e.g., size or mass).

Elements

An **element**:

- cannot be broken down into other substances
- is made of one type of atom only.

Examples of elements include gold, potassium, carbon, and hydrogen.

The names and symbols of all the elements can be found on the **Periodic Table** of elements.

Elements in the Periodic Table are grouped together by their properties, which are different for each element.

		group number																					
				1		2												0					
	H																	He					
Li	Be	B	C	N	O	F	Ne																
Na	Mg	Al	Si	P	S	Cl	Ar																
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr						
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe						
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn						
Fr	Ra	Ac																					

The **chemical symbol** for an element is universal – it is the same in every language, even if the name of the element is different.

Some examples of chemical symbols for common elements are:

hydrogen	H	sulfur	S
carbon	C	sodium	Na
oxygen	O	chlorine	Cl
nitrogen	N	magnesium	Mg

Molecules

A **molecule** is made up of atoms all chemically bonded to each other.

Molecules can be made up from:

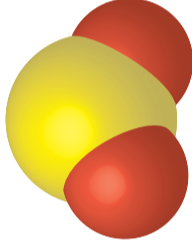
several of the same type of atom

for example, oxygen gas



two or more types of atoms

for example, sulfur dioxide



Different elements have different masses. So, in a molecule, the different atoms that make it up have different masses.

For example, a molecule of water has two hydrogen atoms and one oxygen atom.

Chemical formulae

A **chemical formula** tells you how many of each atom there are in a molecule relative to each other.



two hydrogen atoms for every oxygen atom



two chlorine atoms for every one magnesium atom



one sodium atom for every one oxygen atom, and every one hydrogen atom

Compounds

Compounds:

- are made of two or more *different* atoms strongly joined together.
- can be broken down into other substances.

Naming compounds

In a compound made of a metal and a non-metal, the name of the metal comes first.

for example, *iron bromide*, *magnesium fluoride*

If the non-metal atom is oxygen, it is called oxide. If the non-metal atom is chlorine, it is called chloride.

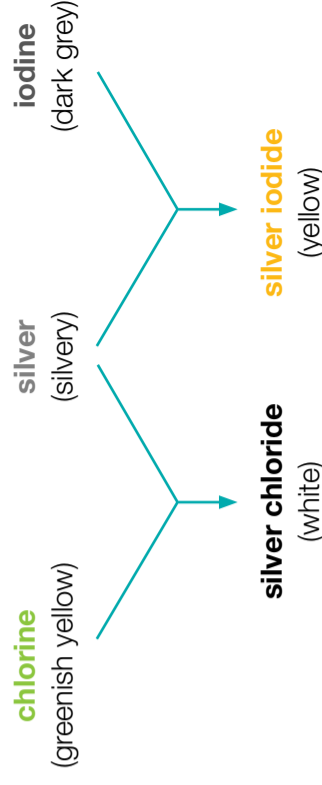
for example, *copper oxide*, *sodium chloride*

In a compound made of a non-metal and oxygen, oxygen comes second and is called monoxide if there is one oxygen atom or dioxide for two oxygen atoms.

for example, *carbon monoxide*, *sulfur dioxide*

When atoms join together to make a compound, the compound has properties that are different to the properties of the atoms that make them up.

For example, the colours of silver compounds are very different from the colours of the elements that make them up:



Make sure you can write definitions for these key terms.

atom

chemical formula

chemical symbol

compound

element

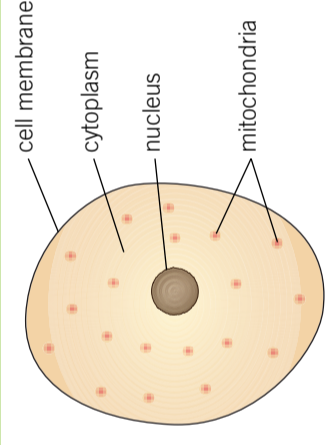
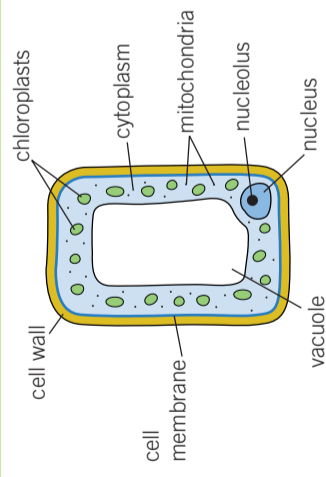
molecule

Periodic Table

All living things (organisms), are made of **cells**. Some are only made of a single cell, for example, bacteria. A person is made up of millions of cells joined together.

Plant and animal cells

Cells have smaller structures inside them, called components, that each have an important function.



Specialised cells

Specialised cells have special features that allow them to do a specific job or function:

Cell type	Function	Special features	Diagram
root hair cell	absorb water and nutrients from soil	<ul style="list-style-type: none"> root hair creates a large surface area no chloroplasts as no light underground 	
leaf cell (palisade cell)	carry out photosynthesis	<ul style="list-style-type: none"> found at the top surface of leaves packed with chloroplasts thin with a large surface area to absorb more light 	
red blood cell	transport oxygen around the body	<ul style="list-style-type: none"> contain haemoglobin which joins to oxygen no nucleus disc shaped to increase surface area 	
nerve cell (neurone)	carry electrical impulses around the body	<ul style="list-style-type: none"> long and thin with connections at each end 	
sperm cell	carry male genetic material	<ul style="list-style-type: none"> streamlined head and a long tail lots of mitochondria to transfer energy 	

Unicellular organisms

A **unicellular** organism only consists of one cell. They have no fixed shape and are adapted to carry out many different functions.

Amoeba

- nucleus controls growth and reproduction
- move by moving part of their body and the rest follows slowly in the same direction
- eat bacteria, algae, and plant cells by engulfing them
- reproduce by splitting in half (binary fission)

Euglena

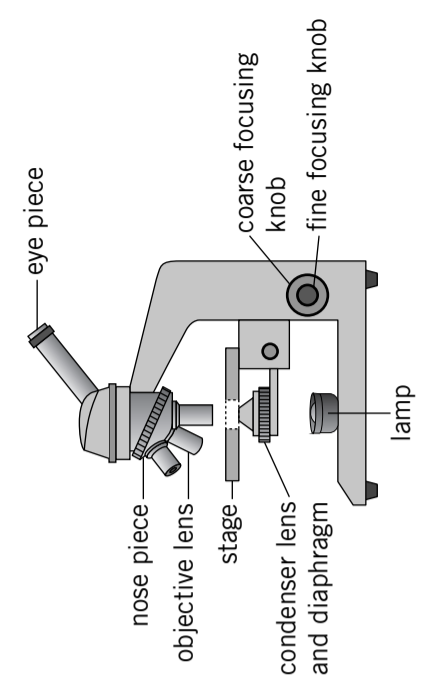
- microscopic organism found in fresh water
- contain chloroplasts and make their own food by photosynthesis
- eye spot that detects light
- flagellum allows the *Euglena* to move towards the light to make more food

Microscopes

Cells can only be seen under a microscope. A microscope magnifies an object using lenses.

Remember that:

- the specimen needs to be thin so light can pass through
- a dye can be added to make the object easier to see.



Using a microscope

- Move the stage to its lowest position.
- Place the slide/object on the stage.
- Choose the objective lens with the lowest magnification.
- Look through the eyepiece and turn the coarse-focus knob slowly until you see the object.
- Turn the fine focus knob until it comes into focus.
- Repeat steps 1–5 using a higher magnification lens.

