
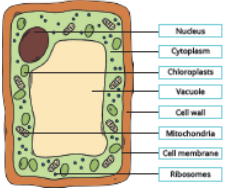
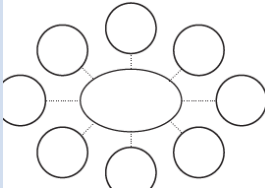


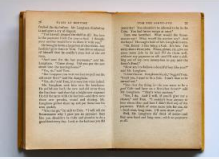



Summer 1 - Year 9 Name:

Just reading through your books or a knowledge organiser is not always an effective way to revise. Instead, you should do something with the information. Choose an example of the revision methods on the pages or see if you can come up with another method.

Subject	Page Number	Subject	Page Number
Food	3	German	29
DT	9	History	32
PE	10	English	34
Science	11	Maths	38
Computer Science	25	RE	44
Geography	26	Drama	46
Art	28	Well Being	47

Idea	Explanation
<p>Make some flash cards or PowerPoint slides. Make top trumps.</p> 	<p>Write down key words, quotation, questions or equations on one side of a card. On the other side, write the definition or answer. Use them to test yourself.</p>
<p>Plant Cell</p>  <p>Make a poster.</p>	<p>Turn your notes into posters with lots of colour and illustrations. Summarising the key information in a different way is an effective way of learning and your brain will remember the colours more easily. Do the title last!</p>
<p>Draw spider diagrams, or for the adventurous mind maps.</p> 	<p>Write the topic/keyword in the centre of your page. Add everything you know in subtopics. Then explore each subtopic in turn adding more ideas. Colour/pictures help you recall.</p>
<p>Write a song or a rap.</p> 	<p>Are there songs that stick your head. Change the lyrics to the information you want to learn. If you record and listen back it will be a more fun way of revising.</p>
<p>Plan a lesson</p> 	<p>If you teach something to someone else the chance of recalling it is really high. This has been found to be the most effective way of learning something for the long term.</p>
<p>Write a story or comic strip.</p> 	<p>Take the keywords or facts that you need to learn and turn them into a story or a cartoon. The sillier the story the more likely you are to remember it.</p>
<p>Write a quiz. Design a game.</p> 	<p>Playing is how we learn as young children and it is a very powerful way of learning throughout life. If we enjoy the game it helps us remember.</p>

## Nutrients

Macro nutrients – needed in large quantities in the diet. The three macro nutrients are: PROTEIN, CARBOHYDRATES, FAT

Micro nutrients – needed in small quantities in the diet. The two micro nutrients are: VITAMINS, MINERALS

## Protein

Proteins are made up of amino acids, often referred to as the 'building blocks' of the body. Non-essential amino acids can be made by the body, however, essential amino acids can't be made by the body and we must get from the food we eat.

High biological Value (HBV) proteins contain all the essential amino acids we need and generally come from animal sources. Low biological value (LBV) proteins are missing one or more essential amino acids and generally come from plant sources.

### Food sources

HBV - beef, pork, lamb, poultry (chicken, turkey, duck), fish, cheese, butter milk

LBV – beans, chickpeas, lentils, peas, nuts, seeds, found in smaller amounts in some vegetables such as spinach and broccoli.

### Function

Needed for growth from childhood to adulthood and the growth of nails, hair and muscle mass, repair of muscles, tissues and organs after illness or injury and to make enzymes for digestion and antibodies to stop us getting ill.

**Types:** High biological Value (HBV) and Low biological Value (LBV)

## Carbohydrates

There are two types of carbohydrates, complex and simple. They are also known as starchy (complex) and sugary (simple).

### Food sources

Starchy – bread, rice, pasta, potatoes, bagels, oats, flour, cereal and some vegetables.

Simple – fruit, some vegetables, chocolate, sweets, biscuits, cakes

### Function

Starchy/complex carbohydrates are digested slowly meaning blood sugar levels gradually increase providing a slow, steady release of energy. (long term energy).

