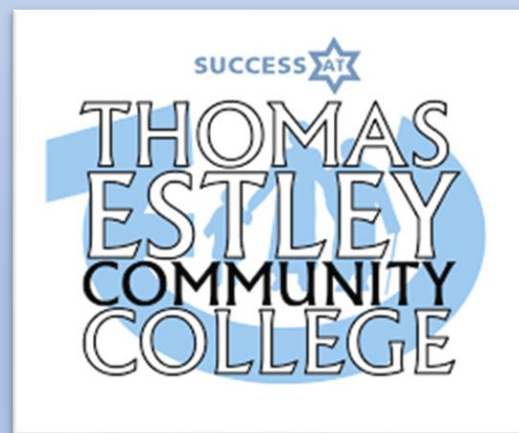# Thomas Estley Community College Year 8 Summer Term Knowledge Organiser
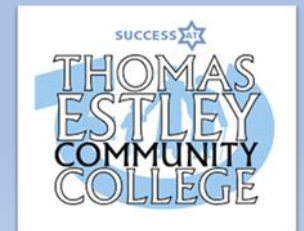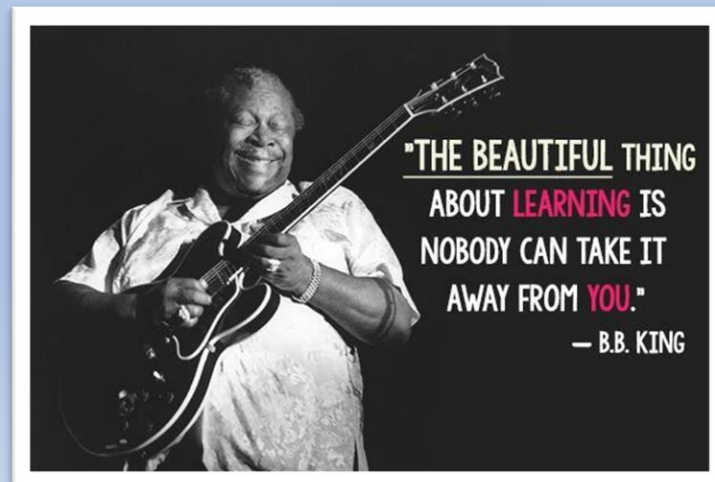
What are Knowledge Organisers?

A knowledge organiser is an easy way that each subject can summarise the most important information. Each subject section will include key terms, short explanations, glossary words, diagrams etc making it clear to the student as to what is essential to learn. Each grid has an overall theme and these vary according to the subject being taught.

It will be the students responsibility to keep the knowledge organisers safe and refer to them over the whole academic year.

How will these be used at Thomas Estley?

At Key stage 3, you will be given a knowledge organiser each term. You need to keep these safe in your learning packs that you were provided with at the start of the academic year.

Your subject teachers will use these in a variety of ways, for both class work, remote learning opportunities and homework. They will be used to help with revision for class quizzes and retrieval practice activities. They will also be used for flip learning activities, where subject teachers will ask you to learn some information and then go in to it in more detail in class.

"THE BEAUTIFUL THING ABOUT LEARNING IS NOBODY CAN TAKE IT AWAY FROM YOU."
— B.B. KING

SUCCESS AT
THOMAS ESTLEY COMMUNITY COLLEGE

Revision Tips and Tricks!

Record It

Record yourself on your phone or tablet reading out the information. These can be listened to as many times as you want!

Teach it!

Teach someone your key facts and the get them to test you, or even test them!

Flash Cards

Write the key word or date on one side and the explanation on the other. Test your memory by asking someone to quiz you on either side.

Back to front

Write down the answers and then write out what the questions the teacher may ask to get those answers.

Hide and Seek

Read through your knowledge organiser, put it down and try and write out as much as you can remember. Then keep adding to it until its full!

Sketch it

Draw pictures to represent each of the facts or dates. It could be a simple drawing or something that reminds you of the answer.

Post its

Using a pack of post-it notes, write out as many of the keywords or dates as you can remember in only 1 minute!

PRACTICE MAKES PERFECT

Read Aloud

Simply speak the facts and dates out loud as you're reading the Knowledge Organiser. Even try to act out some of the facts – it really helps you remember!
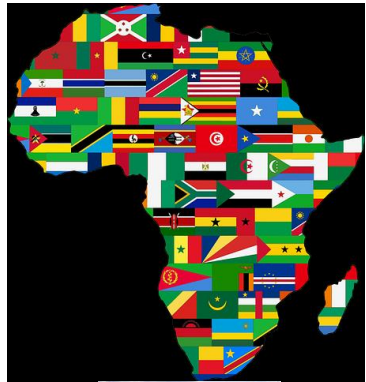
Practice!

Some find they remember by simply writing the facts over and over again.

Geography Knowledge Organiser
Year 8: **Africa**

Key Word	Definition
Africa	One of the seven continents of the world, made up of fifty-four countries.
Political Map	A map that shows countries and cities. Often they use false colours to show this clearly.
Climate Graph	A graph which shows the climate of a place including temperature and precipitation.
Biome	A very large ecosystem which occupies a major climatic region.
Colonisation	The action of settling among and establishing control over the indigenous people of an area.
Population Density	The number of people per square kilometre.
Culture	Ideas, customs and social behaviour of particular people or society.
Ethnic Group	A community or population made up of people who share a common cultural background or descent.
Civil War	A war between citizens of the same country.
Natural Resources	Materials or substances occurring in nature which can be exploited for economic gain.
Trade	The buying and selling of goods and services between countries.
Fairtrade	Trade where a fair prices are paid to the producers.

Useful website...
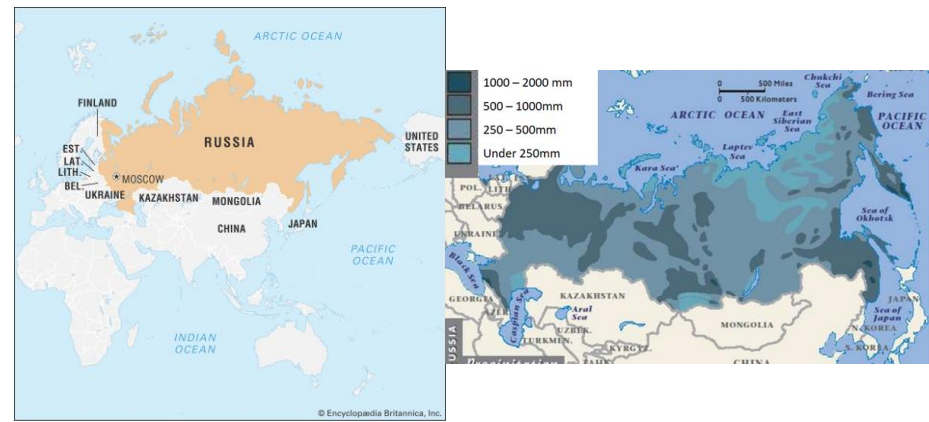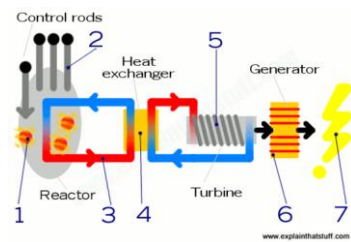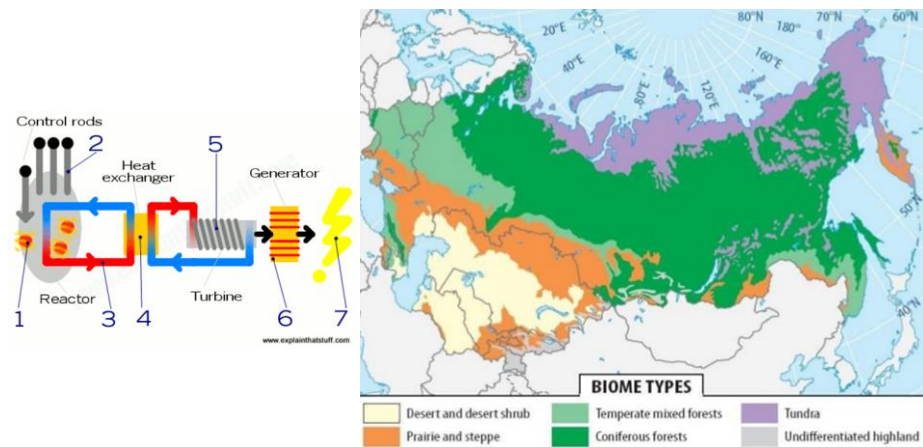https://www.britannica.com/place/Africa

Biomes of Africa

Desert
Semi-Arid
Grassland
Rainforest
Savanna
Woodland /Scrub

Population density map
(number of people per km²)

0-9
10-24
25-49
50-74
75-99
100-149
150-299
300-999
1000+

Geography Knowledge Organiser
Year 8: **Russia**

Key Word	Definition
Annual	Another way of saying 'every year'.
Choropleth Map	A map that uses colour to show changes over space.
Population Density	The average number of people that live in an are, given as a number per km².
Tundra	The name of a biome in northern Russia. It has a has a thin layer of permafrost.
Permafrost	A layer of permanently frozen ground with a thin active layer that melts in the short summer and allows for the growth of vegetation.
Coniferous Forest	Trees keep their needles all year to maximise opportunities for photosynthesis.
Steppe (or Prairie)	Temperate grassland across the Eurasian Plain. Important area of food production.
Fossil Fuels	A term which refers to coal, oil and natural gas. These are non-renewable sources of energy.
Renewables	A term which refers to energy from 'green' sources e.g. wind, solar and wave. These will not run out!
Chernobyl	The name of a city in modern-day Ukraine which had a nuclear disaster in 1986.

Useful websites...
https://www.britannica.com/place/Russia

Mean Annual Temperature in Russia

Temp. [in degree Celsius]

BIOME TYPES
Desert and desert shrub   Temperate mixed forests   Tundra
Prairie and steppe   Coniferous forests   Undifferentiated highland

Key Word	Definition
Crime	An action or omission which constitutes an offence and is punishable by law.
Source Analysis	Gaining information and insights from a picture, graph, map, report, speech etc.
Victim	A person harmed, injured, or killed as a result of a crime, accident, or other event or action.
Perpetrator	A person who carries out a harmful, illegal, or immoral act.
Defensible Space	An area which can be easily monitored for crime.
Crime Hotspot	An area with a high level of crime compared to the surrounding areas.
Demographics	Statistical data relating to the population and particular groups within it. You can think of this as People and Age!
Borough	A town or district which is an administrative unit. 32 local authority districts that make up Greater London.
Prevention	How to stop (or substantially reduce) the risk of something happening.
Cost Benefit Analysis	Working out whether there are more advantages or more disadvantages to doing something.

Useful websites…
https://www.bbc.co.uk/bitesize/topics/zy8xpv4
https://www.police.uk/

Key
Number of anti-social crimes committed

Offence group - Recorded crime in the UK January to June 2011

Miscellaneous offences 64,581
Sexual offences 54,725
Fraud and forgery offences 144,032
Drug offences 231,778
Offences against vehicles 440,878
Criminal damage offences 677,318
Violence against the person offences 796,913
Robbery offences 76,786
Burglary offences 518,954
Other theft offences 1,090,752

All crime (20)   reported in April 2016

Computing: Developing for the Web

Hyper Text Markup Language (HTML) is a basic programming language for building web pages. It uses a set of predefined **tags** that the web browser then interprets and displays.

The World Wide Web is responsible for standardising HTML and releasing updated specifications that revise existing tags and introduce new tags. Web pages contain different types of information including images, text and multimedia.

Key Vocabulary

Web Browser: An application used to view webpages eg Google Chrome, Firefox, Microsoft Edge, Safari, Internet Explorer.

