

Name and Tutor group:



# Year 7 Knowledge Organiser

## Term 1

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## CORSHAM CHARACTER

### INTELLECTUAL VALUES

The pursuit of truth,  
knowledge and  
understanding.

Be reflective. Be curious. Be  
open-minded. Be creative.



### PERFORMANCE VALUES

Maximum effort, maximum  
focus.

Be resilient. Always Persevere.  
Contribute to Teamwork.  
Be ambitious.

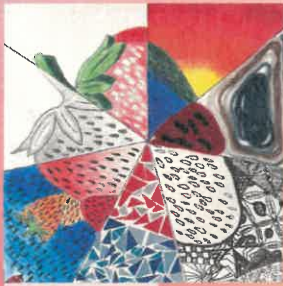


# DREAM BELIEVE ACHIEVE

# Knowledge Organiser – Year 7 Art

## FORMAL ELEMENTS

### EXAMPLES OF FINAL OUTCOMES:



### YOU WILL LEARN:

The 7 different elements of art. This will help you better understand how art works.

You will then produce your own final outcome using all 7 elements.

### Why am I learning this?

The foundation skills in this project will enable you to tackle the varied concepts, artists, techniques and processes throughout all of year 7, 8 and 9. You will build on your knowledge and skills with each project as they increase in difficulty, enabling you to express yourself in a confident way.

### Keywords

Line	A line is a mark made on a surface that joins different points. Lines can vary in length, width, direction and shape.
Tone	Tone refers to how light or dark something is. Tones could refer to black, white and the grey tones between. It could refer to how light or dark a colour appears.
Colour	Colour in art refers to the way we see different shades and tones in pictures or paintings.
Shape	A shape is an area enclosed by a line. It is 2 dimensional and can be geometric or organic.
Form	Forms are 3 dimensional shapes. They occupy space, like people!
Space	Space in a work of art refers to a feeling of depth or three dimensions. It can also refer to the artist's use of the area within the picture plane.

## Homework tasks:

Tick when complete

1. Create a piece of artwork using only ONE of the formal elements
2. Choose one of formal elements and create an information page on it.

Marking Your Work – Meeting Expectations

**NYM**

**NOT YET MET = Yellow Dot**

**M**

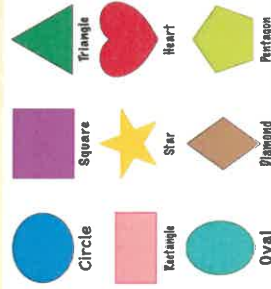
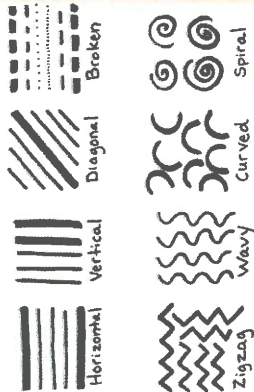
**MET = Green Dot**

**EX**

**EXCEEDING = Blue Dot**

## HOW WELL AM I DOING?

Look out for coloured dots in your book by your teacher to show where you are at! Check your curriculum expectations sheet!



Year 7 Progress – Formal Elements – Term 1	
Name:	
TARGETS: Not Yet Met, Met, Exceeded (NYM/M/E) or Exceeded (NYM/M/E) or Exceeded (NYM/M/E)	
LINE	You have used a good variety of different types of line and the direction is well used and well presented
COLORS	You have clearly understood the differences between warm and cool colours and have understood where to apply them
TONE	You have blended your colours together well and there are no areas that are too dark or too light
TEXTURE	You have clearly understood the how to create different tones in this section and where to apply them
SHAPE	You have successfully applied the lesson paper to create interesting shapes in your work
FORM	You have clearly understood the concept of space in art and applied it well to your work
SHAPE	You have experimented with different shapes and applied your work well
FORM	You have clearly understood how a 3D object can have shape form
FORM	You have clearly demonstrated form in your artwork
End of Project Overall Target:	
Teacher Comments:	

## Year 7 Computing – Online safety

### Keywords for types of e-safety :

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

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

### How do you stay safe on the Internet?

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

### Types of Cyberbullying:

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

### Ways to Prevent Cyberbullying:

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

**DRAMA – Year 7 term 1.**

Components  
**1, 2 AND 3**

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

**VOCALS**

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


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


**Volume:** The loudness or quietness of your voice.  


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


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


**Pace:** The speed that you speak at.  


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


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


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


**PHYSICALITY**

**Direction:** The position you face or move in.  


**Gait:** The way that you walk.  


**Tension:** How tightly you are holding your muscles.  


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


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



**Pace:** The speed that you move at.  


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


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


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


How could you use vocal skills to communicate subtle changes to a character's emotions?  
How can eye contact change the meaning communicated?  
How could you use physical skills to communicate subtle changes to a character's emotions?  
How might adding a pause change the meaning of a line?  
What makes a successful performance?



# Year 7 Food and Nutrition- Knowledge Organiser

Nutrient/ Food group	Functions - Why do we need it?	Sources - Where they are found
Carbohydrates	These give us energy. Sugary ones give us quick release energy. Starchy ones give us slow release.	Bread, rice, pasta, potatoes
Protein	Needed for the growth and repair of our bodies and can also be used for energy.	Meat, fish, dairy products, tofu, soya, Quorn, nuts, seeds, lentils
Fat	These keep us warm, protect us and provides our bodies with energy	Butter, oil, processed foods e.g. crisps, chips, chocolate, cake.
Water	Keeps us hydrated and keeps our body's working properly.	Fruit and vegetables, water, fruit juices, milk.
Vitamins	These are needed generally to keep us healthy. They allow all the chemical reactions in our body and protect us from diseases.	Fruit, vegetables, cereals, dairy products
Minerals	Helps build bones and teeth and allow muscles to work properly.	Green vegetables, dairy products and red meat
Fibre	These are needed to keep our digestive system working (help us go to the toilet) and helps to fill us up.	Wholegrain cereals, brown rice, pasta, bread, fruit and vegetables