Movement in and out of cells

Particles move in and out of cells by **diffusion**.

During diffusion, particles spread out from where they are in **high concentration** to where they are in **low concentration**.

Diffusion in water is called **osmosis**.

Glucose and oxygen move from the blood **into** cells by diffusion. Carbon dioxide moves **out of** cells to the blood by diffusion.

Key terms

Make sure you can write definitions for these key terms.

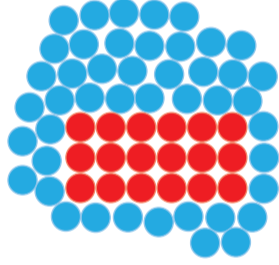
- amoeba cell cell membrane cell wall chloroplast concentration cytoplasm diffusion Euglena flagellum leaf cell microscope mitochondria nerve cell nucleus red blood cell root hair cell specialised cell sperm cell unicellular vacuole

Friction and drag

- **Friction** is a force which will slow down a moving object due to two surfaces rubbing on one another
- The greater the friction, the faster an object will slow down, or the greater the force it will need to overcome the force of friction. For example, it is easier to push a block on ice than on concrete, as the ice is smoother and causes less friction
- When an object is moving through a fluid, either liquid or gas, the force which slows it down is known as **drag**
- The fluid particles will collide with the moving object and slow it down, meaning that more force is needed to overcome this
- Both drag and friction are **contact forces** as the two surfaces in friction, and the object and fluid particles in drag, come into contact with one another
- Both drag and friction are forces so they are measured in **Newtons (N)**



A solid moves through a gas.



A solid moves through a liquid.

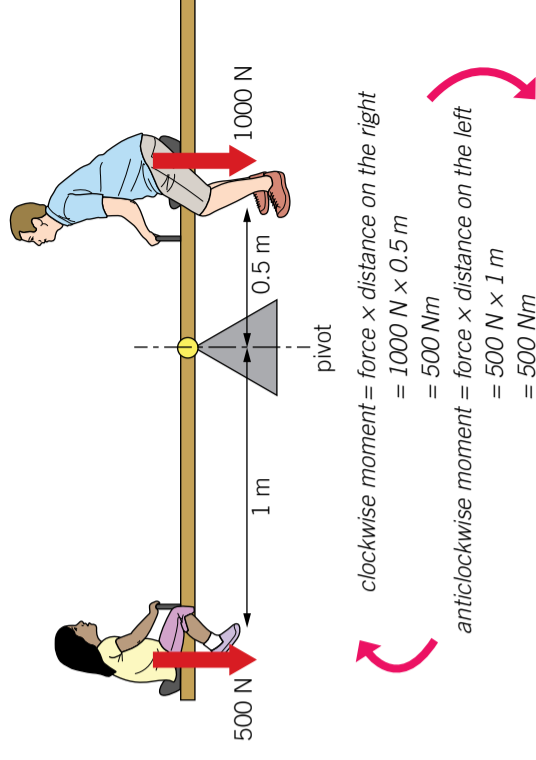
Turning forces

- A **moment** is the turning effect of a force, it is measured in Newton meters
- We can calculate a moment with the equation:
moment (Nm) = force (N) × distance from the pivot (m)

The size of the moment will increase as the distance from the **pivot** or the size of the force increases

When an object, such as a seesaw, is balanced, the clockwise and the anticlockwise moments will be equal and opposite, which is known as **equilibrium**

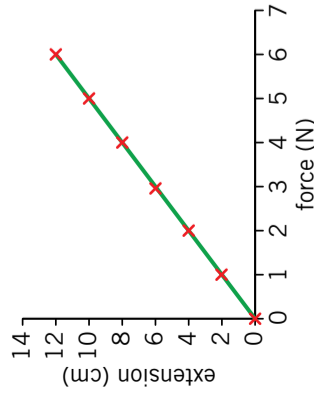
When forces are equal and opposite to each other, there is no **resultant force**



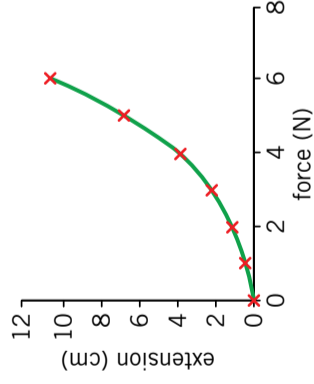
$$\begin{aligned} \text{clockwise moment} &= \text{force} \times \text{distance on the right} \\ &= 1000 \text{ N} \times 0.5 \text{ m} \\ &= 500 \text{ Nm} \\ \text{anticlockwise moment} &= \text{force} \times \text{distance on the left} \\ &= 500 \text{ N} \times 1 \text{ m} \\ &= 500 \text{ Nm} \end{aligned}$$

Hooke's law

- Some objects, like springs, can be stretched, the amount that they stretch is known as their **extension**
- A force needs to be applied to the spring for it to be stretched, we can achieve this by adding masses which exert the force weight
- A spring will continue to stretch until it passes its **elastic limit**
- If an object obeys **Hooke's law** it will have a **linear relationship**: if the force applied to the spring is doubled, the extension will double too
- If an object does not obey Hooke's law, it will not have a linear relationship



This graph shows how the extension of a spring changes as you pull it



This graph shows the relationship between force and extension

Gas pressure

- **Gas pressure** is caused by the particles of a gas colliding with the wall of the container which they are in
- The more often that the particles collide with the wall of the container, the higher the pressure of the gas will be
- Gas pressure can be increased by:
 - Heating the gas so the particles move more quickly and collide with the container with a higher energy
 - Compressing the gas so there are the same amount of particles within a smaller volume meaning that there are more collisions
 - Increasing the amount of particles within the same volume so there are more collisions

Atmospheric pressure is the pressure which the air exerts on you all of the time, nearer the ground there are more particles weighing down on you so the pressure is greater

The higher you go, the smaller the atmospheric pressure, this is because there will be less particles weighing down on you

Pressure in solids

- The pressure which is exerted on a solid is known as **stress**
- The greater the area over which the force is exerted over, the lower the pressure, this is why snowshoes have a large area to prevent you sinking into the snow
- **Pressure** can be calculated using the following equation:

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Pressure in liquids

- Liquids are **incompressible**
- The particles in a liquid are already touching, meaning that there is little space between them to compress
- Liquids will transfer the pressure applied to them, this is seen in hydraulic machines
- As the ocean gets deeper, the pressure will increase, this is because the pressure depends on the weight of the water above
- The greater the number of water molecules above, the higher the pressure will be

Key terms

Make sure you can write definitions for these key terms.

air resistance atmospheric pressure contact force drag elastic limit equilibrium extension friction gas pressure Hooke's law incompressible
 moment newton pressure resultant force stress



Food Preparation and Nutrition

Year 7 - Why are there so many rules in the Food room?

Teacher Assessment:

Can you follow the rules to 'plan, make and evaluate' a Fruit Salad product.

Following 'Health and Safety' practices -

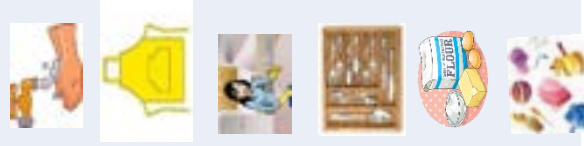
Personal Hygiene is about caring for your body by keeping it clean and healthy. **Food Hygiene** refers to the rules followed when handling, cooking and storing food to prevent food poisoning.

Use the 4c's: prevent cross contamination cleaning chilling cooking

Design a poster to encourage people to follow the 4C's.