HTML: (Hyper Text Markup Language) Used to write and create web.

Hyperlink: A link in a document or webpage that connects to another location.

Internet: A global network connecting millions of computers together.

Website: A webpage or group of webpages hosted on a web server and viewed in a web browser,

Using HTML to create websites

HTML can be written in a simple text editor like Notepad. As long as it is saved with file extension.html eg: myfirstwebpage.html it can be opened and viewed as a webpage from a browser.

```
<html>
        <body>
            <h1> My First Web page </h1>
             <p> This is my very first web page
              that I have created using Notepad </p>
          </body>
</html>
```

Key Facts

- Web pages contain different types of information including images, text and multimedia.
- There is no central storage for websites.
- The World Wide Web (WWW) is a huge collection of websites that we can access using the internet.
- Each website contains web pages which are navigated via hyperlinks.

HTML Tags:

<html>	States that the document is a HTMl document .
<body>	Information appears in the body of the page.
<h1>	The main heading for the web page.
<p>	The beginning of a new paragraph.
<img>	Image for web page and file type of image example: Jpg, Png, gif
** **	Add a blank line
<a href>	A link to other web sites

Ranking algorithm

Used to rank the importance of web pages and considers:

- when the page was last updated
- webpages that link to a found page
- other webpages that a found page links to

Gathering information

- Search engines use programs known as **crawlers** or **spiders** to find content on the World Wide Web.

- These crawlers visit links from one web page to another, recording common keywords that they find.

- By travelling along these links, the crawlers can eventually find newly created content.

Indexing

When crawlers finish their journey, they are stored in a data structure called an index.

The index records the following about each web page:

- Frequently used keywords
- Type of content found, (images, text, etc.)
- Date of last update

CSS Cascading style sheets:

- HTML defines the structure and content of your web page.
- CSS defines the style and layout of web pages.
- CSS can be used to change the style of a whole website, one web page or a single occurrence of an element, e.g.

  <h1 style="text-align:center">

  OR

  body {
  color: green;
  }

Threats to networks

Trojan Horse: Programs designed to lock you out of your computer and not let you access the data unless you pay a ransom

Virus: A malicious program that hides inside other files that users might believe are harmless

Spyware: Installed without you knowing and used to track all your activity when you browse the World Wide Web

Ransomware: Executable code that when run damages the files and stops the computer from operating normally

Worm: Exploits the vulnerabilities of a system by finding holes in its security

Phishing: Steal people's personal information using fake emails from real organisations

What happens when I view a web page?

Your Computer → Your ISP → Internet → Website Host / Server

Controlling searches

Edinburgh OR castle — Q All · Maps · New — About 1,160,000,000 results — OR operator Finds pages with either Edinburgh or castle on them.

Edinburgh -castle — Q All · Maps · N — About 179,000,000 results — NOT operator Finds pages with Edinburgh, but removes those with word castle.

"Edinburgh castle" — Q All · Maps — About 4,230,000 results — Phrase search Pages found that only have "Edinburgh castle" on them, in that order.

Computing:
Introduction to Python

Python is a **text** based **programming language**. That can be used to create programs, games, applications and much more!

A **program** is a set of precise instructions, expressed in a **programming language**.
Translating the programming language is necessary for a machine to be able to **execute** the instructions.

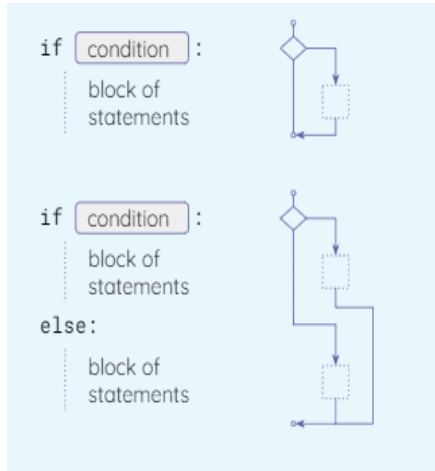To execute a Python program, you need a **Python interpreter**.

This is a program that translates and executes your Python program.

A **selection** statement allows a computer to **evaluate** whether an **expression** is 'true' or 'false' and then perform an action depending on the outcome.

You will need an **if** or an **if, else**: when there is **more than one possible path** for your program to follow.

Syntax Errors

All programming languages have rules for **syntax**, i.e. how statements can be assembled.
Programs written in a programming language must follow its syntax.
Programs with **syntax errors** cannot be translated and executed.

Useful snippets of code

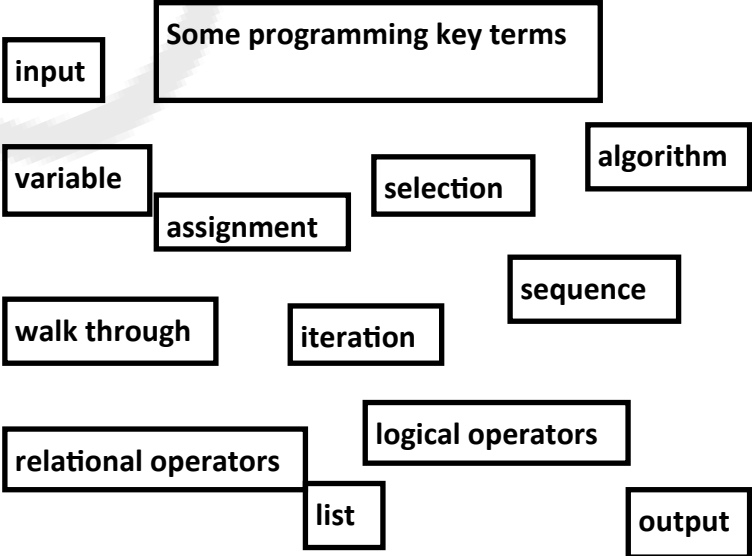|	
print ("Year 9")	Will display the string "Year 9"
input ()	Reads a line of text from the keyboard and returns
variable name = expression	Allows an expression to be assigned to a variable. E.g. year=1944
Name=[item1, item2, item3]	Allows creation of a list e.g. shopping = ["oranges", "apples", pears"]

Some data types

Whole numbers—**integer**

Yes/no or True/False—**boolean**

Letters, combination of letters, numbers—**string**

Arithmetic operators

+ addition

- difference

* multiplication

/ division

// integer division

% remainder of integer division

** exponentiation (to the power of)


```
if [ condition ]:
    block of
    statements

if [ condition ]:
    block of
    statements
else:
    block of
    statements
```

Some programming key terms

input

variable

assignment

algorithm

selection

sequence

walk through

iteration

relational operators

logical operators

list

output

You can use multiple branches using if, elif and else

Python helps by telling the programmer where the error is.
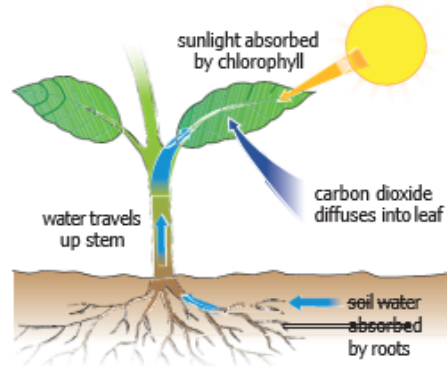So if you see red error text—read it first.

Some common syntax errors in selection

- use if and else—no capitals

- A colon : is always required after the if condition and after else.

- Use **indentation** to indicate which statements 'belong' to the if block and the else block.

- The == operator checks for equality.

- A single = is only used in assignments
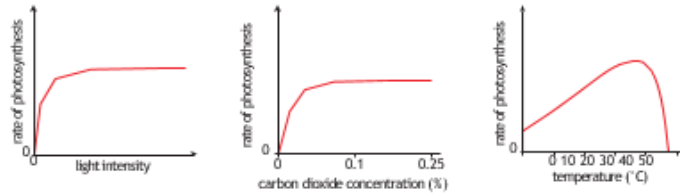
Photosynthesis

- **Photosynthesis** is the process which occurs in the chloroplasts to produce glucose using sunlight

glucose + carbon dioxide → glucose + oxygen

- Any organism that can use photosynthesis to produce its own food is known as a **producer**, these are not just limited to plants but can include other organisms such as **algae**

sunlight absorbed by chlorophyll

carbon dioxide diffuses into leaf

water travels up stem
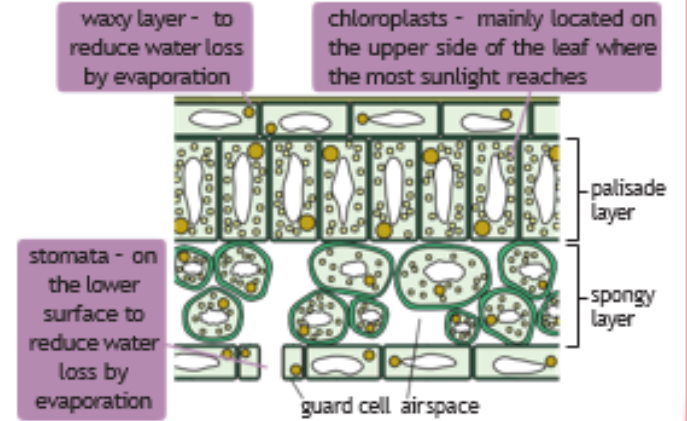
~~soil water absorbed~~ by roots

- The rate of photosynthesis can be affected by:
  - Light intensity – the higher the light intensity the higher the rate of photosynthesis up to a point
  - Carbon dioxide concentration – the higher the carbon dioxide concentration the higher the rate of photosynthesis up to a point
  - Temperature – the optimum temperature is the temperature at which photosynthesis occurs at the highest rate, before and after this the rate will be less

rate of photosynthesis vs light intensity

rate of photosynthesis vs carbon dioxide concentration (%) 0 0.1 0.25

rate of photosynthesis vs temperature (°C) 0 10 20 30 40 50

Leaves

- To best adapt for photosynthesis leaves have a number of adaptations
- They are thin to allow the most light through
- There is a lot of **chlorophyll** to absorb light
- They have a large surface area to absorb as much light as possible

waxy layer – to reduce water loss by evaporation

chloroplasts – mainly located on the upper side of the leaf where the most sunlight reaches

stomata – on the lower surface to reduce water loss by evaporation

palisade layer

spongy layer

guard cell airspace

B4 Plants
Activate
Question •Progress •Succeed
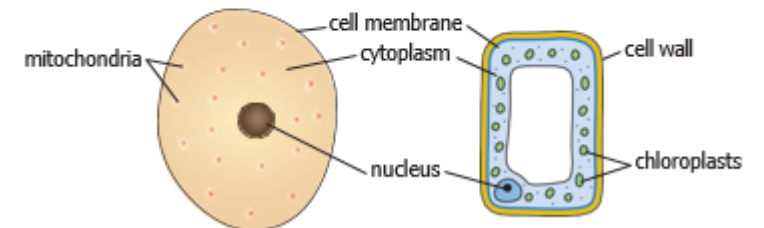### Knowledge organiser

Plant minerals

Plants need minerals for healthy growth, if they do not have enough of these minerals this is known as a **mineral deficiency**

Mineral	What is It used for?	What happens if there is not enough?
nitrates (contain nitrogen)	healthy growth	poor growth and older leaves yellow
phosphates (contain phosphorus)	healthy roots	poor growth, younger leaves look purple
potassium	healthy leaves and flowers	yellow leaves with deadpatches
magnesium	making chlorophyll	leaves will turn yellow

Fertilisers can be used to stop plants from suffering with mineral deficiencies

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

mitochondria

cell membrane

cytoplasm

cell wall

nucleus

chloroplasts

Respiration

- Respiration is the process in which energy is released from the molecules of food which you eat
- Respiration happens in the mitochondria of the cell
- **Aerobic respiration** involves oxygen, it is more efficient as all of the food is broken down to release energy

glucose + oxygen → carbon dioxide + water

- The glucose is transported to the cells in the blood **plasma**
- The oxygen is transported to the cells in **red blood cells**, by binding with **haemoglobin**
- Carbon dioxide is a waste product and is transported from the cells to the lungs to be exhaled

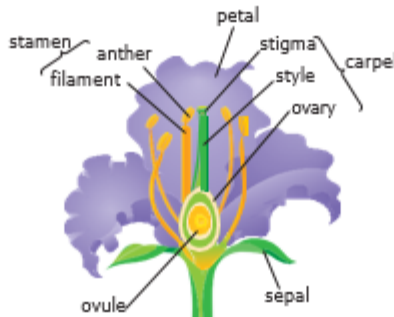**Key terms** Make sure you can write definitions for these key terms.