Sugary/simple carbohydrates are digested slowly and provide short term energy

**Types:** Starchy, sugary and fibrous

### Example exam questions:

What are the two types of fat? (2 marks)

Explain the difference between a HBV and LBV protein (6 marks)

What percentage of our daily energy should come from fats? (1 mark)

What are the main differences between saturated and unsaturated fats? (6 marks)

How can one make healthy choices when choosing complex carbohydrates? (2 marks)

## Fat

There are two types of fat, saturated and non saturated.

Saturated fats are classed as 'unhealthy fats', they are solid at room temperature and are generally animal based.

Unsaturated fats are classed as 'healthier fats' and are liquid or soft at room temperature and come from plant based sources.

### Food sources

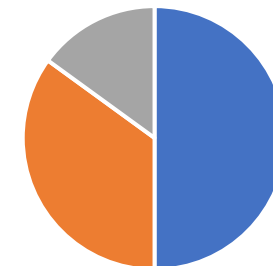
Animal – beef, chicken skin, processed meat (sausages, salami, pepperoni), bacon, butter, cheese, full fat milk

Plant – vegetable oils (sunflower, olive, rapeseed), avocado, nuts, seeds

### Function

Keeps us warm (provides insulation), secondary source of energy, protects vital organs and bones.

Energy



■ Carbohydrates ■ Fat ■ Protein ■

## Energy intake

50% - carbohydrates

35% - Fat

15% - Protein

# Factors that Affect Food Choice

When planning a meal for an event, we need to consider what factors will affect peoples food choice. After all, you want people to come and buy your food!

Nutritional Value  
Some people prefer to eat healthier food, some prefer to treat themselves to something! Are you going to offer a range of dishes to try and suit everyone?

- How healthy is your dish?
- Does it contain any vegetables?
- Is it high in protein, suitable for someone into fitness?
- Is it low calorie, suitable for someone on a low-calorie diet?
- Or low in fat, salt and sugar?



Special Diets  
Is your dish suitable for someone with a special dietary requirement?

Sometimes this can be used as a marketing tool as well.

- Vegetarian (no meat, or fish)
- Vegan (no meat, fish, eggs, dairy)
- Lactose Intolerance (no dairy)
- Coeliac (no gluten, found in wheat)
- Allergies and Intolerances

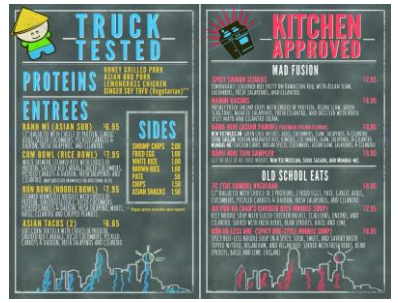


Appearance  
They say you eat with your eyes! The more appealing your dish is, the more people are going to want to buy it.

Sometimes food trucks have examples of there dishes ready made as advertising, to hopefully encourage people to buy there food.

- How colourful is your dish?
- How will it be served?
- Will you put a garnish on?

## Factors that affect food choice



Cost  
Food can be expensive! Consider how much your dish will cost and, therefor, how much you will need to sell it for.

Prioritise ingredients – which can you spend less on and not affect the overall finished dish?

Cuisine! For this task you are required to look at different cuisines and experiment with making a range of different dishes.

- Europe – classic British (pies, fish and chips)
- Indian Cuisine – Easy to add vegetables, can be eaten with a fork and can be made in advance. (Curries, breads, tandoori style chicken, onion bhaajis, samosas etc).
- Mexican – always popular as its easy to eat and packed full of flavour (Tacos, burritos, enchiladas, fajitas).
- American – possibly the most popular of them all? (burgers, chicken strips, chips, donuts, apple pie, pizza).
- Italian cuisine – Pizzas are quick and cheap to make and you can add a range of different toppings to suit different dietary needs. (Pasta, pizza, risotto, arancini).