Health safety and hygiene

- Tie **h**air back. Tuck **h**ead scarf in.
- Wash **h**ands before preparing any food, after handling raw meat, after sneezing/coughing and after going to the toilet.
- Collect a clean **a**pron, tea towel and dish cloth
- Clean your **t**able/ work surface with antibacterial spray. Prepare your sink and work area.
- Collect a cutlery and food **t**ray
- Collect your **i**ngredients
- Collect and prepare **e**quipment



WWW Cooking and Nutrition

Can follow health and safety practices
Can use knives safely

Can follow a process plan to make a _____

WWW Evaluating

Can judge the sensory characteristics of a food product
Can suggest how the food product can be improved



Food Skills

Knife skills - chopping
Organisation / tidying skills

Techniques

Bridge hold, claw grip, slice, dice, julienne, baton, meat and vegetable preparation
Being able to work hygienically and safely to make food products and ensure all equipment, utensils and work area is left clean and tidy.
Follow personal hygiene rules.

Food Safety

Ensure food is stored appropriately and food probes used to check for safe temperatures.

Weighing and measuring

Demonstrating accurate measurements of liquids and solids.

Use of equipment

Oven, hob, knives, chopping boards, sieve, mixing bowl, measuring jug, spoons. Electric hand equipment eg food mixer

Judge and manipulate sensory properties

Demonstrate how to taste and season during cooking. Self evaluation of food products.

Follow a process plan to make a fruit salad

Plan the making of a quality food product

Product Name:

Fruit Salad

Ingredients:

List the ingredients to be used

Equipment:

List the equipment to be used

Process of Making:

Include a step by step instructions on how to make your food product

- 1) Organise self, unit and washing up area.
- 2) Place ingredients on tray.

Include the use of key words –bridge claw dice slice chop shred grate combine

What is sensory evaluation?

When you eat food you are judging its following characteristics:

Appearance, taste, aroma (smell) and texture (mouth feel). **Sensory descriptors** are words used to describe the characteristics.

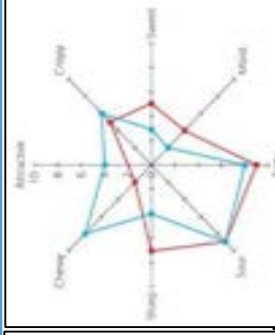


Explain the hygiene and safety hazards in this kitchen.



Evaluate the food product using sensory descriptors

Evaluate the product using a **Star Profile** – These are used to obtain a detailed description of appearance, taste and texture of a food product. Qualities such as mouthfeel, appearance, aroma, flavour and texture are assessed. The results of the profiling test are plotted on a star diagram. This is called a **Star Profile**



Appearance - what does the food look like?	Texture - how does it feel in the mouth?	Taste/smell/flavour
appetising	chewy	acidic
colourful	crispy	bitter
dry	crumbly	bland
flat	crunchy	buttery
golden	doughy	creamy
lumpy	dry	fruity
risen	gooey	herby

Year 7 - Why does it matter what I eat?

The body needs food for the growth and repair of cells, for energy, warmth, protection from illness and keeping the body working properly

A **healthy diet** is a diet that is low in fat, salt, sugar and high in fibre.

A **balanced diet** is a diet that contains all the nutrients in the correct amounts.

Nutrients are the components which make up food

The **Eatwell guide** shows how eating different foods can make a healthy and balanced diet.

A **traffic light food label** is colour-coded and helps you choose healthy foods.

A **traffic light food label** is included so that you can recognise this label and know that the green labels are the healthiest choices.

Knowledge - EWG



Foods high in fat and sugar have been removed from the main segments as these should be eaten less and in small amounts

The average **energy needs** of men and women are included, to remind you that all food and drinks contain energy

Self Assessment:

Can you name the missing nutrients:

? Is needed for growth and repair of cells. ? and ? are needed for energy. ? are needed for insulation. ? and ? are needed for protection.

Describe the eatwell guide?

Why is 150ml of fruit juice and smoothies the maximum recommended in one day?

In Practice:

Make a packed lunch which shows balanced and healthy choices following the healthy eating guidelines or a fruit crumble using high-fibre ingredients

We should **drink 6-8 cups a day**, drinks include

- Water
- Lower-fat milk
- Sugar-free drinks
- Tea and coffee

Fruit juices and smoothies are high in sugar: a maximum of 150ml per day is recommended

Knowledge - Nutrients

Name of the Nutrient	Sources	Function
Carbohydrates (energy giving food)	Rice, potato, wheat, sugar	Provides energy
Fats (energy giving food)	Butter, ghee, milk, cheese	Gives more energy compared to carbohydrates
Vitamins and Minerals (protective food)	Fruits and vegetables	Required for normal growth and development
Proteins (body building food)	Milk, eggs, meat, fish, soybean	Helps in building and repair of body

5 a Day – Fruits & Vegetables

Eat at least 5 portions of a variety of fruit vegetables every day. An adult portion is 80g but children need smaller portion sizes. 1 portion is

roughly the amount you can fit in the palm of your hand.

Eat as many different colours as possible because they all contain different combinations of fibre, vitamins, minerals and other nutrients.

Find out more: www.nhs.uk/live-well/eat-well/why-5-a-day

Year 7 – Why do I cook food?

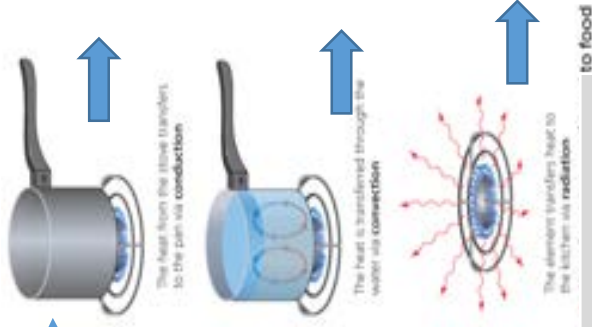
Why do we cook food?

We cook food for many different reasons:

- to destroy harmful bacteria
- to improve the colour, flavour, smell and texture of food
- to make food last longer
- to make the diet more varied.

Heat is transferred to food by three different methods:

- 1 conduction
- 2 convection
- 3 radiation.



With fat –melting butter



With water – poaching eggs



Dry heat -grilling



Dry heat -Baking a cake



With fat – Roast Dinner



With water – Boiling pasta



Knowledge –Cooking food - Why and How?

Using the Cooker

A cooker is made up of 3 parts- the hob, the grill and the oven.

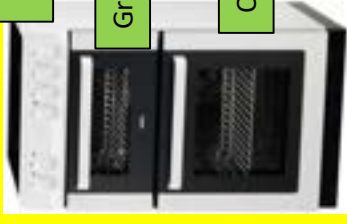
It is important to consider safety points when using a cooker

- Pan handles should be placed inwards on the hob
- The grill should be left open when in use
- Oven gloves should be used to put food in the oven and take it out

Hob

Grill

Oven



Conduction – heat transfers through solid and liquid materials

Convection – heat travels through hot water

Radiation – heat rays directly heat food

Self Assessment - Can you:

Explain 3 reasons why we cook food.

Name 4 foods which can be grilled?

Name 4 foods which can be cooked on the hob?

Name 4 foods which can be cooked in the oven?

In Practice

You will make the following food products in school. Which methods of heat transfer are used?

- Pizza/Toast
- Cheese and Potato Pie
- Muffins

Cooking Methods

Cooking with dry heat

Baking Cooked in the dry heat of the oven

Grilling Cooked by the radiant heat of a hot grill. Direct heat.