Preparation Boards	
	Red
	Yellow
	Blue
	Green
	Brown
	White
Type of food	
Raw meats	Raw fish
Cooked meats	Fruit and salad
	Vegetables
	Bakery and dairy

- Keywords**
- Hygiene
  - Cross - Contamination
  - Safety
  - Healthy eating
  - Bacteria
  - Nutrient
  - Food Group
  - Eatwell Guide

**What is Energy balance**

Energy in = energy out

**Why is it important to keep it balanced?**

To maintain a healthy weight and allow the body to stay healthy and work efficiently






The 4C's	Description
<b>Cooking</b>	Always cook food properly. Check that food is cooked in the centre.
<b>Chilling</b>	Store food safely between 0 and 5°C
<b>Cleaning</b>	Always wash and dry your hands and equipment properly. Keep everything clean.
<b>Cross Contamination</b>	Wash your hands after touching raw foods. Keep raw and cooked foods separate.

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

Oils and Spreads	Fruits and Vegetables	Meat, eggs and pulses	Starchy foods	Dairy foods
Butter, Vegetable oil, Margarine	Apples, Bananas, Oranges, Pepper, Carrots, Cabbage, Spinach, Frozen peas	Chicken, fish, Lentils, Chickpeas, beans	Bread, Potatoes, Pasta, Rice, Cereals	Milk, Cheese, Yogurt

# Yr 7 Graphics – Healthy Bar Wrapper DESIGN AND TECHNOLOGY

## Tools, Techniques, Materials and Equipment

<b>Paper</b>		A compliant material made from wood pulp.
<b>Board</b>		Used for packaging, model making, photography and greeting cards.
<b>Colour Rendering</b>		A colour technique used for professional finish in DT.
<b>Scoring</b>		A method to create accurate folds.
<b>Scissors / guillotine</b>		To accurately cut paper.

## Paper and Board

Papers and boards are made from wood pulp and are converted in a paper mill. Paper is measured in Grams Per Square Metre (GSM). Board thickness is quoted in microns or Grams Per Square Metre (GSM).



## Packaging

- To protect products, especially in transport
- To promote product using attractive fonts, logos and designs.
- To present the product.
- To place the product.
- To provide important information.



## Keywords

- Graphics
- Communication
- Commercial
- Innovative
- Onomatopoeia
- Product
- Branding
- Logos
- Font
- Design Fixation
- Collaboration
- Paper
- Packaging
- Design Approach
- Wrapper
- Product information
- Template



A0	A1	A4	A5
	A2		



**Paper finishes:**  
 Off set lithography  
 Embossing  
 Varnish

### Health and Safety in DT:

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




### What is good design?

- Clear Ideas
- Annotations
- Measurements
- Content
- Presentation
- Balance

### Maths in DT:

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

# Year 7 / 9 D&T RESISTANT MATERIALS

# UCD & Modelling: Playgrounds

## Tools and Equipment

### Measuring and marking

Steel rule



An accurate tool for measuring and marking out.

Set square



A ruler to ensure you measure and mark accurate 45 / 90 degree angles.

Template



A template is a tool used to mark out shapes repeatedly

## Card shaping and adhesives

Slot



A joining technique to join card.

Curve cut



Kerf cutting (partial cuts) will ensure a smoother curve in the card.

Tabs



Tabs help to join the card components together.

Hot glue gun

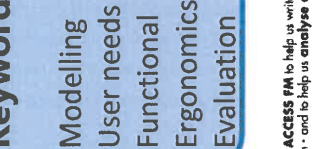


An adhesive which joins card.

Masking tape



A temporary adhesive which joins card / paper.



**Keywords**

Modelling Iterative designs UCD  
User Needs Reformulate Creativity  
Functional Innovative Anthropometrics  
Ergonomics Social Client Testing  
Evaluation

## Anthropometrics

**Anthropometrics** is the collection of maximum and minimum measurements of a target market. The data can be used to work out the dimensions of a product.

## Ergonomics

**Ergonomics** Testing and analysing how a person interacts with the product can improve its **functionality** and how it fits into its surroundings.

## Maths in DT:

Multiplication / Divide  
Add / Subtract  
Measurement conversion  
Ratios / Percentages

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

**ACCESS FM - Helpsh**



**A** is for **Aesthetics**

**Aesthetics** means what does the product look like? What is the 'Colour' 'Shape' 'Texture' 'Form' 'Appearance' 'Feel' 'Weight' 'Size'?



**C** is for **Cost**

**Cost** means how much does the product cost to buy? How much does it cost to buy? How much do the different materials cost? Is it a good value?



**C** is for **Customer**

**Customer** means who will buy the product? Who is your product? Who will buy your product? Who are the 'Age' 'Gender' 'Who are their 'Demographics' 'Interests'?



**E** is for **Environment**

**Environment** means will the product affect the environment? How will the product affect the environment? How will the product affect the environment? How will the product affect the environment? How will the product affect the environment?



**S** is for **Size**

**Size** means how big or small is the product? What is the size of the product in millimetres / centimetres / metres? How big is the product? How small is the product? How big is the product? How small is the product?



**S** is for **Safety**

**Safety** means how safe is the product when it is used? Will it be safe for the customer to use? Could they get hurt? What are the risks? How can we make it safer? How can we make it safer? How can we make it safer? How can we make it safer?



**F** is for **Function**

**Function** means what is the product made out of? What materials is the product made from? Why were these materials chosen? How can we improve the product? How can we improve the product? How can we improve the product? How can we improve the product?



**M** is for **Material**

**Material** means what is the product made out of? What materials is the product made from? Why were these materials chosen? How can we improve the product? How can we improve the product? How can we improve the product? How can we improve the product?

## Cutting

Craft knife



A tool for precision cutting. This tool is used for accurate cutting of paper and card. Can cut in a straight or curved line.

Paper scissors



A tool for cutting paper or board.

## Materials

Single corrugated card



Corrugations make the card strong.