# Homemade chips and curry sauce

## Ingredients

1 onion  
1 garlic clove  
2.5cm ginger  
1 teaspoon soy sauce  
100 - 200ml coconut milk  
300ml water  
1 tsp turmeric  
2 tbsp curry powder  
1 tbsp plain flour  
1 stock cubes  
1-2 large potatoes  
Olive oil  
Salt and pepper

## Equipment

Chopping board  
Knife  
Frying pan  
Wooden spoon  
Sieve  
Baking tray

## Method

1. Prepare your vegetables: Cut your potato, skin on into wedges or fries, finely dice the onion, mince the garlic and ginger.
2. Put the potato wedges/fries onto a baking tray lined with baking paper. Drizzle with oil, salt and pepper and roast for 30 minutes, turning once.
3. Fry your onion, garlic and ginger in 1 tbsp oil for 5 minutes.
4. Add the curry powder, turmeric and cook for a few more minutes.
5. Add the flour and mix. Add your stock cube and slowly add the water, constantly stirring. Then slowly add the coconut milk, constantly stirring.
6. Add 1tsp sugar and soy sauce, mix thoroughly.
7. Sieve your sauce before serving with your wedges/chips.

# Pizzas

## Ingredient

200g strong white bread flour,  
plus extra for dusting

50g ground semolina (or extra  
flour)

1 tsp salt

1 tsp dried yeast

1 tbsp oil

100-125ml warm water

Toppings of your choice

Grated cheese

Tomato passata

*Cook garlic, add  
the tomato passata  
and season with  
salt, pepper and  
herbs for a  
flavoursome  
tomato base.*

## Equipment

Knife, chopping board, wooden  
spoon, bowl, jug, grater, rolling  
pin, cookie cutter

**Skills:** Rich yeast dough,  
kneading, baking, grating,  
shaping,

1. Pre-heat the oven to 200°C Weigh flour and add to a bowl, add yeast and salt and oil
2. Create a well in the middle of the flour and add the oil, then gradually add the warm water and mix (**make sure not to add all at once or the dough will be too wet**)
3. When smooth, work the dough on the worktop until elastic and smooth, set aside to rise while preparing the filling (if you have plenty time, leave your dough in a warm place to prove for around an hour).
4. Wash, peel, slice your vegetables, grate the cheese.
5. If using any meat – prepare that too.
6. When all is prepared, roll out the dough thinly on a baking tray covered with baking paper.
7. Add the tomato sauce, toppings and cheese.
8. Bake until crispy (10-15min)

# Crispy chicken with sticky Asian sauce

## Ingredients

1 large chicken breast/  
200g of pork loin/Quorn or tofu  
1 egg  
30g corn flour  
100g plain flour  
1 tsp of paprika  
¼ tsp garlic powder  
Salt and pepper  
150g rice

## Sauce

1 clove of garlic  
½ tbsp white wine vinegar  
1 tbsp honey  
1 tbsp sweet chili sauce  
1 ½ tbsp tomato ketchup  
1 tbsp brown sugar  
2 tbsp soy sauce  
Optional ; sesame seeds

## Equipment

White chopping board  
red chopping board  
Knife  
Frying pan  
Saucepan  
Wooden spoon  
Wooden spatula

## Skills

Chopping  
Coating  
Boiling  
frying

## Method

1. Fill a saucepan  $\frac{3}{4}$  full and put on to boil, when the water is boiling add rice and cook for 10 minute. Once cooked drain and put into your container.
2. On a red board cut chicken/pork into bit size pieces. White board for tofu/Quorn. On a plate season PLAIN flour with paprika, garlic powder, salt and pepper.
3. Coat chicken/pork/tofu/Quorn in CORN flour, then egg ,then seasoned PLAIN flour. once you have coated all pieces fry until cooked through then transfer onto a plate whilst you make the sauce.
4. On a white board mince your garlic. Then add all of your sauce ingredients to the frying pan and simmer until the sauce thickens Add cooked chicken/pork/tofu/Quorn pieces and stir until everything is evenly coated.
5. Transfer to your container and top with a sprinkle of sesame seeds.