Algae Anther Chlorophyll Chloroplast Fertiliser   Light intensity
Magnesium Mineral deficiency Nitrates Palisade cells
Phosphates   Photosynthesis   Potassium Producer Rate
Spongy layer Stomata Waxy layer

Parts of a flower

Stamen

Male part of the flower

- The **anther** produces **pollen**
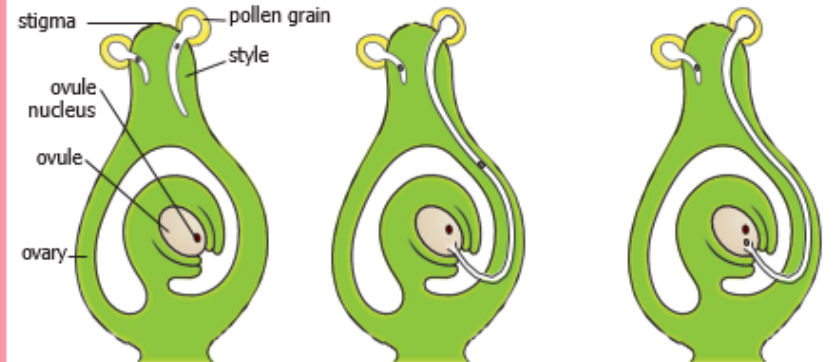- The **filament** holds up the anther

Carpel

Female part of the flower

- The **stigma** is sticky to catch grains of pollen
- The **style** holds up the stigma
- The **ovary** contains **ovules**

Pollination and fertilisation

Pollination is the **fertilisation** of the ovule, the point at which the pollen is transferred to the ovule from the anther to the stigma, there are two types of pollination

- Cross pollination is between two different types of plant
- Self pollination happens within the same plant

The tube grows out of the pollen grain and down through the style.

The pollen nucleus moves down the tube.

The pollen nucleus joins with the ovule nucleus. Fertilisation takes place and a seed will form.

Germination is the process in which the **seed** begins to grow, for this to occur the seed needs:

- Water to allow the seed to swell and grow and for the embryo to start growing
- Oxygen for that the cell can start respiring to release energy for germination
- Warmth to allow the chemical reactions to start to occur within the seed
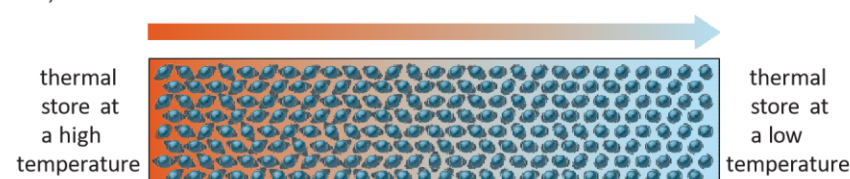
B4 Plants Knowledge organiser

Activate
Question •Progress •Succeed

Activate
Question •Progress •Succeed

Conduction

- **Conduction** is the transfer of thermal energy by the vibration of particles, it cannot happen without particles
- This means that every time particles collide they transfer thermal energy
- Conduction happens effectively in solids as their particles are close together and can collide often as they vibrate around a fixed point
- Metals are also good **thermal conductors** as they contain electrons which are free to move
- In conduction the thermal energy will be transferred from an area which has a high **thermal energy store** (high temperature) to an area where there is a low thermal energy store (low temperature)
- Gases and liquids are poor conductors as their particles are spread out and so do not collide often, we call these **insulators**

thermal store at a high temperature

thermal store at a low temperature

Energy and temperature

- The **temperature** of a substance is a measure of how hot or cold it is
- Temperature is measured with a **thermometer**, it has the units of degrees Celsius (^{o}C)

- The **thermal energy** of a substance depends on the individual energy of all of the particles, it is measures in Joules (J)
- As all particles are taken into account, a bath of water at 30 ^{o}C would have more thermal energy than a cup of tea at 90 ^{o}C as there are many more particles
- The faster the particles are moving, the more thermal energy they will have
- When particles are heated they begin to move more quickly
- The energy needed to increase the temperature of a substance depends on:
  - the mass of the substance
  - what the substance is made of
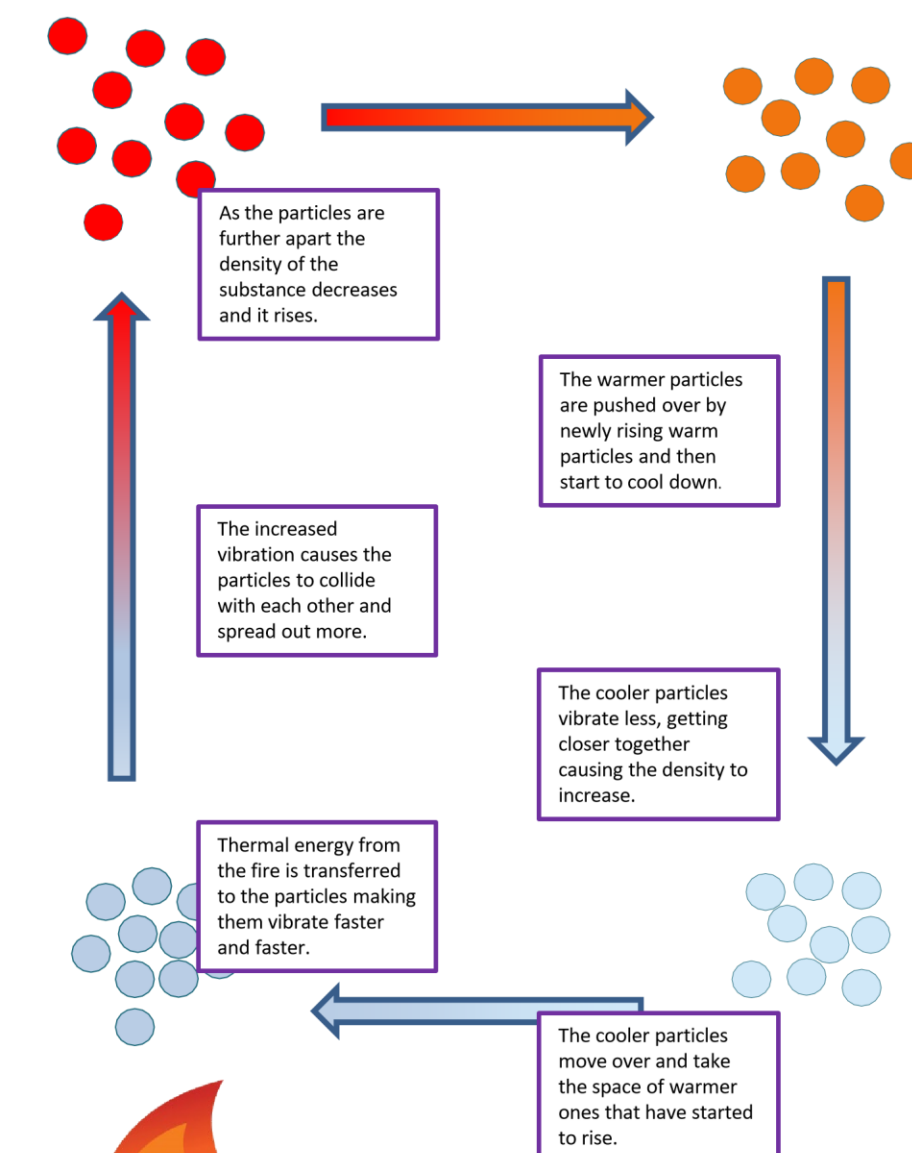 - how much you want to increase the temperature by

Convection

- **Convection** is the transfer of thermal energy in a liquid or a gas, it cannot happen without particles
- As the particles near the heat source are heated they spread out and become less dense, this means that they will rise
- More dense particles will take their place at the bottom nearest the heat source creating a constant flow of particles
- This is known as a **convection current**
- Convection cannot happen in a solid as the particles cannot flow, they can only move around a fixed point

Radiation

- **Radiation** is a method of transferring energy without the need for particles
- An example of radiation is thermal energy being transferred from the Sun to us through space (where there are no particles)
- This type of radiation is known as **infrared radiation**, it is a type of wave just like light
- The hotter an object is the more infrared radiation it will emit (give out)
- The amount of radiation emitted and absorbed depends on the surface of the object:
- Darker matte surfaces absorb and emit more infrared radiation
- Shiny and smooth surfaces absorb and emit less infrared radiation, instead reflecting this
- The amount of infrared radiation being emitted can be viewed on a **thermal imaging camera**

Convection currents

As the particles are further apart the density of the substance decreases and it rises.

The warmer particles are pushed over by newly rising warm particles and then start to cool down.

The increased vibration causes the particles to collide with each other and spread out more.

The cooler particles vibrate less, getting closer together causing the density to increase.

Thermal energy from the fire is transferred to the particles making them vibrate faster and faster.

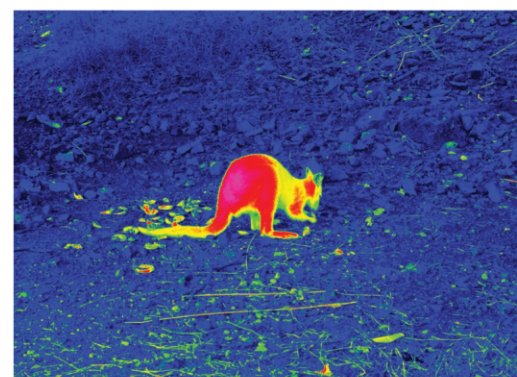The cooler particles move over and take the space of warmer ones that have started to rise.

- Convection currents can be seen in any fluid as it gets heated. Most commonly you will see them in the air around us. As the sun heats the air convection currents cause air to rise. The air that moves in to take its place is what we call wind.

Key terms Make sure you can write definitions for these key terms.

conduction   convection   convection current   density   insulator   infrared radiation   temperature

thermometer   thermal conductor   thermal energy store   thermal imaging camera   density

Context

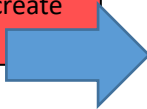|	
Ghost stories	**Ghost story**, a tale about ghosts. More generally, the phrase may refer to a tale based on imagination rather than fact. Ghost stories exist in all kinds of literature, from folktales to religious works to modern horror stories, and in most cultures.

Elements

Supernatural	The word **supernatural** (from Latin: *supernātūrālis)* is used for things that some people believe are real, but that are not part of nature or inexplicable by the scientific laws of nature. Because we cannot prove whether these things are real, people often disagree about these things.
Setting	Choosing a location in a ghost story is the first and best way of creating a haunting atmosphere. Isolated, lonely places, buildings with unhappy histories, places where something terrible has happened regularly crop up in ghost stories for a reason. As well as using recognisable settings such as haunted house and fright night clichés, think how you can add an original twist to familiar ghost story tropes to give an original spin to your ghost story

How can an actor create tension? ➡ The lack of movement can have just as much impact as movement. A **freeze frame** or **still image** with an emotional stillness can be very powerful. The power comes from the interruption of what is natural. We expect movement, so stillness is an implicit shock. It makes us look at what is happening, taking the time afforded by the stillness to interpret the action. This can also be used for **marking the moment** to explore a key moment in time. It also creates contrast and varies pace, keeping the work interesting.