Card



A compliant material which comes in a variety of colours .

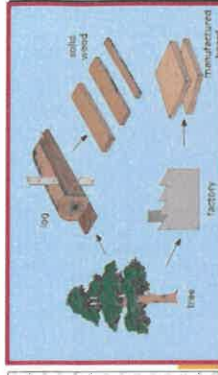
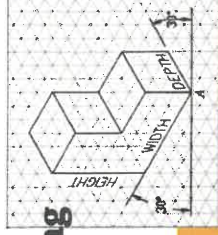
## Health and Safety in DT:



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# KS3 YEAR 7 D&T RESISTANT MATERIALS

# Isometric Drawing



## Tools and Equipment

### Measuring and marking

Steel rule



An accurate tool for measuring and marking out

Try square



A tool used to check right angles on wood or plastic

Template



A template is a tool used to mark out shapes repeatedly

### Shaping and finishing

Metal file



Used to shape or smooth wood, metal or plastic

Glass paper



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

Disc sander



A machine used to smooth the edges of materials

## Softwood

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

## Hardwood

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

Hardwoods	Softwoods
Beech	Pine
Oak	Spruce
Ash	Cedar
Teak	Fir

Comes from deciduous trees  
This is a broad-leaved tree with all its leaves in the winter

Comes from evergreen trees  
This type of tree has all its leaves in the summer and sheds its leaves in the winter

## Manufactured board

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



## Keywords

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

## Cutting

Tenon saw



A hand saw with a stiff back used to cut straight lines in wood – back saw action

Coping saw



A hand saw used to cut complex shapes in wood and plastic

Scroll saw



A machine saw used to cut complex shapes in wood and plastic

Bench hook



Held against the front edge of a bench or table to support work

Pillar drill



A machine used to make holes in materials

Laser cutter



CAM: Laser cutting is the use of a high-powered laser to cut, etch and engrave your material

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

**A** is for **Aesthetics**

**C** is for **Cost**

**C** is for **Customer**

**E** is for **Environment**

**S** is for **Size**

**S** is for **Safety**

**F** is for **Function**

**M** is for **Material**

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- Ratios
- Percentages
- Surface area

## Traditional wood joints:

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

ACCESS FM - Helpsheet

Access FM is a software package that helps you to create a specification for a design and to help you analyse and describe an already existing product.

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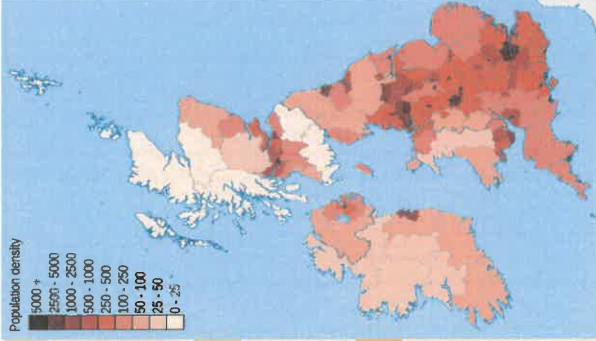


### UK Characteristics



Most mountains are located in the **north and west**, such as Wales and Scotland. These areas have **few roads** and **settlements** but beautiful scenery. – Sparsely populated. **South and east** of the UK is **flat** with a few hilly areas. These areas are suited for **settlements, roads** and **railways** – Densely populated. Rivers flow from mountainous areas down to the sea.

### UK Population Distribution



#### Low

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

#### High

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

#### Very High

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

### Latitude and Longitude

The longitude and latitude of Corsham is 51N 2W

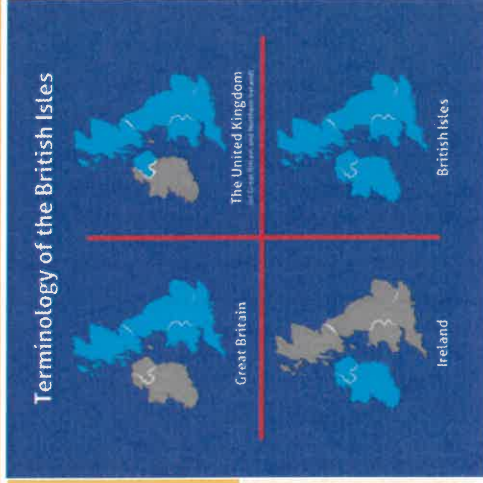
#### Lines of Latitude

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

#### Lines of Longitude

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

### What is the UK



**England**  
Capital: London  
Population = 54m

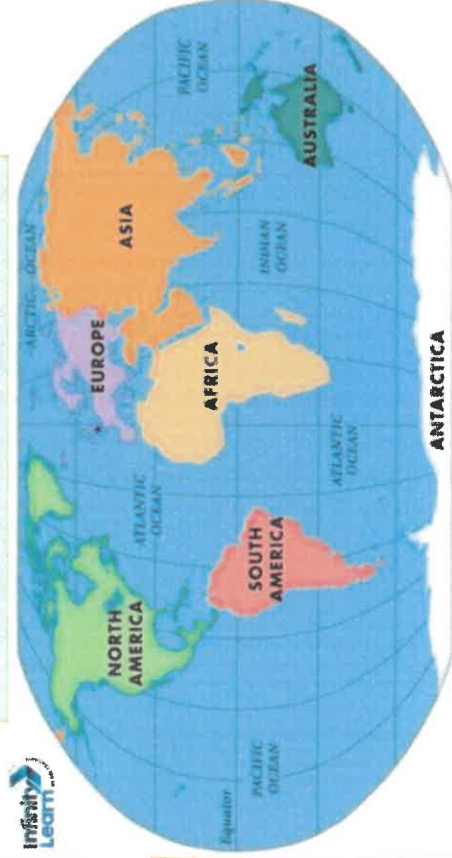
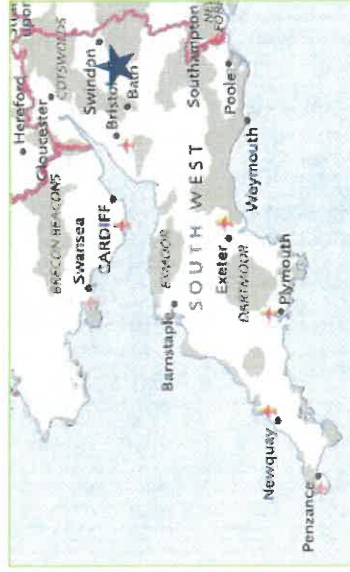
**Wales**  
Capital: Cardiff  
Population = 3.2m