Cooking with fat

Stir Fry Cooked quickly over intense heat in a wok with little oil

Shallow Frying Cooked in a shallow pan with hot fat

Deep Frying Cooked submerged in very hot oil

Roasting Cooked in the dry heat of the oven and basted with hot fat

Cooking with water

Boiling Cooked quickly in boiling water – 100C

Poaching Cooked in gentle simmering water – below boiling point

Year 7 – Can I use electric equipment?

Electrical equipment

Used to save human energy and time.

A **blender** saves time when crushing fruit and vegetables to make soups and smoothies

A **food processor** has attachments that can prepare a variety of foods.

- It is useful for cutting and shredding large quantities of vegetables.
- It is very quick and can save time.
- The main uses of a food processor are to chop, make dough such as pastry or pasta, liquidise, puree, grate and slice.

Hand-held mixers mix, whisk, knead or beat

Small quantities of food.

- Electric mixers are much quicker than mixing by hand, and can be used in any bowl or container.
- Mixers are used to whisk cream, and to whisk egg whites to make meringue.
- They can be used to beat mixtures such as cakes
- Some mixers have a dough hook for kneading bread dough

Knowledge – Electrical equipment - Why and How?



Using equipment safely

- Do not use electrical equipment when your hands are wet
- Do not put the electrical equipment in water to wash it up
- Switch off at the socket when you have finished using electrical items
- Wash equipment carefully- If the equipment is sharp, do not place it in a bowl of soapy water where it cannot be seen.
- Do not use metal spoons in a saucepan, as they conduct heat.

Self Assessment –

Which piece of equipment will you use for the following food tasks:

Food Task	Piece of equipment
Chopping nuts	
Making shortcrust pastry	
Making a Victoria sandwich cake	
Making a fruit smoothie	
Blending soup	
Whipping cream	
Shredding cabbage and grating carrots for a coleslaw	

In Practice:

Make a dish which uses a piece of electrical equipment

- **Food processor – Coleslaw**
- **Hand-held mixer – banana cake**
- **Blender – a smoothie**



Grown

Where does our food come from?
All our food comes from **plants** and **animals**

Reared



Caught



Food miles - The distance food travels from Farm To Fork



Some comes by lorry from all over the UK or Europe

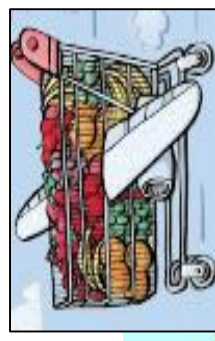
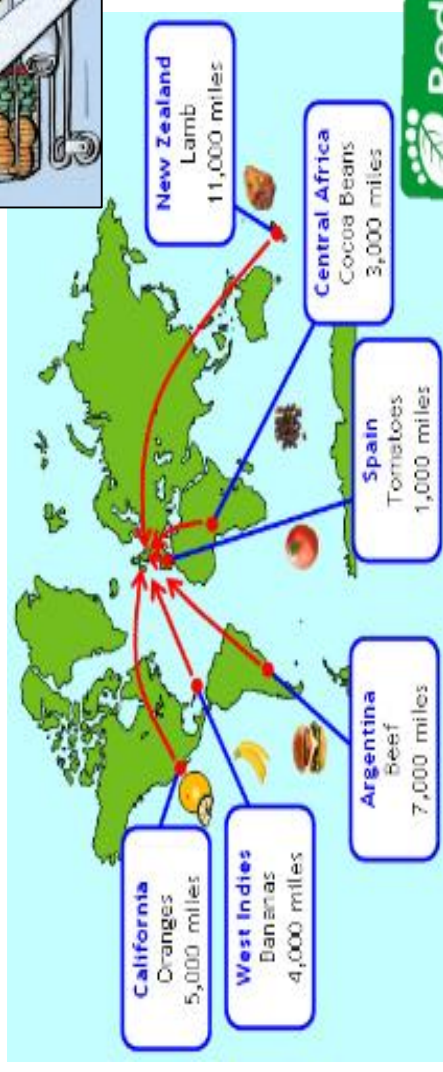
Some is local

Food miles

How far does our food travel to get to us?



Some is flown here from all over the world



The higher the **food miles** the bigger the environmental issues for our planet

(Food)



Technology

(RM)

What are these tools used for?



Vice



Bench hook



Coping saw



Vice



Tenon saw



Try square



Glue gun



Drill bit



File



Pillar drill



Belt sander



Safety glasses

Keywords – check your spelling

These words are commonly misspelt in lessons

Metal	Vice	Design	Tenon saw	Structure
Plastic	Try square	Safety	Glue	Bridge

Keyword	Definition
Grain	The lines along wood that can create a decorative look
Annual rings	Circular rings that indicate the age of tree
Knot	Small dark circles where a branch once grew
Warping	When wood has twisted in different directions
Splitting	When ends of wood have dried too quick and split
Cupping	When a plank of wood curves towards the centre

Traditional wood joints



Butt joint



Dowelled joint



Dovetail joint



Comb/box joint

How can I remember this information?

1. Get someone to quiz you
2. Write out 5 questions using this sheet and then answer them next day to see if you can remember them
3. Cover the keyword and guess the picture or definition

Materials and their Properties: Timbers & Manufactured Boards

HARDWOODS

They are deciduous trees which means that in winter, they lose their leaves.



These trees are broadleaved, bushy and slow growing. Overall they tend to be harder to work with and more expensive than other types of timbers. They are less porous and denser cell structure which makes them harder wearing and less prone to rotting.

TYPES:

Name	Characteristics	Uses
Ash	Flexible, tough and shock resistant. Laminates well. Pale brown/cream.	Sports equipment and tool handles.
Beech	Fine finish, tough and durable. Dense close grain with an	Children's toys, models and furniture.
Mahogany	Easily worked, durable and finishes well. Rich reddish brown in	High end furniture and joinery.
Oak	Tough, hard and durable, high quality finish possible. Light brown with variable grain.	Flooring, furniture, and railway sleepers.
Balsa	Very soft, and lightweight but can snap. Pale cream/white in colour. Unusually fast growing	Prototyping and modelling - especially in model aircraft.

Key questions to consider:

- What tools would I use for specific jobs?
- What health and safety practices would I carry out in a workshop?
- How do I evaluate as I work?
- Which material is best suited for a product and why?

SOFTWOODS

They are coniferous trees which means that they keep their leaves in winter = evergreen.



These trees are tall and 'Christmas tree' tree shaped. Overall they tend to be easier to work with and less expensive than other types of timbers. They are more porous (holes) and if unprotected will rot. They have cones for leaves and grow quickly.

TYPES:

Name	Characteristics	Uses
Larch	Durable, tough and good water resistance. Machines well.	Exterior cladding, flooring, machine mouldings and furniture.
Pine	Lightweight, easy to work but can split.	Interior construction, cheaper furniture and decking.
Spruce	Easy to work, high stiffness to weight ratio.	Construction, furniture and musical instruments.
Redwood	Easy to work and machines well, some rot resistance.	Outdoor furniture, beams, posts and decking.
Cedar	Easy to work, can blunt tools, finishes well and naturally resistant to rot.	Outdoor furniture, fences and cladding for buildings.

- What is a finish and how would I apply it?
- What does a finish do to a product?
- What are the 6R's and why are they important?
- What are the advantages and disadvantages of using wood for products? Discussion point.

MANUFACTURED BOARDS

They are sheets of processed natural timber and adhesives - so they are human made boards



These are usually made from waste wood, low-grade and recycled timber.