Creating Your Production

A **soundscape** is a series of sounds created by students (not words, echoes, repetition, or speaking together) that create a setting or suggest a scene. Sounds could range from wind, to creaking boards, to laughter. Gestures are optional.

Ghostly sounds effect and ambiences
When it comes to ghostly sounds low mid and high frequencies are what we're after. Good source sounds are e.g. metal or wood squeaks, metal scrapes and moans . Also effective are whistling winds, squeaky doors and vocalizations of course (especially children's voices).
There are many 'standard tools" for blood soaking, bone cracking sound effects. These tools mostly are vegetables and other kinds of food. Take bone breaks, for example. You want to use something crunchy and snapping. For this I'd highly recommend Chinese cabbage or celery. Single leaves or sticks make great bone-snapping sounds when broken fast.

Techniques an actor can use to prepare for their role

Hot Seatiing	A widely used and very effective Drama strategy. Questions are asked to someone sitting in the 'hot-seat' who answers in character.
Dramatic Monologue	a speech or narrative by an imagined person, in which the speaker inadvertently reveals aspects of their character while describing a particular situation or series of events.

Why Issue-Based Drama?

'Theatre, as the most public of art forms, has a particular part to play in the collective exploration of ideas, values and feelings – as a space and place in which society might be reshaped through the imagination.' (Nicholson 2005: 19)

- Greek Theatre
- Developing insight/understanding/ empathy
- Transformation/Change
- Creates discussion
- Sensitive way to approach difficult topic

Individuals often become homeless as a result of extreme personal difficulties, which may take the form of:

- A troubled childhood
- Mental or physical illness
- Involvement in crime, which may have commenced at an early age
- Substance misuse
- Relationship breakdown
- Victimisation by violent crime
- Bankruptcy
- Ejection from the home of a relative or friend
- Eviction from a rented property

EMPATHY

Crisis

We are the national charity for homeless people. We help people directly out of homelessness and campaign for the changes needed to solve it altogether.

We protect, support and nurture the UK's most vulnerable children no matter who they are or what they have been

Barnardos

Throughout the piece you will be asked to write in role. This may be as a diary entry or a stream of consciousness piece of writing. You will also have to compile reports and look at how the authorities try to deal with teenage runaways; finding positive and nurturing ways of helping people.

centrepoint give homeless young people a future

- Provide a warm, safe room for a homeless young person, giving them the stability and security they need to overcome past trauma and begin a new life
- Support young people with counselling, health support and practical advice
- Give young people the skills they need to find a job, or support them into education
- Help young people move on independently, rebuilding their lives and relationships

Other Key Forms of Theatre that you will Explore

Documentary Theatre	**Documentary theatre** is **theatre** that uses pre-existing **documentary** material (such as newspapers, government reports, interviews, journals, and correspondences) as source material for stories about real events and people, frequently without altering the text in performance.
Promenade Theatre	As a genre, promenade theatre is extremely versatile. With no formal stage, and the audience and actors occupying the same space, it allows for experimentations with both new and old plays, and explores what the theatrical experience can entail for an audience. In moving the audience around throughout the performance, promenade theatre also pushes boundaries of setting in a way that can't be achieved in regular theatre.
Monologue	Characters express their thoughts through monologues, and use them to deliver important speeches to the audience and other characters. They can be used to share feelings, plans, anxieties—anything that a character needs to communicate that can only be accomplished through speech.

KNOWLEDGE

LIONHEART
ACADEMIES TRUST

Biology Topic B5 + B6
Communicable Diseases

ORGANISER

Section 4: Preventing Infections

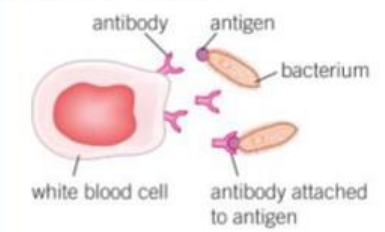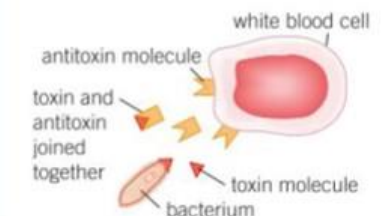|	
Hygiene	Hand washing, disinfectants on work surfaces, keeping raw meat away from food
Isolation of infected individuals	Infected individuals kept separate from healthy individuals
Destroying and controlling vectors	By killing or controlling vectors e.g. mosquitos, aphids, rodents etc the spread of disease is reduced
Vaccination	Body is injected with a small amount of inactive pathogen. If you are infected your body has developed immunity to the pathogen.

Section 6: Clinical Trials

Trial Stage	Purpose
Preclinical – cells, animals	Test for **toxicity** and **efficacy** before testing humans
Healthy volunteers	**Very low doses** to test for **toxicity.**
Patients	Larger groups. Test for **toxicity**, **efficacy** and **dose. Placebos** may be used in a **double-blind trial**.

Clinical Trial Key Terms

Placebo	A drug with **no active ingredients**, designed to **mimic a real drug**. Used to test if the effects of a drug on a patient are just **psychological**.
Double-blind trial	The volunteers do not know which group they are in, and neither do the researchers, until the end of the trial
Toxicity	How **harmful** the drug is. May have dangerous **side effects**.
Efficacy	How **effective** the drug is.
Dose	The **amount** of the drug given to the patient.

Section 5: Ways in which white blood cells destroy pathogens

Role of white blood cell	How it protects you against disease
Ingesting microorganisms	Some white blood cells ingest (take in) pathogens, digesting and destroying them so they cannot make you ill.
Producing antibodies	Some white blood cells produce special chemicals called antibodies. These target particular bacteria or viruses and destroy them. You need a unique antibody for each type of pathogen. When your white blood cells have produced antibodies once against a particular pathogen, they can be made very quickly if that pathogen gets into the body again. This stops you getting the disease twice.
Producing antitoxins	Some white blood cells produce antitoxins. These counteract (cancel out) the toxins released by pathogens.

Section 7:

Drugs from plants	Traditionally drugs were extracted from plants
Penicillin	Discovered from penicillium mould

Section 1: Monoclonal antibodies

Monoclonal Antibodies	**Monoclonal antibodies** are identical copies of **one** type of **antibody** produced in a laboratory. **How to produce monoclonal antibodies:** 1. A mouse is **injected** with a pathogen 2. White blood cells called **lymphocytes** produce **antibodies** 3. Lymphocytes are removed from the mouse and **fused** with rapidly dividing mouse **tumour cells** 4. The new cells are called **hybridomas**. 5. The hybridomas divide rapidly and release lots of **antibodies** which are then collected

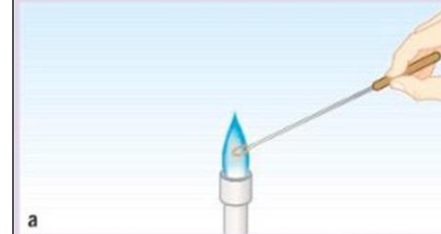### Uses of Monoclonal Antibodies

Used in treatment of diseases and monoclonal antibodies have been developed against the antigens on cancer cells.

Monoclonal antibodies are bound to radioactive substances (or toxic drugs and chemicals) that stop cells growing and dividing.
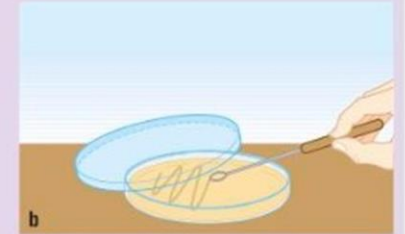
Monoclonal antibodies have side effects and are not as widely used in cancer treatment.

Monoclonal antibodies are used for diagnosis in pregnancy tests, in labs to measure levels of hormones and other chemicals in the blood to detect pathogens and to identify molecules in cells or tissues.

Section 2: Culturing microorganisms in the laboratory

a. Sterilise the inoculating loop used to transfer micro-organisms to the agar by heating it until it is red hot in the flame of a Bunsen and then letting it cool. Do not put the loop down or blow on it as it cools.

b. Dip the sterilised loop in a suspension of the bacteria you want to grow and use it to make zigzag streaks across the surface of the agar. Replace the lid on the dish as quickly as possible to avoid contamination.

c. Fix the lid of the Petri dish with adhesive tape to prevent microorganisms from the air contaminating the culture – or microbes from the culture escaping. Do not seal all the way around the edge – as oxygen needs to get into the dish to prevent harmful anaerobic bacteria from growing.

d. The Petri dish should be labelled and stored upside down to stop condensation falling onto the agar surface.

Section 3: Preventing Bacterial Growth

Bacteria multiply by simple cell division if they have enough nutrients and a suitable temperature

You can investigate the effects of disinfectants and antibiotics on bacterial growth using agar plates and calculating the cross-sectional area of colonies grown or of clear areas of agar

Section 4: More about Plant Diseases

Plants can be infected by a range of viral, bacterial and fungal pathogens as well as insect pests.

We cant detect a plant is diseased by looking for unusual growths, spots or discoloured leaves and malformed leaves and stems.

If a plant disease is suspected then it can be identified by:
Gardening manuals
Gardening websites
Test kits containing monoclonal antibodies
Taking infected plants to a laboratory to identify the pathogen

Monoclonal antibodies are used for diagnosis in pregnancy tests, in labs to measure levels of hormones and other chemicals in the blood to detect pathogens and to identify molecules in cells or tissues.

Section 6: Deficiency of Mineral Ions

Nitrate ions	Needed by plants for protein synthesis and growth. Lack of nitrate ions results in stunted growth of plants.
Magnesium ions	Needed by plants to produce chlorophyll. Lack of magnesium ions results in chlorosis (yellowing of leaves due to lack of chlorophyll)

Section 7: Plant defence responses

Type of plant defence used (mechanical, physical or chemical)	What is the plant being defended against?	Describe the defence being used
Mechanical	Herbivores eating it	Thorns or hairs
Chemical	Pathogens/bacteria Herbivores/animals	The chemical released is antibacterial or poisonous
Physical	Herbivores and pathogen entry	Dead bark coating which falls off
Physical	Insects such as aphids	Waxy cuticle/cellulose cell walls are hard to penetrate

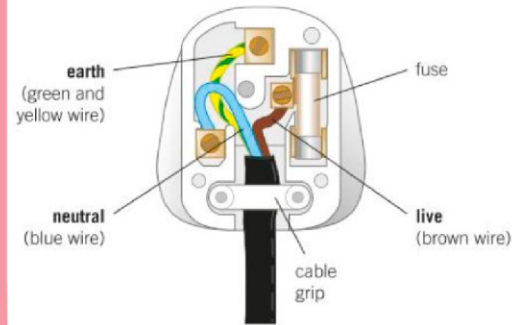**The presence of pests**

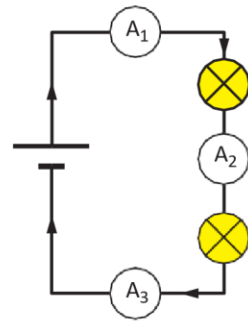**Stunted growth**

Chlorosis

Thorns

Wiring a Plug

- Most appliances are attached to the electricity supply using a three pin plug.
- These are usually made from a hard wearing plastic as plastic is an **insulator**.
- There are three wires in the plug; the Earth, the live and the **neutral** wire.
- Plugs contain a fuse which breaks the circuit if the current flowing gets too high.
- We use brass for the pins as it is a good conductor and hard wearing.
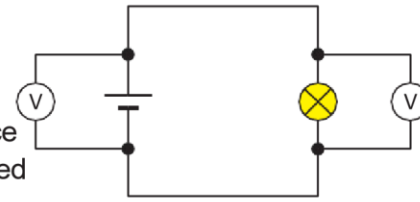- Copper is used for the wires as it is an excellent conductor.