**Scotland**  
Capital: Edinburgh  
Population: 5m

**Northern Ireland**  
Capital: Belfast  
Population = 1.9m

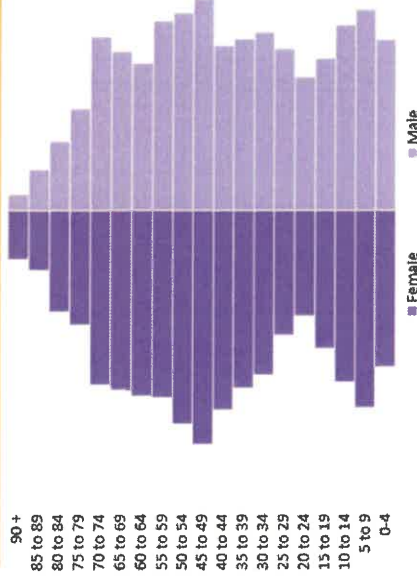


## Year 7 Topic 1: Where on Earth is Corsham?



### Population in the UK

The UK population is 67 million and still rising. It is predicted to reach 70 million by 2030. Population of Corsham is 10,880.



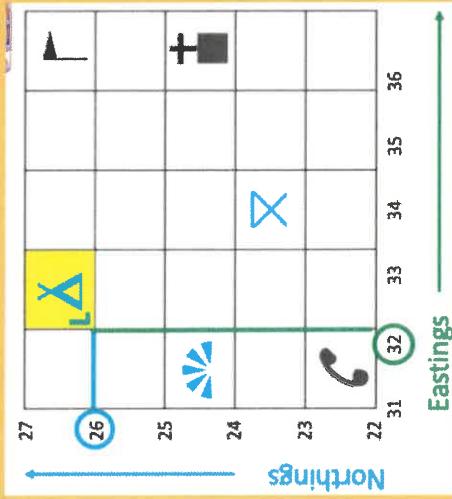
### Geographic key words this topic:

By the end of this topic you should be able to explain these words:

- Geography
- Country
- Continent
- Ocean
- Upland
- Lowland
- Physical map
- OS map
- Bar chart
- Population pyramid
- Capital city
- Major city
- Rural
- Urban
- Economy
- Social
- Environmental

## 4 figure grid references

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



The first two numbers give the eastings.

32 26

The second two numbers give the northings.

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

## Atlas Skills

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

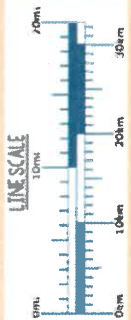


## Scale and Distance

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

### Line Scale

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



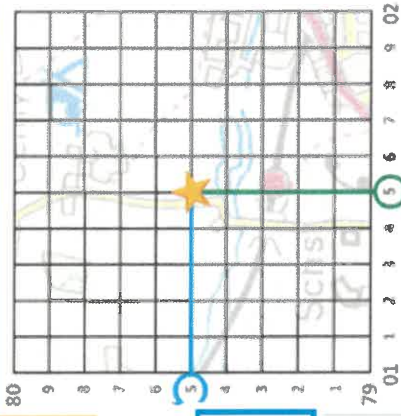
### Word Scale

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

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

## 6 Figure Grid references

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



Example:

015 795

The first three numbers give the easting which includes the number of lengths.

The last three numbers give the northing which includes the number of lengths.

## Yr7 Term 1: Map skills

### Height and Relief

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



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

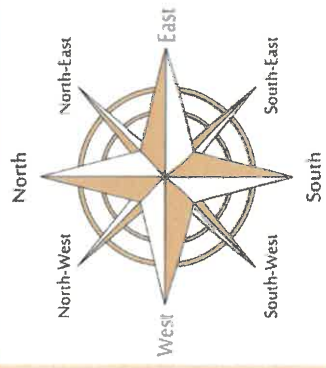
The exact height of a place is measured and shown in dots.

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

Remember within each square, 5 is always ½ way along or up.

## Compass points

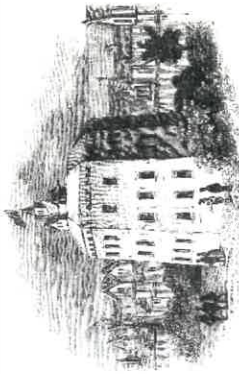
Compass points are needed when describing the location of places.



## Enquiry: How similar was Medieval and Tudor life?

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

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



**Furthering learning**  
Want to find out more about life for ordinary people?



## History – Year 7 Knowledge Organiser Topic 1

### Key individuals



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



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



**John Blanke.** Worked for Henry VIII as a trumpeter. He asked for a raise and was successful!



**William Shakespeare.** Wrote and performed plays during Elizabeth I's Reign including Romeo and Juliet and A Midsummer Night's Dream

### Key vocabulary:

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

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

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

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

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

**Pilgrimage:** journey to a holy place to please God.

**Pope:** head of the Catholic Church

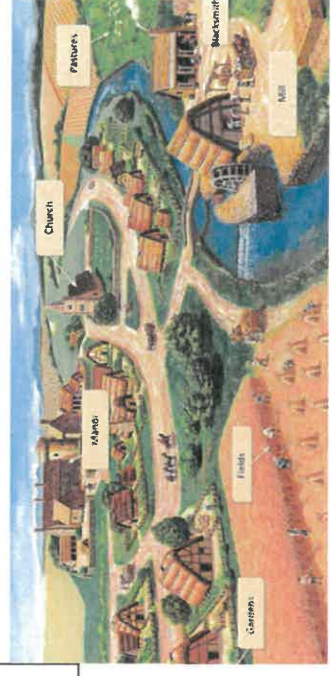
**Popular culture:** entertainment and shared activities that most people enjoyed taking part in.