Can be covered by thin slices of high quality wood known as veneer to make it look aesthetically pleasing.

Cheaper than natural timber. They come in boards and have no grain.

TYPES:

Name	Characteristics	Uses
MDF	Rigid and stable, good value with a smooth easy to finish surface.	Flat pack furniture, toys and kitchen units.
Plywood	Stable in all directions as alternating layers. Flexible versions available.	Furniture, shelving, toys, interior and exterior construction.
Chipboard	Good compressive strength, not water resistant and prone to chipping on edges.	Flooring, low end kitchen units and worktops.
OSB	Rigid and even strength, good water resistance.	Construction in interior and exterior house building.
Block board	Stable, tough and heavy. Finishes well.	Furniture, doors, shelving and indoor construction.
Hardboard	Flexible, even strength and easily damaged by water.	Furniture and photo frame backing.

ENVIRONMENTAL IMPACT

Wood is considered a **sustainable resource** as new trees can be grown to replace those felled. Here are some **issues and positives** surrounding the impact that wood is having on the environment:



- In many places, wood is being used at a greater rate which means it is unsustainable.
- Illegal felling is leading to deforestation as people aren't replanting trees.
- Deforestation helps with global warming.

- To make sure you are buying sustainable timber, you need to make sure it is approved by the **Forest Stewardship Council** or the **Endorsement of Forest Certification**.



2d Design Key Tools

This sheet aims to give you a brief introduction into the key tools that you will need to use 2d Design efficiently.

The drawing tools are all located on the left-hand side of your screen. At the top of your screen here, you will also find the default 'File,' 'Open' and 'Save' buttons.

Select – to select multiple items hold down SHIFT on the keyboard and click the lines you want

Draw a Circle – click to place the center, and then click to place a point on the circumference.

Draw a Rectangle – click to place a corner, and then click to place the opposite corner.

Deleting – click on a part you want to get rid of and use the DELETE button on the keyboard. To delete part of a shape, click and hold on the DEL ANY icon.

Straight line tool – click to place the start of the line, click to place end of line

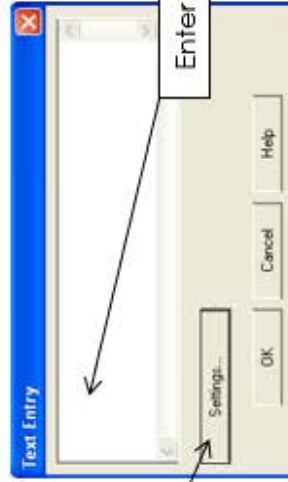
Curved line tool – click to place the start of the line, click to place the first bend, second bend, etc. and right click to finish the line

Fill– select the area you want to fill. 'Are there any islands?' Click 'Yes' if you don't want to fill these in, or 'No' if you do.

Dimensions – Click at the beginning of where you want to measure, then again at the end. This will give you the measurement in millimeters.

Text – click to place text. The box below appears

Click to change font, size etc.



Draw a box, and delete the contents



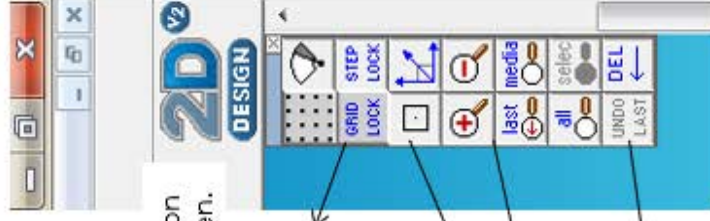
Delete anything

Delete part of a line



Before you start anything, please make sure your page is Setup correctly. Use the options in this toolbar to do this.

Your grid tools are all located on the left hand side of your screen.



Lock to grid – Keep this on to keep your lines straight and measurements accurate

Attach – Use this tool to attach one point directly to another

Zoom in/Out

Undo – Undo or Delete your last move.

Resistant Materials

Bench Vice



Used to hold work securely.
Helps you keep both hands free to work.

Pencil



Every pupil should have one.
Must be sharp to use.
Can be rubbed out.

Tenon Saw



Used to cut work in a straight line.
Used for cutting wood only.

Bench Hook



Used to hold work steady.
Used to help cut either left handed or right handed.
Should be held in vice.



Fretsaw



File



Pillar Drill



Try Square



Coping Saw



Tenon Saw

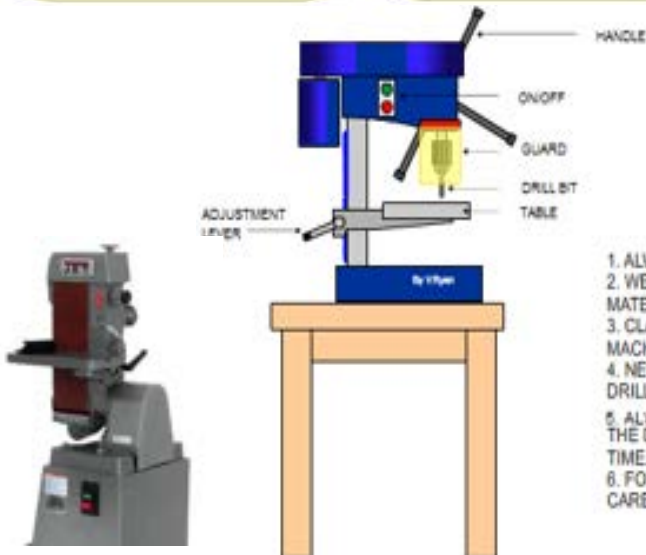


Steel Rule



Chisel

Scroll Saw



SAFETY INFORMATION

1. ALWAYS USE THE GUARD.
2. WEAR GOGGLES WHEN DRILLING MATERIALS.
3. CLAMP THE MATERIALS DOWN OR USE A MACHINE VICE.
4. NEVER HOLD MATERIALS BY HAND WHILE DRILLING.
5. ALWAYS ALLOW THE 'CHIPPINGS' TO CLEAR THE DRILL BY DRILLING A SMALL AMOUNT AT A TIME.
6. FOLLOW ALL TEACHER INSTRUCTIONS CAREFULLY.



DISC-BELT SANDER

1. Keep your hands and fingers away from the abrasive surface.
2. Be sure the abrasive disc or belt is secure and in place.
3. Do not use the edge of a disc or belt.
4. Hold stock firmly against the stop fence or miter gage.
5. Always wear eye protection.
6. Feed board against disc or belt on the "down side."
7. Keep wood moving against the abrasive surface.

Work Practices

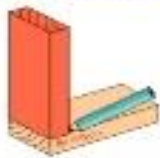
- Make turns slowly; do not make sharp turns with a wide blade; use a narrow blade for sharp turns.

Potential Hazard

- Contact with the blade

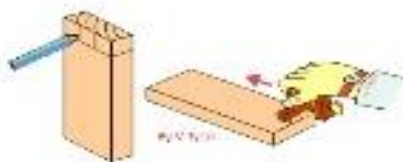
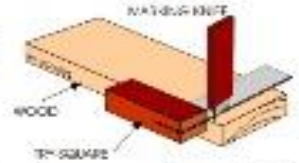
Purpose: Scroll saws are useful for precision-cutting intricate curves and patterns on thin stock. They have thin blades that move rapidly up and down through the opening in the saw table. The blade is held in upper and lower chucks that pull it tight and keep it from bending. A hold-down adjusts to the thickness of the wood being cut.