earth (green and yellow wire)
fuse
neutral (blue wire)
live (brown wire)
cable grip

Current

- **Current** is the amount of **charge** flowing per second
- The charges that flow in a circuit are **electrons**, they are negatively charged
- **Electrons** leave the negative end of the **cell** and travel around the circuit to the positive end of the cell
- Current has the unit of Amps (A) and is measured with an **ammeter** (which is placed in series or in the main circuit)
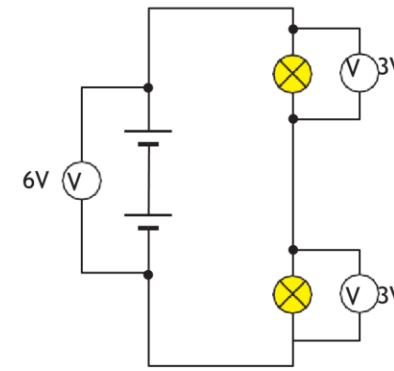
A₁ A₂ A₃

Potential difference

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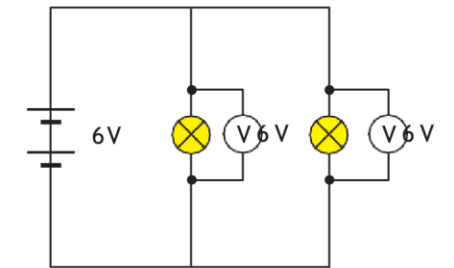
Series circuits

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

6V, V 3V, V 3V

Parallel circuits

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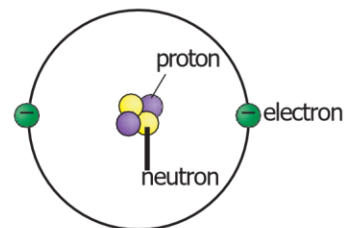- Adding more bulbs does not affect the brightness of the bulbs

6V, V 6V, V 6V

Electromagnets

- **Electromagnets** are made by wrapping a coil of wire around a magnetic **core**
- Electromagnets only work when electricity is flowing through the coil, which means that they can be turned on and off
- Electromagnets are also stronger than **permanent** magnets
- The electromagnet will produce the same magnetic field shape as a bar magnet

iron core with current on

- You can increase the strength of an electromagnet by:
  - Increasing the number of turns on the coil around the core of the electromagnet
  - Increasing the current which is flowing through the coil of wire
  - Using a more magnetic material for the core, e.g. iron rather than aluminium

Electrical signals in the body

- **Nerve** cells are long and thin and carry electrical impulses around the body.
- Electricity from our surroundings can over power these impulses and cause us harm.
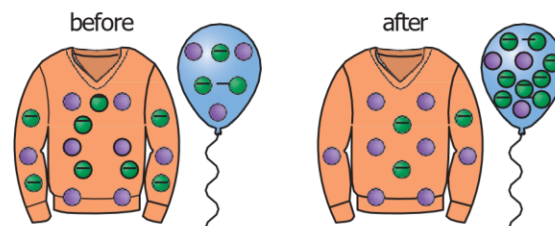
The atom

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

proton
electron
neutron

Static electricity

- Static electricity is the caused by the rubbing together of two **insulators**
- This causes electrons to be transferred, leaving one object with a positive charge, and one object with a negative charge
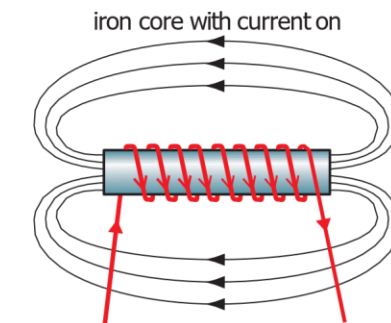
before   after

- Like charges will **repel**, opposite charges will **attract**

🔍 **Key terms**   Make sure you can write definitions for these key terms.

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

Satin

Fibres it can be made from: Silk, Polyester

Construction: Woven

Properties: Smooth, Shiny (Lustre), expensive, easy to snag.

Cotton

Fibres it can be made from: Cotton Plant

Construction: Woven or knitted

Properties: Smooth, Comfortable to wear, Strong, hardwearing, absorbent, easy to wash, cheap, creases, can shrink.

Velvet

Fibres it can be made from: Silk, Viscose, Polyester.

Construction: Woven.

Properties: Short dense pile, soft, smooth, shiny (lustre), good drape.

Wool

Fibres it can be made from: Sheep, goat, Alpaca, Rabbit, Acrylic

Construction: Woven or knitted

Properties: Warm, absorbent, low flammability, crease resistant, can shrink.

Lace

Fibres it can be made from: Cotton, silk, linen, polyester.

Construction: looped, braided or twisted.

Properties: Delicate, open web like patterns, different patterns can be created.

Faux Fur

Fibres it can be made from: Acrylic, Polyester

Construction: Knitted

Properties: Soft, resilient, durable, and warm, luxurious can range in appearance of different animal

Year 8 DT Textiles Knowledge Organiser

From Fibre to Fabric

Fibres are the raw material used to make textile items. They can come from natural sources like plants and animals or they are synthetic and are made from oil and coal and chemicals.

They are spun or twisted together to make yarns.

Yarns are then joined together in different ways. They can be interlaced, interloped or bonded together to make fabrics. This example is a woven fabric where the yarns are interlaced

Chiffon

Fibres it can be made from: Silk, Cotton, Polyester, Nylon.

Construction: Woven

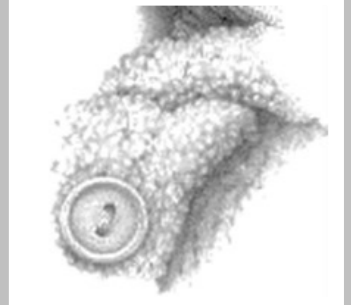**Properties:** Shimmery, sheer, transparent, Lightweight, very fine mesh.

How to Draw Fabric

Freehand sketching is a way for designers to communicate ideas quickly and easily.
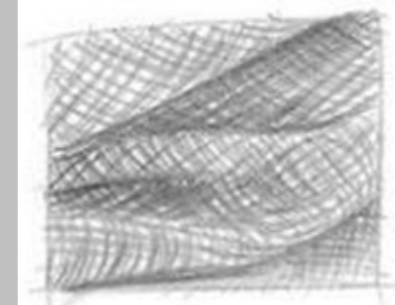
Always lightly sketch the outline first.

Then add shapes to represent folds and drape.

Fleece

BURLAP

SILK

Then add light, medium and dark tome to create depth, folds and texture.

Construction of Fabric

A.   Woven

B.

Knitted

Y8 French: Toute une histoire

Scan the QR code to access this vocab on Quizlet.

Verbes à l'infinitif

pousser	to push
travailler	to work
frotter	to scrub
nettoyer	to clean
préparer	to prepare
porter	to wear
visiter	to visit
crier	to shout
rencontrer	to meet
quitter	to leave
demander	to ask
tuer	to kill
trouver	to find
transformer	to transform
chercher	to look for

Intensifiers

un peu	a bit
très	very
vraiment	really
assez	quite
trop	too
complètement	completely
souvent	often
extrêmement	extremely

SLANG EXPRESSIONS:
carrément = very
vachement = very

Opinions

c'est = it is
c'était = it was
ce sera = it will be
cool=cool
super=super
génial = great
intéréssant=interesting
déprimant= depressing
ennuyeux=boring
affreux=awful

Quand? — When?

tous les jours	everyday
à huit heures	at 8 o'clock
de 8 heures à 9 heures = from 8 to 9	
le week-end	at the weekend
le samedi	on saturday
le matin	in the morning
l'après-midi	in the afternoon
le soir	in the evenning

Qui? — Who?

la/une princesse	the/a princess
le/un chevalier	the/a knight
le/un roi	the/a knig
la/une reine	the/a queen
le/un dragon	the/a dragon
le/un prince	the/a prince
la/une sorcière	the/a witch

Comment? — How?

facilement	easily
lentement	slowly
rapidement	quickly
joyeusement	happily
tristement	sadly

Où? — Where?

dans le village	in the village
dans le château	in the castle
dans la fôret	in the forest
dans le parc	in the park
dans sa chambre	in his/her bedroom
dans la cuisine	in the kitchen
dans le salon	in the living room
dans la salle de bains	in the bathroom

Les adjectifs

+e in feminine

méchant	nasty
menaçant	threatening
élégant	elegant
laid	ugly
joli	pretty
effrayant	scary
content	happy
cruel	cruel
mignon	sweet/cute
fier	proud
désespéré	desperate
fatigué	tired
exténué	exhausted
excité	excited
rusé	cunning
cultivé	cultured
poilu	hairy

+se in feminine

généreux	generous
capricieux	temperamental
jaloux	jealous
somptueux	gorgeous
amoureux	in love
monstrueux	monstruous
mystérieux	mysterious

no change in feminine

drôle	funny
espiègle	mischievous
rude	unfeeling
honnête	honest
magnifique	amazing
égoïste	selfish
agréable	nice
sympa	kind

irregular

vieux/vieille	old
beau/belle	handsome/pretty

La routine. Reflexive verbs

se réveiller	to wake up
se lever	to get up
se laver	to have a wash
s'habiller	to get dressed
se doucher	to have a shower
se brosser les dents	to wash one's teeth
se relaxer	to relax
se maquiller	to put make-up on
se coiffer	to style hair
se moquer de	to make fun of
se coucher	to go to bed
se promener	to walk

Connectives

d'abord	first
ensuite	afterwards
après	after
puis	then
alors que	whereas
finalement	finally
mais	but
par contre	however

Complex connectives

qui	who
où	where

Les verbes

Il (n') est (pas)	He is(n't)
Elle (n') est (pas)	She is(n')t
Ils (ne) sont (pas)	They are(n't)
Elles (ne) sont (pas)	They are(n't)
Ce (n') est (pas)	It is(n't)

La lecture — Reading

J'aime lire	I like reading
je lis souvent	I read often
récemment j'ai lu	recently I have read
les romans	novels
les BD (Bandes dessinées)	comics
les magazines de foot	football magazines
Les magazines féminins	girls magazines
Les livres d'horreur	horror books
Mon auteur préféré s'appelle	my favourite author is called

Time phrases

Le week-end dernier	last weekend
L'année dernière	last year
Hier (matin)	yesterday (morning)
Un jour	one day
Demain (après-midi)	tomorrow (afternoon)
A l'avenir	in the future
Ce soir	tonight
Le weekend prochain	next weekend
L'année prochaine	next year
La prochaine fois	next time

Year 8 - Nutrients

COOKING AND NUTRITION

Food safety and hygiene is about protecting people and reducing the risk of food poisoning.

CLEAN

SEPARATE

COOK

CHILL

100°C — COOKING
75°C
63°C
DANGER ZONE
5°C — STORAGE
0°C
-18°C

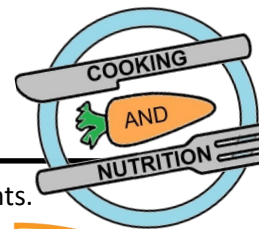https://www.youtube.com/watch?v=zE0ypKtFuWQ

Carbohydrates are *macro*nutrients.

The main function is to **provide energy** to the body.