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

**Rebellion:** to organise a protest, often against those in charge to gain change.

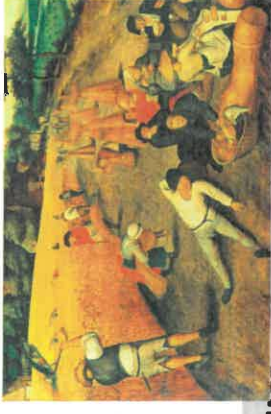
**Relic:** a holy item which has religious importance to those who follow a faith.

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



## Enquiry: How similar was Medieval and Tudor life?

History – Year 7  
Knowledge Organiser  
Topic 1



### Historical skill focus: similarity & difference

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

Remember to mention:	Areas you could mention include:	Starting sentences...
Similarities AND differences	Entertainment Living conditions Religion Illness/disease Equality	People's lives were similar because... Life was very different between the Medieval times and now because:



Point = A key difference was...

Evidence = This is shown by the types of entertainment which were...

Explain = This is different because...

## Section B: Using similarity & difference:

Write at least two paragraphs to answer this question:

How similar were people's lives in the Medieval period compared to today (21<sup>st</sup> century)?

### Developing

I can identify key similarities and key differences between people's lives during two periods of time

### Secure

I can describe key similarities and key differences between people's lives during two periods of time

### Exceeding

I can explain key similarities and key differences between people's lives during two periods of time using PEE paragraphs.



# YEAR 7 — ALGEBRAIC THINKING...

## Algebraic notation

@whisto\_maths

### What do I need to be able to do?

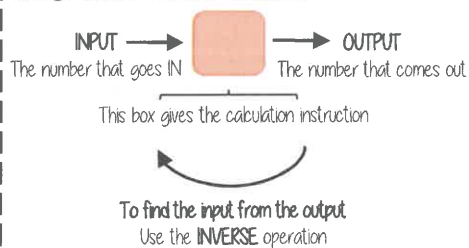
By the end of this unit you should be able to:

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

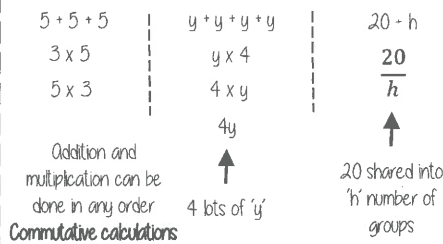
### Keywords

- Function:** a relationship that instructs how to get from an input to an output.
- Input:** the number/ symbol put into a function.
- Output:** the number/ expression that comes out of a function.
- Operation:** a mathematical process.
- Inverse:** the operation that undoes what was done by the previous operation. (The opposite operation)
- Commutative:** the order of the operations do not matter.
- Substitute:** replace one variable with a number or new variable.
- Expression:** a maths sentence with a minimum of two numbers and at least one math operation (no equals sign)
- Evaluate:** work out
- Linear:** the difference between terms increases or decreases by the same value each time
- Sequence:** items or numbers put in a pre-decided order

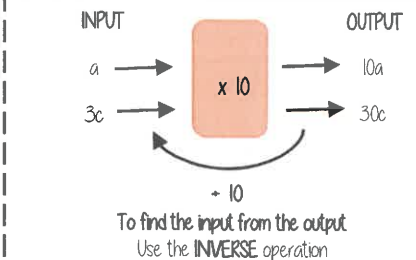
### Single function machines



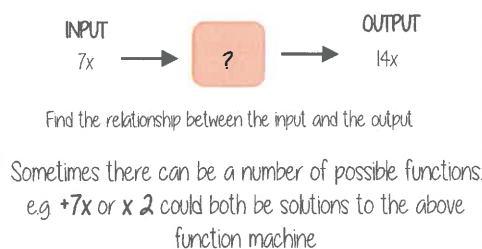
### Using letters to represent numbers



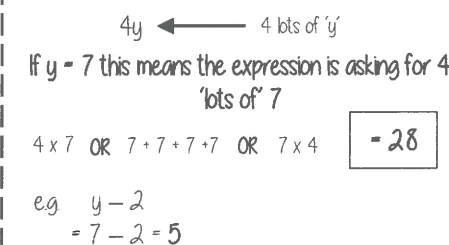
### Single function machines (algebra)



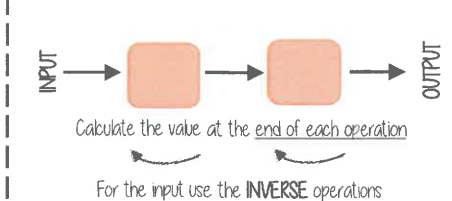
### Find functions from expressions



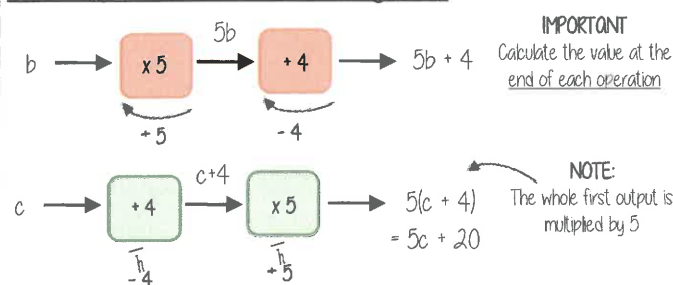
### Substitution into expressions



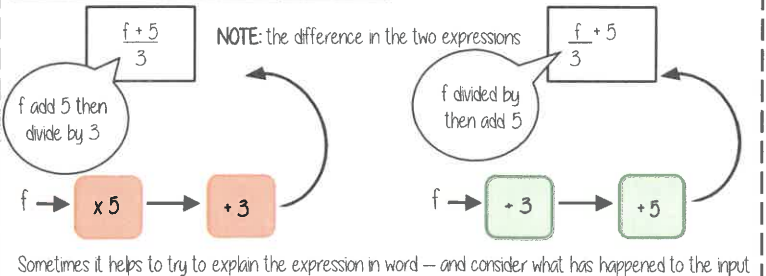
### Two step function machines



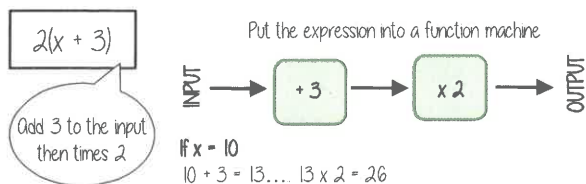
### Two step function machines (algebra)