MARKING OUT A FINGER JOINT – on the first piece of wood



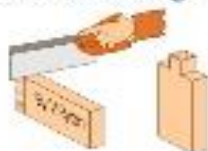
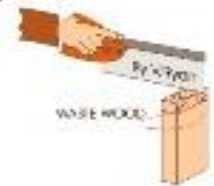
1. The two sides to be jointed are arranged as shown in the diagram. A pencil is used to mark the thickness of the material.

2. A marking knife and a tri square are used to mark all the way round the material. It is possible to use only a pencil but a marking knife is more precise and it has the advantage of cutting the wood fibres. This means when a saw is used to cut the joint the surface of the wood is less likely to split.

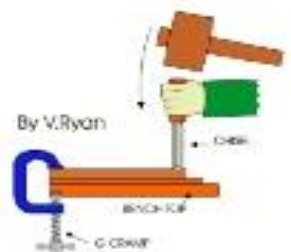


3. The fingers of the first joint are marked out using a pencil and a tri square/steel rule. The traditional way of marking the fingers involves the use of a marking gauge. Using a marking gauge to mark the fingers is difficult especially if you have not used this type of tool before. The waste wood should be shaded with a pencil. This will help you avoid cutting away the wrong part of the joint.

4. The wood is placed in a vice. It must be vertical so that the tenon saw is always cutting down in a straight line. Avoid putting the wood in the vice at an angle as it will be virtually impossible to use the saw accurately. When cutting, it is important to cut on the waste wood side of the line. It should still be possible to see the marking out lines after the saw has been used.



5. The wood is then turned sideways in a vice and the waste material is finally removed using a tenon saw.



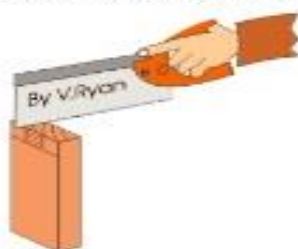
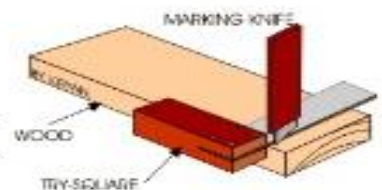
6. If the joint is slightly inaccurate a firmer or bevel edged chisel can be used to correct it. A G clamp is used to hold the wood firmly. Scrap wood is placed underneath to protect the surface of the bench from the chisel. The first side of the joint should now be complete.

MARKING OUT A FINGER JOINT – on the second piece of wood



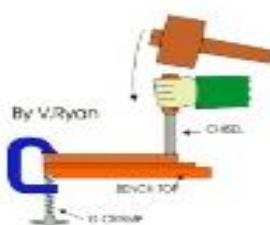
7. The first side is placed above the second side of the joint and the joint is marked out. Again a pencil is used although the traditional tool would be a marking knife.

8. Marking out the joint when both pieces are together can be difficult but a steel rule or a tri square can be used to straighten any lines. Again, the waste wood must be clearly identified.



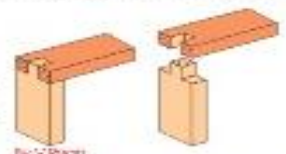
9. The tenon saw is used to cut down the lines marking the middle section of the joint. The wood must be secured in the vice in the same way as before. Remember, the saw is used to cut straight down the joint, on the waste side of the pencil line.

10. A coping saw is used to remove the waste wood. Again the wood is secured in the vice.



11. If the joint is slightly inaccurate a firmer or bevel edged chisel can be used to correct it. A G clamp is used to hold the wood firmly. Scrap wood is placed underneath to protect the surface of the bench from the chisel. The second side of the joint should now be complete.

12. The joint should fit together accurately. If the stages outlined above have been carried out carefully.



2d Design Key Tools

This sheet aims to give you a brief introduction into the key tools that you will need to use 2d Design efficiently.

The drawing tools are all located on the right hand side of your screen. At the top of your screen here, you will also find the default 'File,' 'Open' and 'Save' buttons.

Select – to select multiple items hold down SHIFT on the keyboard and click the lines you want

Draw a Circle – click to place the center, and then click to place a point on the circumference.

Draw a Rectangle – click to place a corner, and then click to place the opposite corner.

Deleting – click on a part you want to get rid of and use the DELETE button on the keyboard. To delete part of a shape, click and hold on the DEL ANY icon.

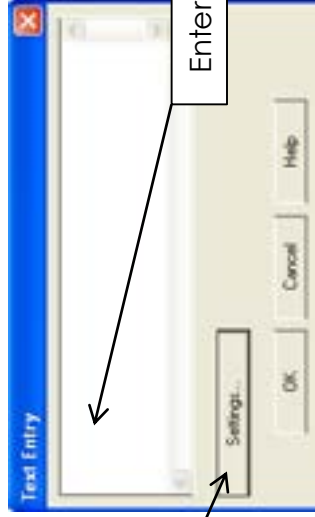
Straight line tool – click to place the start of the line, click to place end of line

Curved line tool – click to place the start of the line, click to place the first bend, second bend, etc. and right click to finish the line

Fill– select the area you want to fill. 'Are there any islands?' Click 'Yes' if you don't want to fill these in, or 'No' if you do.

Dimensions – Click at the beginning of where you want to measure, then again at the end. This will give you the measurement in millimeters.

Text – click to place text. The box below appears



Click to change font, size etc.

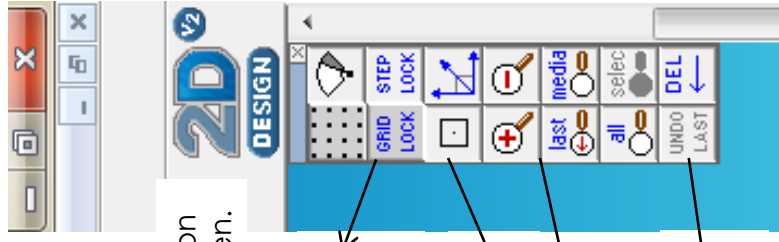
Draw a box, and delete the contents

Delete anything

Delete part of a line



Before you start anything, please make sure your page is Setup correctly. Use the options in this toolbar to do this.



Your grid tools are all located on the left hand side of your screen.

Lock to grid – Keep this on to keep your lines straight and measurements accurate

Attach – Use this tool to attach one point directly to another

Zoom in/Out

Undo – Undo or Delete your last move.

Materials and their Properties: Timbers & Manufactured Boards

HARDWOODS

They are deciduous trees which means that in winter, they lose their leaves.



These trees are broadleaved, bushy and slow growing. Overall they tend to be harder to work with and more expensive than other types of timbers. They are less porous and denser cell structure which makes them harder wearing and less prone to rotting.

TYPES:

Name	Characteristics	Uses
Ash	Flexible, tough and shock resistant. Laminates well. Pale brown/cream.	Sports equipment and tool handles.
Beech	Fine finish, tough and durable. Dense close grain with an	Children's toys, models and furniture.
Mahogany	Easily worked, durable and finishes well. Rich reddish brown in	High end furniture and joinery.
Oak	Tough, hard and durable, high quality finish possible. Light brown with variable grain.	Flooring, furniture, and railway sleepers.
Balsa	Very soft, and lightweight but can snap. Pale cream/white in colour. Unusually fast growing	Prototyping and modelling - especially in model aircraft.

SOURCE/ORIGIN

Timber comes from **trees** - this is known as the source or origin of the material. This is how we change into timber.



1. When trees are cut down, this is known as **felling**. This can be through machine or chain saws, just like the image.

SOFTWOODS

They are coniferous trees which means that they keep their leaves in winter = evergreen.