2 main types = **starchy** (complex) and **sugary** (simple)

Complex = long lasting energy;
Simple = short burst of energy

https://www.youtube.com/watch?v=PByM12M1n3A
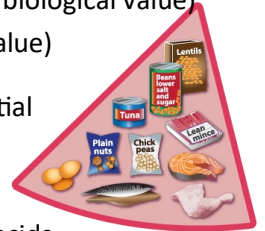https://www.youtube.com/watch?v=Xto8ZqCYDvY

Proteins are *macro*nutrients.

They're used by the body for **growth, repair** and maintenance of **muscle and tissue**.

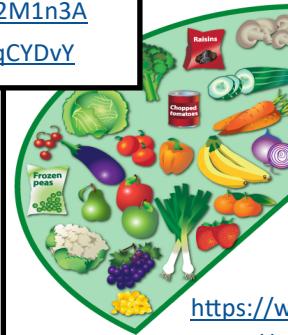2 main types = **HBV** (high biological value) and **LBV** (low biological value)

HBV = contain all 9 essential amino acids;
LBV = contain some but not all 9 essential amino acids

https://www.youtube.com/watch?v=61LeIea02ao
https://www.youtube.com/watch?v=KSKPgaSGSYA

vitamins and minerals are *micro*nutrients. They have a wide range of health benefits.

https://www.youtube.com/watch?v=K5pW7rpMTQw
https://www.youtube.com/watch?v=kteZneJm1EI
https://www.youtube.com/watch?v=1u5HOURq7kQ

The Eatwell Guide shows the types and proportions of foods people need for a healthy and well-balanced diet.

Eatwell Guide

https://www.youtube.com/watch?v=7MlE4G8ntss
https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/
https://www.youtube.com/watch?v=8aWqZd9RScQ

Key vocabulary

safety / hygiene
nutrients / sources / function
carbohydrates / protein / amino acids
HBV / LBV / protein complementation
fibre / vitamins / minerals / fat / water
deficiency / excess
convection / conduction / radiation

Methods of cooking

Baking
Barbecuing
Searing
Roasting
Sauteeing
Deep Frying
Shallow Frying
Stir Frying
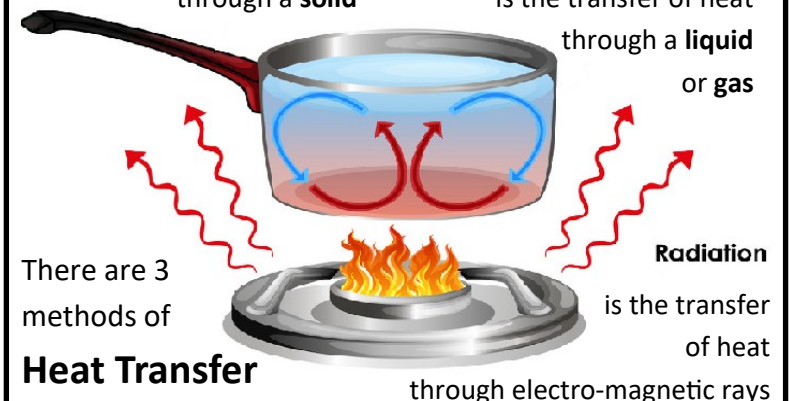Grilling
Pan Frying

https://www.youtube.com/watch?v=fiFi-d0RwKo

Conduction is the transfer of heat through a **solid**

Convection is the transfer of heat through a **liquid** or **gas**

Radiation is the transfer of heat through electro-magnetic rays

There are 3 methods of **Heat Transfer**

https://www.youtube.com/watch?v=vg5k6t6uZwE

Year 8 Summer Term Slavery and Protest

Lesson Content

- The Slave Trade
- Everyday Life
- Punishment
- How did slaves fight back?
- The abolition of Slavery
- The growth of Empire
- The American Revolution
- Political protest in Britain
- Political change in Britain
- Life in Britain - Dirty Towns
- Life in Britain - Class System

Key resources: www.tecchistoryks3.blogspot.com

Key dates

18th Century onwards	Sugar plantations expand rapidly in the Caribbean
1780-81	"The Brookes", a famous slave ship is constructed in Liverpool
1807	Transportation of slaves on British ships is banned
1819	The Peterloo massacre
1834	The Tolpuddle Martyrs are transported to Australia
1838	Slavery is banned in the British Empire
1832	The Reform Act
1848	Second great Chartist petition
1867	Male workers in towns get the vote
1884	Male workers in the countryside get votes
1889	Charles Booth's report into living conditions published
1901	Queen Victoria dies

Key people

Sir John Hawkins	Sir John Hawkins was a pioneering English naval commander and administrator, slave trader, spy, merchant, navigator, shipbuilder, and privateer.
Edward Colston	Bristol-born **merchant** who made the bulk of his fortune from the **slave trade**, particularly between 1680 and 1692.
Olaudah Equiano	Enslaved as a child, he was taken to the Caribbean and sold as a slave to a Royal Navy officer. He was sold twice more but purchased his freedom in 1766
Mary Prince	The First Woman to Present a Petition to Parliament. **Mary Prince** was born in 1788, to an enslaved family in Bermuda. She was sold to a number of brutal owners and suffered from terrible treatment
Toussaint L'Overture	Led a successful slave revolt and emancipated the slaves in the French colony of Saint-Domingue (Haiti). A formidable military leader, he turned the colony into a country governed by former black slaves
Queen Victoria	**Queen** of the United Kingdom of Great Britain and Ireland from 20 June 1837 until her death in 1901.
George Washington	**George Washington** was an American political leader, military general, statesman, and Founding Father who served as the first president of the United States
William Lovett	British activist and leader of the Chartist political movement. He was one of the leading London-based artisan radicals of his generation.
John Snow	English physician and a leader in the development of anaesthesia and medical hygiene.
Joseph Bazalgette	19th-century English civil engineer. His major achievement was the creation (in response to the Great Stink of 1858) of a sewer network for central London which was instrumental in relieving the city from cholera epidemics, while beginning to clean the River Thames.

Key Words - Glossary

Benin	a republic in W Africa, on the Bight of **Benin**, a section of the Gulf of Guinea: in the early 19th century a powerful kingdom,	Chartists	**Chartism** was a working class movement, which emerged in 1836 and was most active between 1838 and 1848. The aim of the **Chartists** was to gain political rights and influence for the working classes.
Triangular trade	the trade in the 18th and 19th centuries that involved shipping goods from Britain to West Africa to be exchanged for slaves, these slaves being shipped to the West Indies and exchanged for sugar, rum, and other commodities which were in turn shipped back to Britain.	Tolpuddle Martyrs	The Tolpuddle Martyrs were six agricultural labourers from the village of Tolpuddle in Dorset, England, who, in 1834, were convicted of swearing a secret oath as members of the Friendly Society of Agricultural Labourers.
middle passage	the sea journey undertaken by slave ships from West Africa to the West Indies	Ballot	a system of voting secretly and in writing on a particular issue.
overseer	a person who supervises others, especially workers.	Democracy	a system of government by the whole population or all the eligible members of a state, typically through elected representatives.
castration	the removal of the testicles of a male animal or man	Rotten borough	A **rotten borough** was a parliamentary borough or constituency in England, Great Britain, or the United Kingdom before the Reform Act 1832, which had a very small electorate and could be used by a patron to gain unrepresentative influence within the unreformed House of Commons.
abolitionist	a person who favours the abolition of a practice or institution, especially capital punishment or (formerly) slavery.	hygiene	conditions or practices conducive to maintaining health and preventing disease, especially through cleanliness.
independence	the fact or state of being independent.	Social class	a set of hierarchical **social** categories, the most common being the upper, middle and lower **classes**.
13 colonies	a group of colonies of Great Britain on the Atlantic coast of North America founded in the 17th and 18th centuries which declared independence in 1776 and formed the United States of America.	slums	a highly populated urban residential area consisting mostly of closely packed, decrepit housing units in a situation of deteriorated or incomplete infrastructure, inhabited primarily by impoverished persons.

Key Assessment: 50 minute assessment based on skills from Paper 3 GCSE History
Questions 6 – 8 or 9

De vacaciones — *On holiday*

Spanish	English
¿Adónde fuiste?	*Where did you go?*
el año pasado	*last year*
el verano pasado	*last summer*
Fui a...	*I went to...*
Escocia	*Scotland*
España	*Spain*
Francia	*France*
Gales	*Wales*
Grecia	*Greece*
Inglaterra	*England*
Irlanda	*Ireland*
Italia	*Italy*
¿Con quién fuiste?	*Who did you go with?*
Fui con...	*I went with...*
mis amigos, mis amigas	*my friends*
mi clase	*my class*
mi familia	*my family*
mis padres	*my parents*
¿Cómo fuiste?	*How did you get there?*
Fui en, Fuimos en...	*I went by, We went by...*
autocar	*coach*
avión	*plane*
barco	*boat, ferry*
coche	*car*
tren	*train*

Palabras muy frecuentes — *High-frequency words*

Spanish	English
a, al, a la	*to the*
en	*by*
mi, mis	*my*
¡Qué...!	*How...!*
además	*also, in addition*

¿Cuándo? — *When?*

Spanish	English
luego	*then*
más tarde	*later*
después	*afterwards*
el primer día	*on the first day*
el último día	*on the last day*
por la mañana	*In the morning*
por la tarde	*in the afternoon*

Exclamaciones — *Exclamations*

Spanish	English
¡Qué bien!	*How great!*
¡Qué bonito!	*How nice!*
¡Qué divertido!	*How funny!*
¡Qué guay!	*How cool!*
¡Qué rico!	*How tasty!*
¡Qué suerte!	*How lucky!*
¡Qué aburrido!	*How boring!*
¡Qué horror!	*How dreadful!*
¡Qué lástima!	*What a shame!*
¡Que mal!	*How bad!*
¡Qué rollo!	*How annoying!*

¿Qué hiciste? — *What did you do?*

Spanish	English
Bailé.	*I danced.*
Compré una camiseta.	*I bought a T-shirt.*
Descansé en la playa.	*I relaxed on the beach.*
Mandé SMS.	*I sent texts.*
Monté en bicicleta.	*I rode my bike.*
Nadé en el mar.	*I swam in the sea.*
Saqué fotos.	*I took photos.*
Tomé el sol.	*I sunbathed.*
Visité monumentos.	*I visited monuments.*
No nadé en el mar.	*I didn't swim in the sea.*
¿Qué hiciste el último día?	*What did you do on the last day?*
Bebí una limonada.	*I drank a lemonade.*
Comí paella.	*I ate paella.*
Conocí a un chico guapo.	*I met a cute boy.*
Conocí a una chica guapa.	*I met a cute girl.*
Escribí SMS.	*I wrote texts.*
Salí con mi hermano.	*I went out with my brother.*
Salí con mi hermana.	*I went out with my sister.*
Vi un castillo interesante.	*I saw an interesting castle.*

¿Cómo te fue? — *How was it?*

Spanish	English
Fue divertido.	*It was fun or funny.*
Fue estupendo.	*It was brilliant.*
Fue fenomenal.	*It was fantastic.*
Fue flipante.	*It was awesome.*
Fue genial.	*It was great.*
Fue guay.	*It was cool.*
Fue regular.	*It was OK.*
Fue un desastre.	*It was a disaster.*
Fue horrible.	*It was horrible.*
Fue horroroso.	*It was terrible.*
Fue raro.	*It was weird.*
Me gustó.	*I liked it.*
Me encantó.	*I loved it.*
¿Por qué?	*Why?*
porque	*because*
Hizo buen tiempo.	*The weather was good.*
Llovió.	*It rained.*
Perdí mi pasaporte.	*I lost my passport.*
Perdí mi móvil.	*I lost my mobile.*

To revise this topic

SCAN ME

Near future tense

The near future is used to talk about what you are going to do. Use the present tense of the verb **ir** followed by **a** plus the <u>infinitive</u>.

voy a salir con mis amigos	I am going to go out with my friends
vas a comer paella	you are going to eat paella
va a ir a una fiesta	he/she is going to go to a party
vamos a jugar al fútbol	we are going to play football
vais a chatear	you are going to chat online
van a hacer los deberes	they are going to do their homework

Past tense

The <u>preterite</u> tense is used to talk about **completed** actions that have happened in the **past.**

Ayer hablé con mis abuelos   Yesterday I spoke with my grandparents

El año pasado visité Barcelona   <u>Last year I visited Barcelona</u>

How to form the Preterite Tense

We form the <u>preterite</u> in the same way do the present tense. It just requires a different set of endings.