### Find functions from expressions

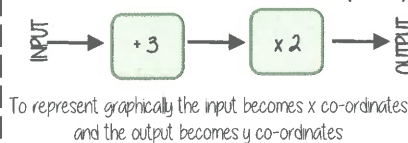


### Substitution into an expression

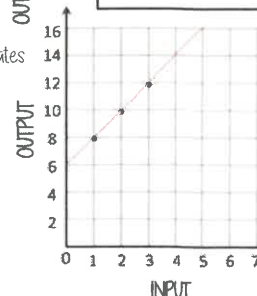


### Representing functions graphically

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



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



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

### Forming a sequence



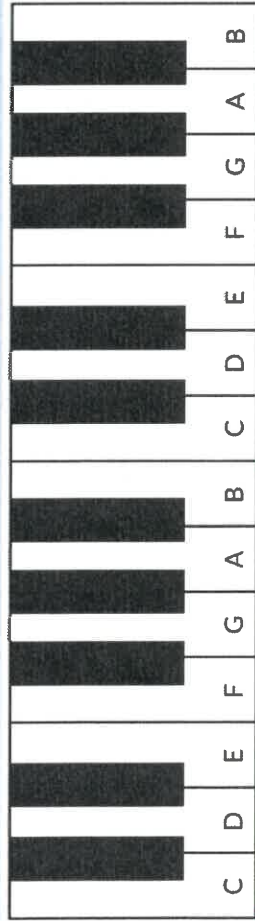




# KEYBOARD SKILLS

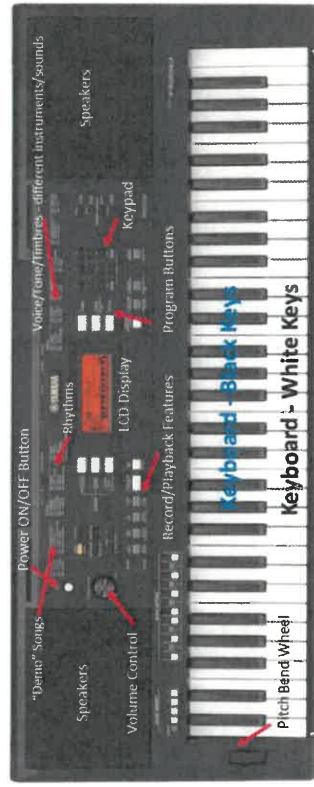
## Exploring Treble Clef Reading and Notation

### A. Layout of a Keyboard/Piano

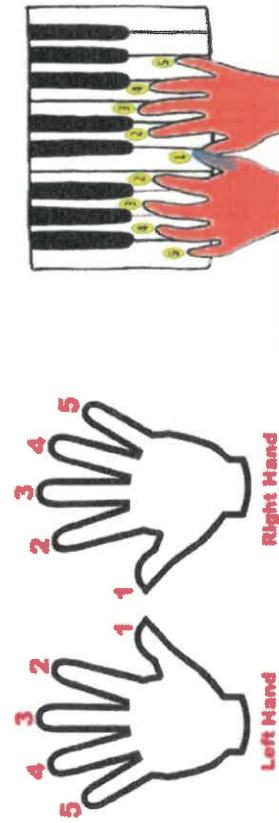


A piano or keyboard is laid out with **WHITE KEYS** and **Black Keys** (see section G). C is to the left of the two Black Keys and the notes continue to G then they go back to A again. Notes with the same letter name/pitch are said to be an **OCTAVE** apart. **MIDDLE C** is normally in the centre of a piano keyboard.

### D. Keyboard Functions



### E. Left Hand/Right Hand (1-5)

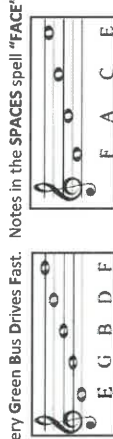


### B. Treble Clef & Treble Clef Notation

A **STAVE** or **STAFF** is the name given to the five lines where musical notes are written.

The position of notes on the stave or staff shows their **PITCH** (how high or low a note is). The **TREBLE CLEF** is a symbol used to show high-pitched notes on the stave and is *usually* used for the right hand on a piano or keyboard to play the **MELODY** and also used by high pitched instruments such as the flute and violin. The stave or staff is made up of 5 **LINES** and 4 **SPACES**.

Every Green Bus Drives Fast. Notes in the **SPACES** spell "FACE"



Notes from **MIDDLE C** going up in pitch (all of the white notes) are called a **SCALE**.



### C. Keyboard Chords

#### C Major



#### G Major



#### F Major



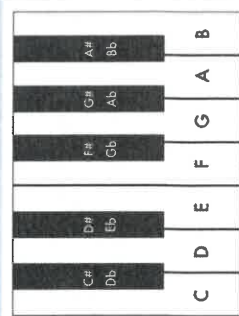
#### A Minor



Play one – Miss one – play one – miss one – play one

### F. Black Keys and Sharps and Flats

There are five different black notes or keys on a piano or keyboard. They occur in groups of two and three right up the keyboard in different pitches. Each one can be a **SHARP** or a **FLAT**. The # symbol means a **SHARP** which raises the pitch by a semitone (e.g. C# is higher in pitch (to the right) than C). The b symbol means a **FLAT** which lowers the pitch by a semitone (e.g. Bb is lower in pitch (to the left) than B). Each black key has 2 names – C# is the same as Db – there's just two different ways of looking at it! Remember, black notes or keys that are to the **RIGHT** of a white note are called **SHARPS** and black notes to the **LEFT** of a white note are called **FLATS**.