Next lesson you will make your own savoury recipe

# Brownies

## Ingredients

100g butter

110g dark chocolate (it MUST be dark)

Extra chocolate chunks of your choice to go into the mix

2 eggs

75g Sugar

50g muscovado sugar

75g plain flour

## Equipment

Saucepan, metal bowl, spoon, jug, weighing scales, baking tin

## Skills

Melting, using a bain-marie, mixing, baking

## Method

1. Place margarine, muscovado sugar and chocolate in the bowl and place on top of sauce pan with water.
2. Leave until melted and stir well.
3. In a separate bowl, mix eggs and caster sugar well.
4. Stir in the chocolate mix.
5. Add the flour and mix until all the flour is combined.
6. Add mixture to a greased baking tray
7. Bake in the oven 30-35min until shiny and does not wobbly when shaken.

Next lesson you will make your own sweet recipe



# Year 9 Design and Technology



These are the key principles of design we will be looking at this term when working in the Workshop. The project is to design and make a RECYCLED palette planter.

**Key Questions?**

- What is the function of a planter? Will it have any extra practical design features?
- What key aesthetics do you need to consider when designing? Will using recycled materials have an impact on the appearance?
- How will planning and measuring ensure your product is durable enough to work in outside weather conditions?

**Word Bank**

Material properties	Aesthetics	Measurements
Template	Product	
Analysis	Recycling	Selecting
Surface Treatments		Refinement



- **Biodegradable materials** - this includes food scraps, cotton, wool, wood and biodegradable plastics. Carbon emissions are minimal in the production of biodegradable plastics, but there is a risk of contamination when they are recycled.
- **Less material or reduce waste** - techniques such as **nesting** can help to reduce waste, but it may not be possible to reduce or substitute materials and create a similar standard product



Belt Sander



Metal File



Tenon Saw

# Component of fitness – Agility and co-ordination

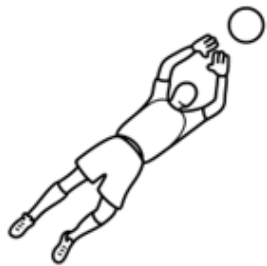
## Agility

### Definition –

The ability to **change direction quickly** to allow performers to out-manoeuvre opponents.

Athletes with good **agility** keep their entire body under control throughout.

Agility is especially important in sports that require a sharp movement or turn. *i.e. goal keeper*



## Co-ordination

### Definition –

The ability to move two or more body parts at the same time smoothly and efficiently.

Coordination is required to allow for effective application of technique. An tennis stroke requires coordinating footwork and arm action.



# Photosynthesis knowledge organiser

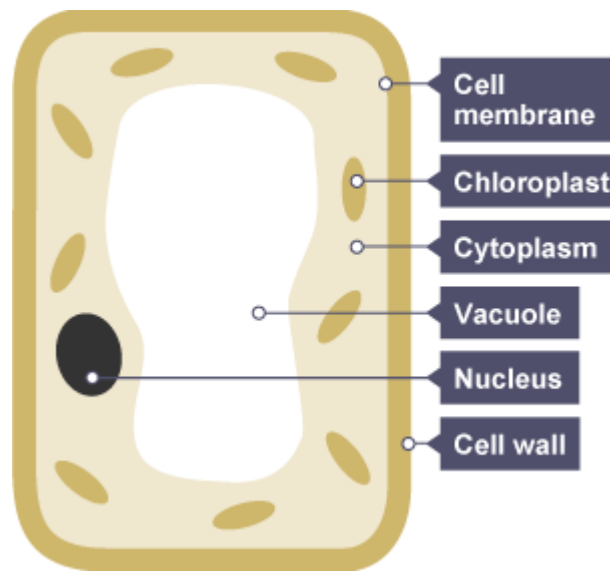
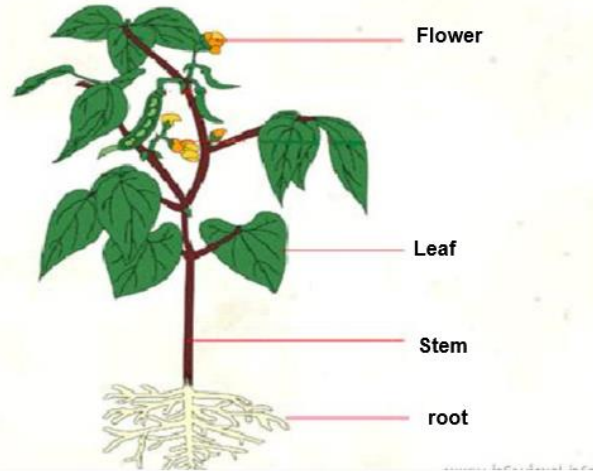
## Key points

Photosynthesis is a process that occurs in the leaves of a plant and needs both chlorophyll and light energy.