- first start with the infinitive form of the verb (the form used in the dictionary. E.g. <u>hablar</u> = to speak).
- look at the last two letters of the infinitive and decide whether it's an **-ar**, **-er** or **-ir**. verb.
- then remove the **-ar**, **-er** or **-ir** to find the stem.
- then add the following endings:

	Hablar	Comer	Vivir
I	Habl**é**	Com**í**	Viv**í**
You Singular	Habl**aste**	Com**iste**	Viv**iste**
He/She/It	Habl**ó**	Com**ió**	Viv**ió**
We	Habl**amos**	Com**imos**	Viv**imos**
You Plural	Habl**asteis**	Com**isteis**	Viv**isteis**
They	Habl**aron**	Com**ieron**	Viv**ieron**

* Notice that the <u>Er</u> and <u>Ir</u> endings are the same

The conditional

Me/Te gustaría is the conditional form of **me/te gusta**. You use it to say what you <u>would</u> like to do. It is often followed by the infinitive.

¿**Te gustaría** ir a la cafetería?   Would you like to go to the café?

Me gustaría ir al cine.   I would like to go to the cinema.

Reflexive verbs

Reflexive verbs include a reflexive pronoun. They often describe an action you do to yourself – for example, **lavarse** (to wash oneself/ to get washed).

me lavo	I wash myself/get washed
te lavas	you (sg) wash yourself
se lava	he/she washes him/herself
nos lavamos	we wash ourselves
os laváis	you (pl) wash yourselves
se lavan	they wash themselves

Adjective endings

Colour words are adjectives and generally follow the normal adjective patterns.

ending in…	singular		plural	
	masculine	feminine	masculine	feminine
-o	rojo	roja	rojos	rojas
-e	verde	verde	verdes	verdes
-a	rosa	rosa	rosas	rosas
consonant	marrón	marrón	marrones	marrones

Using 3 tenses

Look carefully at verb forms to see which tense someone is using:

present	preterite	near future
bailo	bailé	voy a bailar
como	comí	voy a comer
veo	vi	voy a ver
salgo	salí	voy a salir
voy	fui	voy a ir
es	fue	va a ser

Look at time-markers for clues:

normalmente	el fin de semana pasado	el fin de semana que viene
generalmente	el año pasado	el año que viene
los viernes	el viernes pasado	el próximo viernes

Using 3 tenses

Different types of verbs work like this in the 'I' form in the present, preterite and near future. Train yourself to spot verbs in different tenses:

	infinitive	present	preterite	near future
regular verbs	llevar comer vivir	llevo como vivo	llevé comí viví	voy a llevar voy a comer voy a vivir
stem-changing verbs	jugar	juego	jugué	voy a jugar
irregular verbs	hacer ir ver ser	hago voy veo soy (es → it is)	hice fui vi fui (fue → it was)	voy a hacer voy a ir voy a ver voy a ser (va a ser → it is going to be)

Year 8 CRE – Diversity and Discrimination

Key Words

Equality

Rights

Difference

Characteristic

Law

Behaviour

Responsibility

Treatment

Islamophobia

Discrimination

Religious discrimination in the UK

Religion and belief discrimination is illegal in the UK and is listed as a protected characteristic in the Equality Act 2010.

Protection is given to those with any religion, or any religious or philosophical beliefs as well as those without a religion or belief.

Religious hate crime has risen in England and Wales by 40% in recent years. More than half of the incidents recorded are directed towards Muslims.

Key Facts

- 94,098 hate crimes were recorded in 2018.
- Police believe the spike in religious hate crime is due to terror attacks at the time.
- Religiously motivated hate crime if often not reported to the police.

Key Questions

Should we respect everyone?

Why are people different?

What is in place to make sure people are treated equally?

Why are people treated differently?

What does it mean to be a good person?

Do we all have a part to play in making sure everyone has equal rights?

Ergonomics is the study of how humans interact with their environment and the objects within those environments.

A successful design must fit the body , be comfortable , safe and easy to use. Ergonomic features could include any of the following:

Shape – the product may simply have rounded corners to aid safety or it could have a complicated shape design to fit a particular of the body.

Texture – the product may have ribbed or rubberized grip to prevent it slipping from your hand.

Colour– the product may have significant purpose. Under the bonnet of a car all the components that are required to be checked by the driver are normally clearly colour coded for identification and safety purposes.

Weight and size– if a product needs to be lifted or moved it will have to be manufactured to withing a certain weight and size.

Adjustment – a product that will be used by different people could offer adjustable features such as adjustable strap. This will also improve comfort.

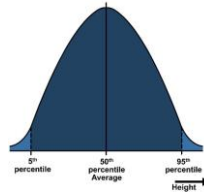Here is a list of some of the ergonomics features found on this drill:
- Moulded handle to fit the hand
- Rubberised grip
- Second handle to aid stability
- Balanced weight
- Easy-read dial
- Convenient trigger location
- Quick-battery change

Anthropometrics is derived from the words Anthropology (the study of humans) and Metrics (Latin for measurement). Simply put it is the study of human data. This covers everything from height and weight to the field of vision and provides designers with just about every measurement they would every need.

Anthropometric data present in either charts or tables.

5% of the population are smaller than 'average' person and 5% are bigger than the 'average' person. About 90% of the population are considered average.

"incremental improvements over time" some product change over time due to market pressures or the development of new technology.

Technology push

This is when a new technology has been developed which the manufacturers or inventors believe will benefit the consumer or be of interest to them. Often, the consumer will have no idea the technology exists, how it works or how it could be of benefit to them
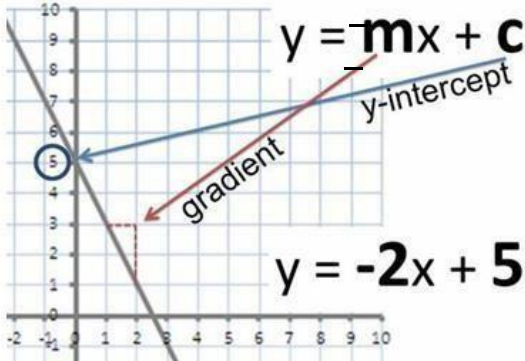
Market Pull

Sometimes manufacturers develop products that the consumer needs for or where there is a growing trend or demand for a particular product. Examples would include tablet computers, camera phones, face masks etc. When manufacturers see a demand from the consumer (or market), this is known as market pull.

Biomimicry is where nature inspires a designer / scientist / engineer, to design a product. Sometimes a designer / scientist will look at the way nature has solved a problem through evolution and then he / she will apply it to a design problem.

During the 1970s, **Alberto Alessi** began employing product designers to make original and fun designs for everyday kitchen equipment. The bright colours and stylish designs were mass produced and affordable to everyone.

Select (Spacebar) | Make Component | Interact | Component Options
Paint Bucket (B) | Eraser (E) | Component Attributes
Line (L) | Freehand | Sandbox (Terrain)
Rectangle (R) | Rotated Rectangle | From Contours | From Scratch
Circle (C) | Polygon | Smoove | Stamp
Arc | 2 Point Arc (A) | Drape | Add Detail
3 Point Arc | Pie | Flip Edge
Move (M) | Push/Pull (P) | Standard Views
Rotate (Q) | Follow Me | Iso | Top
 | | Front | Right

Topic	Key fact	Hegarty maths clip number
Expanding single brackets		160 - 161
Plotting linear graphs using a table of values	✦ Need minimum 3 pairs of coordinates. ✦ Start at x = 0. ✦ Do the positive x co-ordinates first. ✦ X coordinate: along the corridor ✦ Y co-ordinate: up the stairs. ✦ Y = mx + c will be a straight line.	206
Identifying gradient and y- intercept		207
Calculating with Decimals	Addition and subtraction: line up the decimal point. Multiplication: Change to whole numbers and remember to put the point in at the end. Division: If dividing by a decimal times both numbers by 10, 100 or 1000. Do not put decimal back in.	47 - 51
Four Operations with Fractions	To add and subtract fractions you need to write all fractions in a sum with the same denominator by writing equivalent fractions. Multiplying: Cancel down whenever possible, then multiply the numerators together and multiply the denominators together. Dividing fractions: KFC (**K**eep the first, **F**lip the second and **C**hange the sign to x)	65 -78
Sharing in a given ratio	Always find 1 part	332 to 334
Ratio problems	Set out in columns and put information below the appropriate column	335 to 338

Multi-step Angle Reasoning	Angles on a straight line add up to 180º. Angles in a triangle add up to 180º. Angles in a quadrilateral add up to 360º. Vertically opposite angles are equal. Angles around a point add up to 360º.	477 - 480, 484 - 491, 812 - 815
Pie Charts	- Find the angle for each category: 360º ÷ total frequency = the number of degrees per piece of data - To work out each category's associated angle we multiply the number of degrees per piece of data by each frequency. Top Tip: Always draw each angle clockwise, using the previous line drawn to start.	427 - 429
Proportion	Direct proportion: as one quantity increases so does the other Inverse proportion: as one quantity increases the other decreases	339 to 342

Key Vocabulary

o Numerator - the top number in a fraction. o Denominator - the bottom number in a fraction.

o Mixed number - a number consisting of an integer and a proper fraction. o Improper fraction - an improper fraction is a fraction where the top number (numerator) is greater than or equal to the bottom number (denominator): it is top-heavy.

o Direct proportion - one quantity increases at the same rate as the other quantity increases. o Inverse proportion - one quantity increases at the same rate as the other quantity decreases. o Rate - a price or charge set according to a scale or standard hotel rates.

o Quantity – the amount of something. o Expand – to multiply the term before bracket by the terms in the bracket. o Expression – collection of terms. E.g 4x + 8p.