# Φ — Philosophy Knowledge Organiser — Φ

## Overview

**Philosophy** is the study and love of wisdom.

**The Big 3** all played an influential part in the development of modern philosophy. Each encouraged people to question their ways of life and the reality of it.

There are 7 branches of **Philosophy**:

Metaphysics, Axiology, Logic, Aesthetics, Epistemology, Ethics And Political.

Statue of Socrates, considered the father of philosophy.



## The Big 3 (Greek)

### Socrates

**Socrates** believed that ultimate wisdom comes from knowing yourself and to be willing to question human choices. This led to **Socrates** being accused of corrupting young minds, but he maintained that "the unexamined life is not worth living" through **Socratic Questioning**.





### Plato

**Plato** believed that life was imprisonment for the soul and described that a perfect society would be ruled by a philosopher. He argued that just because we perceive something to be 'real' does not mean it truly is through his allegory of **Plato's Cave**.

### Aristotle

**Aristotle** believed that happiness is the goal of life (**Eudemonia**) and that to achieve this happiness people would need to avoid extremes (**The Golden Mean**).

## Answers to Important Questions and Key Vocabulary

Where did Western philosophy originate?		Western philosophy is often thought to have started pre-Socrates in Ancient Greece.	<b>Key Vocabulary</b> <ul style="list-style-type: none"> <li>• Philosophy</li> <li>• Socratic Questioning</li> <li>• Allegory</li> <li>• Eudemonia</li> <li>• Empirical Knowledge</li> <li>• Rational Knowledge</li> <li>• Authoritarian</li> <li>• Knowledge</li> <li>• Belief</li> </ul>
What do philosophers discuss?		Philosophers search for meaning in everything and attempt to answer 'ultimate questions' like why do we suffer?	
Who are the key philosophers?		Although we focus on the Big 3, there are numerous philosophers including religious figures like Siddhartha Gautama.	
Why do philosophers use allegories?		Allegories help easily convey complex moral easily.	

## Top 10 Facts/Quotes

1. Socrates once said: "the only thing I know is that I know nothing."
2. Pythagoras started a school that taught both men and women in 530 BC.
3. Aristotle said: "Knowing yourself is the beginning of all wisdom".
4. 'Carpe Diem' meaning 'seize the day' comes from Roman poet, Horace.
5. Rene Descartes said: 'Conquer yourself rather than the world.'
6. Kierkegaard often wrote under different names so that he could argue with himself!
7. Bertrand Russell said: 'Science is what you know. Philosophy is what you don't know.'
8. John Dewey said: 'Education is not preparation for life; education is life itself.'
9. Plato was a wrestler.
10. Socrates chose to drink Hemlock to avoid exile.

## Philosophy Timeline

Socrates  
(469 – 399 BC)

Plato (20) meets  
Socrates (60)

Plato  
(429 – 347 BC)

Aristotle (17) meets  
Plato (62)

Aristotle  
(384 – 322 BC)

# Φ — Philosophy Knowledge Organiser — Φ

## Asking Better Questions

Plato believed there was more to life than we can see. Using **Socratic Questioning** or asking **deeper questions** we can begin to understand the world we live in.

You can start to dig deeper by structuring your questions like this:

- What do you mean by X?
- How do you know?

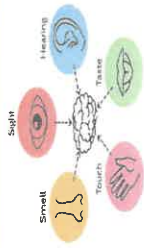

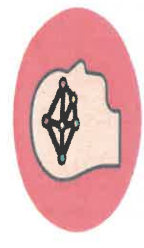

You can also use your question mats to develop your questioning and make you more critical of the world.

Try asking questions about the year 2100 and consider the following:

- School
- Food
- Transport
- Movies
- Racism
- Pandemics
- Global warming
- Politics
- Technology
- Equality

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

## Different Types of Knowledge

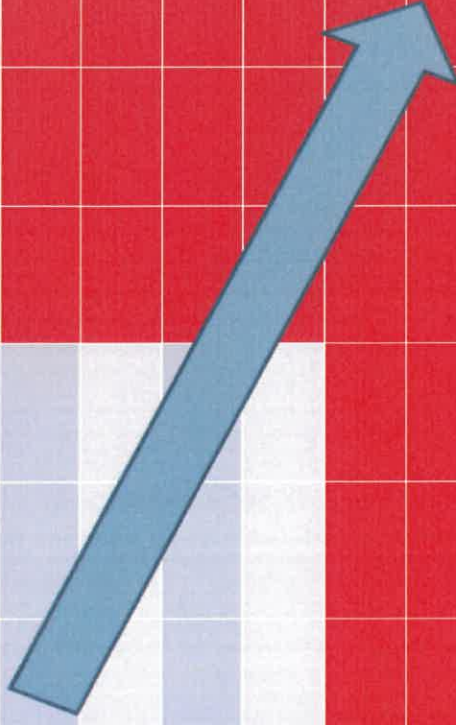
<b>Empirical</b>		This is the knowledge requires you to use your sense to discover information.
<b>Authoritarian</b>		When you are told information by authoritative figures, e.g. teachers, law enforcement or adults.
<b>Reason</b>		When you use logic or reasoning (deductive and inductive) to work something out.
<b>Belief</b>		What you choose to think is true and real.