During photosynthesis, the chlorophyll in leaves help convert carbon dioxide and water into the products oxygen and glucose.

The product glucose acts as a vital source of food for the plant.

Carbon dioxide, water and light are all needed for photosynthesis to take place.



What is photosynthesis?  
Photosynthesis takes place inside plant cells in small objects called chloroplasts. Chloroplasts contain a green substance called chlorophyll. This absorbs the light energy needed to make photosynthesis happen. Plants and algae can only carry out photosynthesis in the light.

# Photosynthesis knowledge organiser

These are the things that plants need for photosynthesis:

- Carbon dioxide
- Water
- Light (a source of energy)

These are the things that plants make by photosynthesis:

- Glucose
- Oxygen

The word equation for photosynthesis in the presence of light and chlorophyll is:

**Carbon dioxide + water → glucose + oxygen**

## **Why is photosynthesis important?**

Photosynthesis provides organisms with oxygen, a gas that many living things need. Oxygen is a product of photosynthesis and is needed for respiration. All organisms respire to release energy and to stay alive.

## Uses of glucose

Glucose is a useful molecule that is made during the process of photosynthesis. The initial use for glucose, when broken down during respiration, is to release energy.

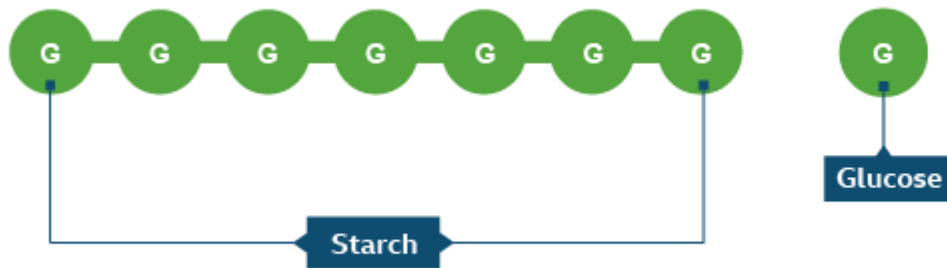
Plants only photosynthesise and synthesise glucose during the day when there is sunlight, but they use glucose for **respiration** all the time, including during the night.