‒ o

Gradient – the steepness of a curve

o Linear Graph – straight line graph $y = mx + c$ o Y-intercept – where the graph crosses the y axis

Mean, Median, Mode and Range (recap averages)	Mean: Add up all the numbers and then divide by the number of items. Median: Put in order and then find the middle. If two middle values then add the two middle numbers and divide by 2. Mode: The number that appears the most. There can be more than one mode. Range: The difference between the largest and smallest numbers.	404 -410 And 419 – 421

Romantics

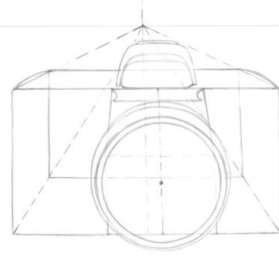| Context	Key Poets
World changing events in the late 18th century from the French Revolution to the Industrial Revolution to the Scientific Revolution of the Victorian era inspired a new movement in art, literature and thinking: The Romantics.	**Wordsworth:** William Wordsworth was not without his share of loss. In fact, he lost his mother when he was seven, and his father when he was thirteen. As if that were not enough loss for one person, three of his children preceded him in death. This background gives his poems greater meaning. Wordsworth explores the ideas that people find comfort in and are connected to nature, feeling more at home in the great outdoors than in his house. He reveals a sense of longing for what comes after life, and suggests a sense of disappointment in earthly life, hoping for better things to come.
The late 18th Century was a time of violent rebellion in parts of Europe and the New World. Conscious of the violent events across the English Channel, the British government feared similar outbreaks. The early Romantic poets tended to be supporters of the French Revolution, hoping that it would bring about political change in England. However, the bloody events in France shocked them deeply and affected their views. Poets like Wordsworth gradually became disappointed with the Revolutionaries due to the violence they were causing.	
Romantic poets - such as Wordsworth - believed that poetry should be accessible; that it should be composed in 'the language really spoken by men' and should be relevant to ordinary people. For this reason, he tried to give a voice to those who tended to be marginalised and oppressed by society: the rural poor; discharged soldiers; the insane; and, often, children.	**Blake:** William Blake was wrote poems of social protest. He believed that the working class were innocent victims of the cruellest exploitation. He explored ideas of industrialisation, with vivid descriptions of the smoke of the factories and the grey environments of London, reflecting the dull and hopeless lives of the poor. Blake focusses on two major Romantic preoccupations: childhood; and the impact of the Industrial Revolution on the natural world. Blake frequently addressed social issues in his poems and express his concerns about the way society was organised and ruled. His poem 'London' draws attention to the suffering of chimney-sweeps, soldiers and the poor while criticising the established church.
To create a better world, the Romantics said that it was necessary to start all over again with a childlike perspective. They believed that children were special because they were innocent and uncorrupted. Romantic verse was also filled with reverence for the natural world.	
The Romantics highlighted the healing power of the **imagination**, because they truly believed that it could enable people to transcend (rise above) their troubles and their circumstances. They felt their creative talents could illuminate the world and regenerate mankind spiritually.	**Keats:** Keats is most famous for his collections of odes, in which he explores extreme emotion through his hyperbolic descriptions of natural imagery and sensual language. Keats died of tuberculosis at 25.
As technology and science was developing at such a speed, the Romantics wanted to revert back to a time of simplicity and natural order, taking preference in spending time in the rural, rather than urban spaces; enjoying the simplicity and predictability of nature and the seasons; taking time to be at one with their own thoughts amongst a world that was becoming more fast-paced by the day.	**Shelley:** A well known Romantic (along with his wife, Mary Shelley, who wrote Frankenstein), was radical in his poetry and his political and social beliefs. His life was troubled with illness, family crises and tumult due to his atheism and defiance of social conventions. He died in a boating accident at the age of 29.

Vocabulary

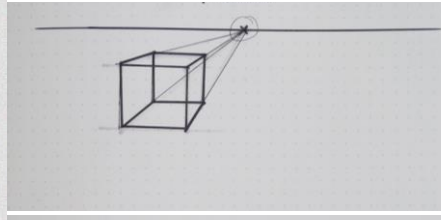|		
Liberty: the state of being free from oppression in society	Ode: a poem that expresses strong feelings for something/someone	Radical (n): a person who advocates complete change
Oppress: to treat cruelly/unfairly	Ballad: a poem that tells a story	Iambic pentameter: 5 stressed and 5 unstressed syllables in a line of poetry, creating a de-dum rhythm (5 times). These 10 syllables are likened to a heartbeat.
Dogma: principles/ideas set by those in authority	Sonnet: a 14 line poem, often exploring the theme of love	
Marginalise: to put or keep someone in a powerless/unimportant position	Rural: relating to characteristics of the countryside	Equality: the state of being equal
Tempestuous: full of strong emotions/affected by a storm	Urban: relating to characteristics of a town or city	Magnum Opus: the masterpiece, or greatest piece of work from a writer.
Adherence: Attachment/commitment to rules	Endure: suffer for an extended period of time, with patience.	
Conscience: sense of right and wrong	Fortitude: courage in the face of pain or adversity	Democratic: relating to the idea all people should be treated equally
Incontrovertible: not able to be denied/disputed	Judicious: having or showing good judgement or sense	Critic: a person who expresses disapproval of something

Playscripts

Context	Key Playwrights
The evolution of scripts can be dated back to Aristotle, a famous Greek philosopher, who believed that watching a play at the theatre would provide purification and cleansing to the spectator. This early form of theatre was seen as ritualistic, and the process of dressing up to entertain perform was not as we know it to be today.	**Arthur Miller:** An American playwright, born in New York with Polish and Jewish descent. He is famously known for his plays: All My Sons, Death of a Salesman, The Crucible and A View from the Bridge. He worked throughout his younger years and into his teenage life to support his family and pay for his own university fees, later winning many awards during his lifetime. At one point, he married icon Marilyn Monroe, divorcing after 5 years. His plays often had political messages and he was criticised by the government, even spending a short time in prison as a result of his ideas.
The ideas of performing for an audience in the form of theatre originated in Athens, Greece. Theatrical performance took place for many events, including, but not limited to: religious rituals, politics, law, athletics, the performance of music and poetry, and weddings and funerals.	
Our westernised ideas of theatre were mostly developed by the Romans in the 4th Century. The growth of the Roman Empire meant that their ideas were brought across to Europe, around the Mediterranean before reaching England, meaning that ideas of theatrical performance had become more varied and sophisticated than ever before. Unlike in Greek theatre, and then later in Shakespearean theatre, women were allowed to perform.	**Bertolt Brecht:** Brecht was born in Germany in 1898 served in the First World War. He was appalled by what he witnessed. After the war ended, he perused his career in theatre. When the Nazis came into power before the Second World War, Brecht fled Germany and his citizenship was revoked. The turmoil of the time he lived in gave him a strong opinion on politics and Brecht used the stage as a way to express his personal views.
In the early Middle Ages, churches started to adopt theatrical performance to bring to life religious scripture to make it more accessible to those who were unable to read the Latin text that was delivered during this time.	
Most of the plays that are still on our stages today from the past come from the Elizabethan era, with the famous William Shakespeare, along with other playwrights, taking centre-stage due to Queen Elizabeth's taste for plays. This allowed for widespread entertainment through the performance of plays, and people from all classes would have had access to the theatre. However, many strict, religious people thought that performance of plays was immoral.	**Henrik Ibsen** Ibsen was born in Norway and became one of the greatest Norwegian authors and playwrights of all time, largely responsible for the rise of modern realistic drama. He is often referred to as the "father of modern drama. He is now celebrated as a national symbol by Norwegians (much like how Britain views Shakespeare).

Vocabulary

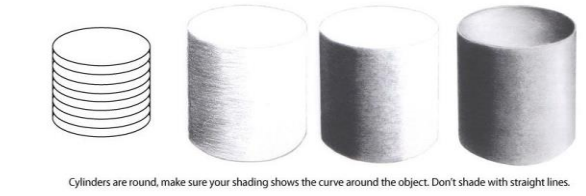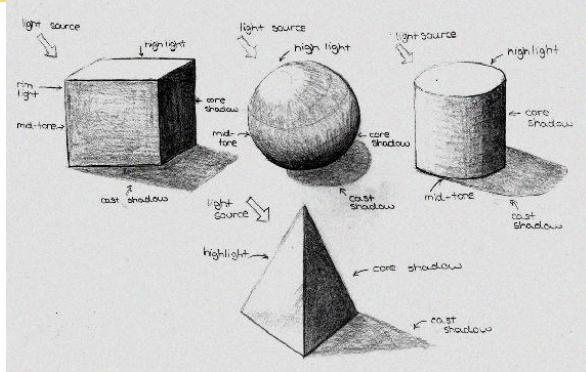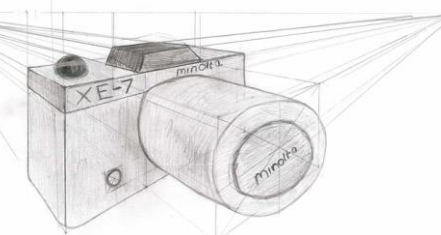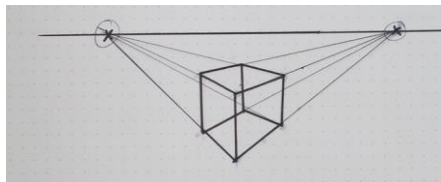|		
Theme: an idea that is the basis of a piece of art or literature	Stage directions: unspoken instructions in a playscript that actors follow	Radical (n): a person who advocates complete change
Prose: a piece of writing that follows basic grammatical conventions	Lines: in a script, this refers to the part of the play the actor has to speak	Act: an act divides the play into significant sections. Acts can include several scenes.
Poetry: a piece of writing which expresses emotion through style and rhythm	Parable: a story with a moral lesson	
Drama: a play for theatre, radio or screen	Narrator: not the character in a story, a narrator describes what is happening as the action is taking place.	Scene: a subdivision of an act. When the time or place changes, you have a new scene
Tempestuous: full of strong emotions/affected by a storm	Urban: relating to characteristics of a town or city	Magnum Opus: the masterpiece, or greatest piece of work from a writer.
Adherence: Attachment/commitment to rules	Exploitation: the action of using someone unfairly for your own benefit	
Endure: suffer for an extended period of time, with patience	Gravitas: seriousness	Interlude: a pause in time (also known as an interval in a play)
Incontrovertible: not able to be denied/disputed	Injustice: lack of fairness	Critic: a person who expresses disapproval of something

AO1 Developing ideas- mindmap, montage, artist research
AO2 Using Resources- testing out ideas/media
AO3 Recording ideas-photos and drawings
AO4 Making a personal response- final ideas
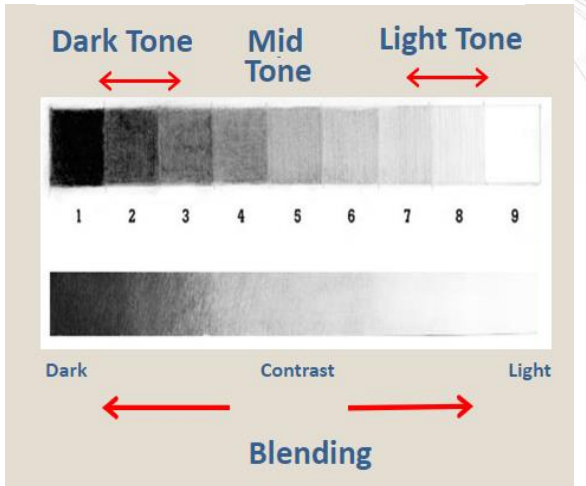
1 POINT PERSPECTIVE

2 POINT PERSPECTIVE

Cylinders are round, make sure your shading shows the curve around the object. Don't shade with straight lines.

TONE / SHADING

Dark Tone | Mid Tone | Light Tone

1 2 3 4 5 6 7 8 9

Dark — Contrast — Light

Blending

KEYWORDS:
Collage
Mixed Media
Recycle
Contrast
Shape
Form
Texture
Tone
Observation
Balance
Detail
Collage
Blending
Shade
Arrangement
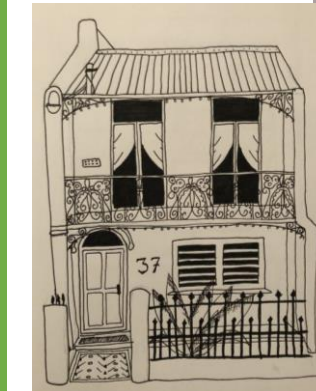Composition
Realistic
3-Dimensional
Layers
Sculpture

Jennifer Collier

Jennifer Collier is an innovative textiles and crafts artist who uses a combination of natural and found materials.

She often utilises plastics, papers and fabrics in her pieces of work which gives them a new dimension and communicates ideas about recycling, as well as themes exploring the body.

CUT PAPER   3-DIMENSIONAL

TORN PAPER

STUDENT RESPONSE

PAPER BUILDING TECHNIQUES

loop   fringe
roll   curls
tabs   cone
spiral   folded
fold & cut   extrusions   slotted