Judge a man by his questions rather than his answers.  
- Voltaire

## How deep do you want your questions to go?

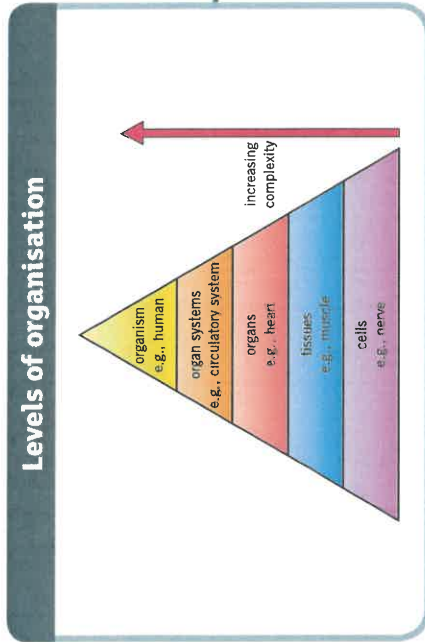
	Is it Done? Present	Did it Part	Can it? Probability	Could it? Should it? Probability	Will it? Prediction	Might it? Imagination
What (Event)						
Where (Place)						
When (Time)						
Who (Person)						
Why (Reason)						
How? (Meaning)						



Plato's Cave



Socrates' Death



### The skeleton

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

### Muscles

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

### Organs

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

### Plant and animal cells

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

### Specialised cells

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

### Movement into and out of cells

- The process in which substances move into and out of cells is known as **diffusion**
- This occurs across the **cell membrane**
- During diffusion particles move from an area of high **concentration**, to an area of low concentration

Oxygen and nutrients enter the cell by diffusion, carbon dioxide and waste products leave

### Movement

Joints occur between bones and allow movement, there are three main types of joints

- Hinge**  
Ball and socket  
For movement in all directions - g. hips
- Ligaments**  
Connect bone to bone
- Cartilage**  
Coats the end of bones as a protection
- Tendons**  
Connects bone to muscle

Do not allow movement, e.g. skull

### Key terms

Make sure you can write definitions for these key terms.

antagonistic muscle pair    bone marrow    organ    nucleus    bone    bone marrow    organ system    skeleton    specialised cells    tendons    tissue    microscope    muscular skeletal system

Changes of state

changes of state

state of matter

how do the particles move?

arrangement of particles

can it be compressed?

can it flow?

changes of state

solid  
Particles don't move around

melting  
Particles touching but can slide over each other

liquid  
particles are spread out far away from each other

boiling/evaporation

gas

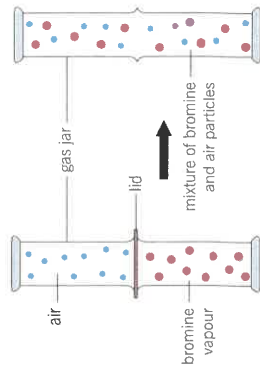
condensation

freezing

Yes, because there is space between the particles  
No, because the particles are touching their neighbours  
Yes, because the particles can move around

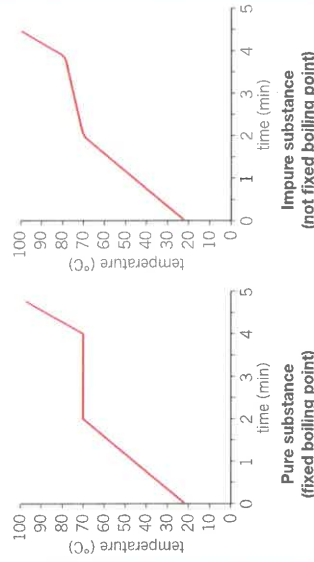
Diffusion

- **Diffusion** is the movement of particles from an area of high concentration (lots of the same particle) to an area of low concentration (not a lot of the same particle)
- It is a random process which does not need energy
- The speed of diffusion can be increased by:
  - A higher temperature
  - Smaller particles diffusing
  - A gas rather than a liquid
- Diffusion does not happen in a solid as the particles can't flow



Melting and boiling points

- The **melting point** of a substance is the temperature at which it turns from a solid to a liquid, or a liquid to a solid
- The **boiling point** of a substance is the temperature at which it turns from a liquid to a gas or a gas to a liquid
- **Pure substances** have a fixed (sharp) boiling or melting point, whereas **impure substances** have a range which appears as a diagonal line on a graph

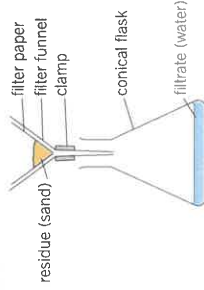


Mixtures

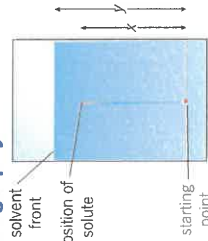
- **Mixtures** are different **substances** which are together, they are not chemically bonded and so are easy to separate
- The substances which make up a mixture keep their own **properties** unlike those in a compound
- A mixture is an **impure** substance as it does not have a fixed melting point, instead it has a range
- A **solution** is a type of mixture which is made up of two parts
- A **solute** is the part which has dissolved in the solution
- A **solvent** is the liquid part which the solute has dissolved into
- The **solubility** of a substance is a measure of how much of it will **dissolve**
- Not all solutes will dissolve in all solvents
- Solutes which do not dissolve are known as **insoluble**
- Substances which do dissolve are known as **soluble**
- The **solubility** of a substance can be increased by increasing the temperature of the solution or by stirring the solution
- A **saturated solution** is one where the maximum amount of solute has dissolved in it, no more solute will be able to dissolve

Separating Mixtures

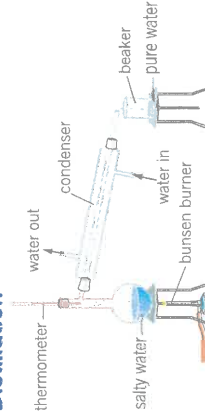
Filtration



Chromatography



Distillation



Evaporation



Key terms

Make sure you can write definitions for these key terms.

- boiling point   chromatography   condensation   diffusion   pure substance   properties   property   saturated solution   substance   distillation   evaporation   freezing   impure substance   melting point   mixture   soluble   solubility   solute   solution   solvent