These trees are tall and 'Christmas tree' tree shaped. Overall they tend to be easier to work with and less expensive than other types of timbers. They are more porous (holes) and if unprotected will rot. They have cones for leaves and grow quickly.

TYPES:

Name	Characteristics	Uses
Larch	Durable, tough and good water resistance. Machines well.	Exterior cladding, flooring, machine mouldings and furniture.
Pine	Lightweight, easy to work but can split.	Interior construction, cheaper furniture and decking.
Spruce	Easy to work, high stiffness to weight ratio.	Construction, furniture and musical instruments.
Redwood	Easy to work and machines well, some rot resistance.	Outdoor furniture, beams, posts and decking.
Cedar	Easy to work, can blunt tools, finishes well and naturally resistant to rot.	Outdoor furniture, fences and cladding for buildings.



2. Branches are cut off and the logs are stored until they are transported to a **sawmill**.



3. When at the sawmill, machines such as **band saws** and **circular saws** are used to create boards/planks.

MANUFACTURED BOARDS

They are sheets of processed natural timber and adhesives - so they are human made boards



These are usually made from waste wood, low-grade and recycled timber.

Can be covered by thin slices of high quality wood known as veneer to make it look aesthetically pleasing.

Cheaper than natural timber. They come in boards and have no grain.

TYPES:

Name	Characteristics	Uses
MDF	Rigid and stable, good value with a smooth easy to finish surface.	Flat pack furniture, toys and kitchen units.
Plywood	Stable in all directions as alternating layers. Flexible versions available.	Furniture, shelving, toys, interior and exterior construction.
Chipboard	Good compressive strength, not water resistant and prone to chipping on edges.	Flooring, low end kitchen units and worktops.
OSB	Rigid and even strength, good water resistance.	Construction in interior and exterior house building.
Block board	Stable, tough and heavy. Finishes well.	Furniture, doors, shelving and indoor construction.
Hardboard	Flexible, even strength and easily damaged by water.	Furniture and photo frame backing.

ENVIRONMENTAL IMPACT

Wood is considered a **sustainable resource** as new trees can be grown to replace those felled. Here are some **issues and positives** surrounding the impact that wood is having on the environment:



- To make sure you are buying sustainable timber, you need to make sure it is approved by the **Forest Stewardship Council** or the **Endorsement of Forest Certification**.



- In many places, wood is being used at a greater rate which means it is unsustainable.

- Illegal felling is leading to deforestation as people aren't replanting trees.

- Deforestation helps with global warming.



Art (Textiles)

Decorative techniques:

Reverse Applique



Applique



Stamp printing



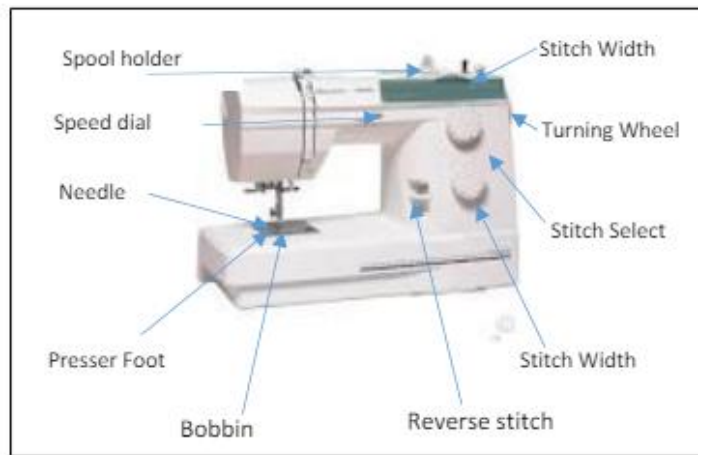
Hand Embroidery



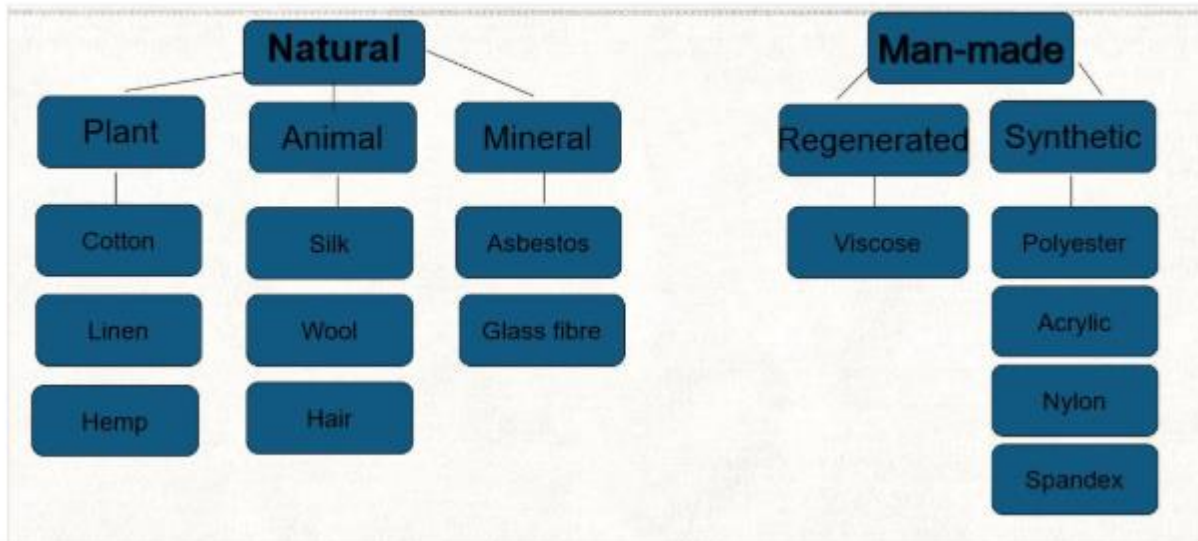
Fabric pens



Transfer print



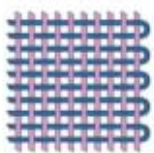
Classification of fibres



Suggested practical task

Look at 5 Textiles items to check for their construction and fabric type. See how these factors make a difference to the fabric.

Fabric construction.



Woven



Knitted



Bonded/ non-woven

Key word	Description	Image
Fibre	Fine hair like structure	
Yarn	Fibres which are twisted together to create a yarn/ thread	
Fabric	Cloth made from fibres or yarns	

Year 7 Textiles -Knowledge Organiser

Key Words and Definitions:					
Pins	a piece of metal with a point at one end for holding fabric together	Stitch	A thread that passes through fabric	Tie dye	Resist method of dyeing- created by tying string/ elastic bands around areas of the fabric.
Scissors/shears	Used for cutting fabric	Sew/Sewing	Done by machine or hand to join fabric or add decoration	Applique	Applying 1 fabric to another to create a design
Sewing Machine	A machine used to produce stitches in fabric	Tacking	Temporary stitching to hold fabric in place	Reverse Applique	cutting away a layer of fabric to reveal a shape appliquéd underneath
Needle	a piece of metal with a point at one end and a hole or eye for thread at the other, used in sewing	Hem	The finishing off at the edge of fabric	Embroidery	Decorative stitching by hand or machine
Thread	a strand of cotton, used in sewing or weaving	Seam	Joining two fabrics together	Design	A drawing to show the look of your idea
Tailors chalk	Chalk used to mark fabric	Seam Allowance	Distance between the edge of fabric and the stitching line (1.5 cm)	Annotation	Labelling to explain your design
Fabric	Cloth produced by weaving or knitting textile fibres.	Pattern	A template used to cut out the fabric	Evaluation	Making a judgement about your product
Unpicker	A small piece of equipment with a sharp pointy end used to unpick stitches	Components	Buttons, zips, sequins	Specification	A list of requirements that a product must meet

Properties and characteristics of fibres and fabrics.

Fabrics and fibres behave in different ways this can be good or bad thing, the way they behave is known as properties and characteristics.

Good properties- strong, absorbent, comfortable, hard wearing, drapes well, does not crease, cheap, environmentally friendly.

Bad properties- expensive, creases easily, shrinks, burns easily, bobbles, itchy, weak when wet, takes a long time to dry.

SELF QUIZZING – Apply your knowledge by seeing if you can complete the table below

Natural Fibres	Properties
Cotton	
Wool	
Silk	

Year 7 Textiles -Knowledge Organiser

Key Words and Definitions:					
Pins	a piece of metal with a point at one end for holding fabric together	Stitch	A thread that passes through fabric	Tie dye	Resist method of dyeing- created by tying string/ elastic bands around areas of the fabric.
Scissors/shears	Used for cutting fabric	Sew/Sewing	Done by machine or hand to join fabric or add decoration	Applique	Applying 1 fabric to another to create a design
Sewing Machine	A machine used to produce stitches in fabric	Tacking	Temporary stitching to hold fabric in place	Reverse Applique	cutting away a layer of fabric to reveal a shape appliquéd underneath
Needle	a piece of metal with a point at one end and a hole or eye for thread at the other, used in sewing	Hem	The finishing off at the edge of fabric	Embroidery	Decorative stitching by hand or machine
Thread	a strand of cotton, used in sewing or weaving	Seam	Joining two fabrics together	Design	A drawing to show the look of your idea
Tailors chalk	Chalk used to mark fabric	Seam Allowance	Distance between the edge of fabric and the stitching line (1.5 cm)	Annotation	Labelling to explain your design
Fabric	Cloth produced by weaving or knitting textile fibres.	Pattern	A template used to cut out the fabric	Evaluation	Making a judgement about your product
Unpicker	A small piece of equipment with a sharp pointy end used to unpick stitches	Components	Buttons, zips, sequins	Specification	A list of requirements that a product must meet

Decorative techniques:

Reverse Applique



Applique



Stamp printing



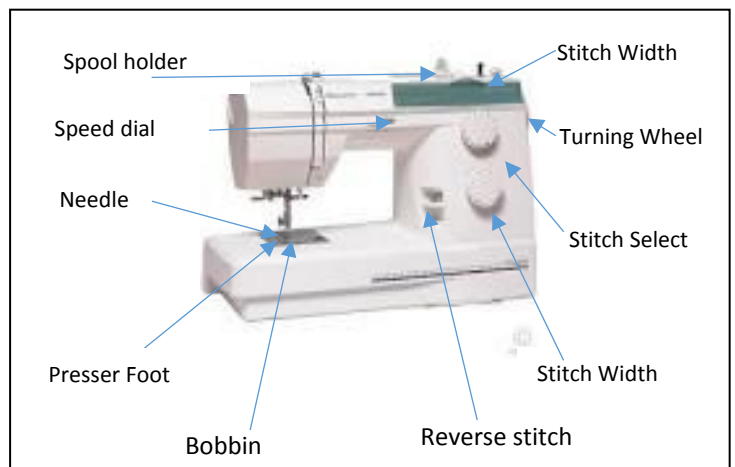
Hand Embroidery



Fabric pens



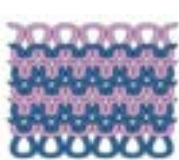
Transfer print



Fabric construction.



Woven



Knitted



Bonded/ non-woven

Health and safety

Iron:

NO talking whilst using iron
 No distracting others when using iron
 No touching base of iron either when on or off
 Do not use iron around water
 Unplug iron when not in use
 Stand iron on platform when not in use
 Do not walk around with the iron

Sewing Machine:




No talking whilst using sewing machine
 No distracting others when using sewing machine
 Sew at a safe speed
 Turn off machine if a problem occurs
 Never try to mend machine
 Never use sewing machine unless supervised by a teacher

Equipment:

Do not stick pins or needles in skin
 Do not point or wave around scissors
 Do not point or wave around unpicker
 Do not use dyes or chemicals without permission

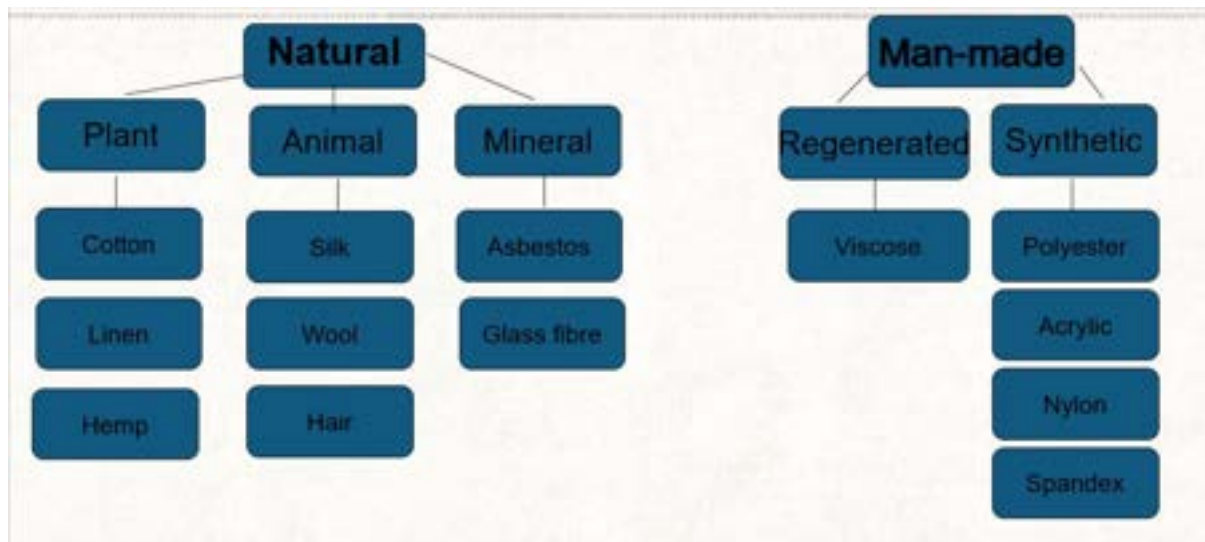
General:

Do not run in classroom
 Do not act dangerously
 Follow instructions given by teacher
 No shouting

Key word	Description	Image
Fibre	Fine hair like structure	
Yarn	Fibres which are twisted together to create a yarn/ thread	
Fabric	Cloth made from fibres or yarns	



Classification of fibres



Properties and characteristics of fibres and fabrics.

Fabrics and fibres behave in different ways this can be good or bad thing, the way they behave is known as properties and characteristics.

Good properties- strong, absorbent, comfortable, hard wearing, drapes well, does not crease, cheap, environmentally friendly.

Bad properties- expensive, creases easily, shrinks, burns easily, bobbles, itchy, weak when wet, takes a long time to dry.

Properties and use of natural fibres

Natural Fibre	Properties	Uses
Cotton	Strong, absorbent, cool to wear, hard wearing, creases easily, easy to care for	Clothing, soft furnishings
Wool	Warm, absorbent,	Warm outer wear e.g. jumpers, carpets, blankets, soft furnishings
Silk	Comfortable to wear, soft, absorbent, expensive, natural sheen	Luxury clothing and furnishing