## Cellulose

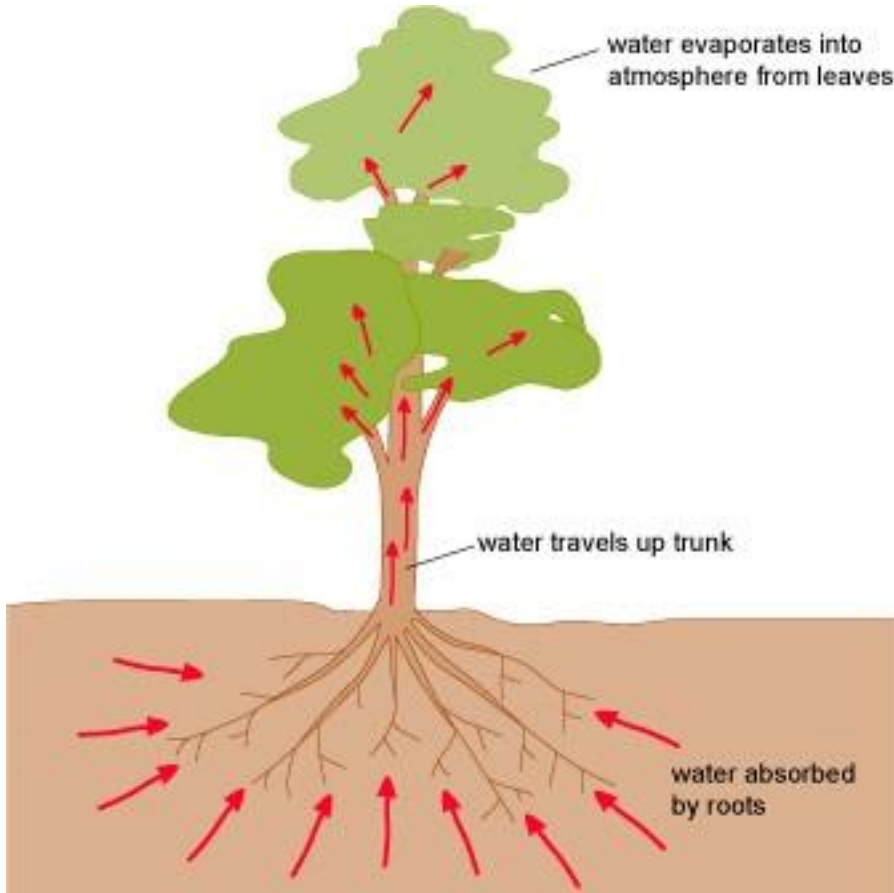
Glucose is used to make cellulose. Cellulose is an example of a natural polymer. Cellulose is the main component found in plant cell walls and this gives the plant cell strength and

## Starch

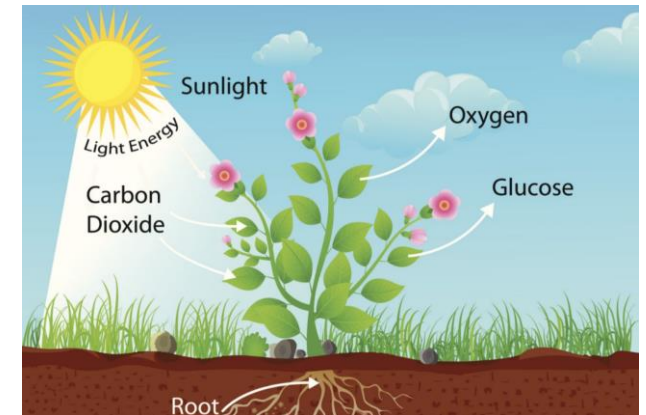
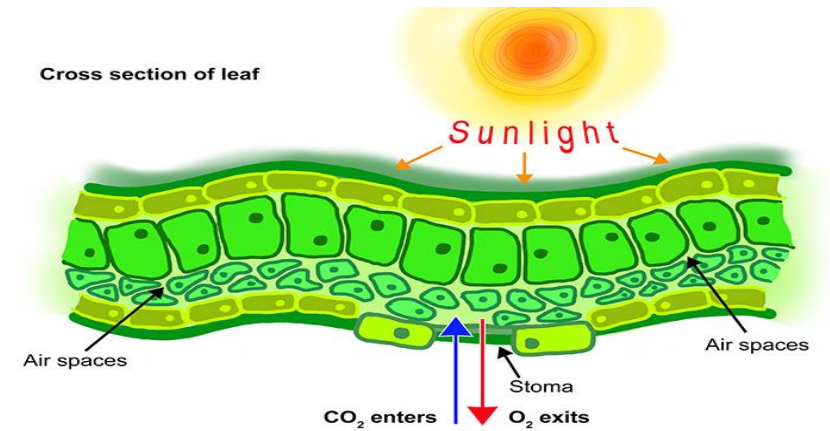
Other uses of glucose produced from photosynthesis is to make the insoluble storage molecule starch. Most plants including rice, potatoes and wheat store their energy as starch. Starch is also a polymer and can be converted back to glucose by the plant when it is needed, for example at night for respiration.



PLANTS ALSO MAKE FATS AND  
PROTEINS WITH GLUCOSE

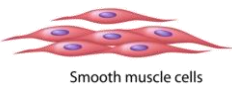




**Xylem** transports water and mineral salts from the roots up to other parts of the plant,

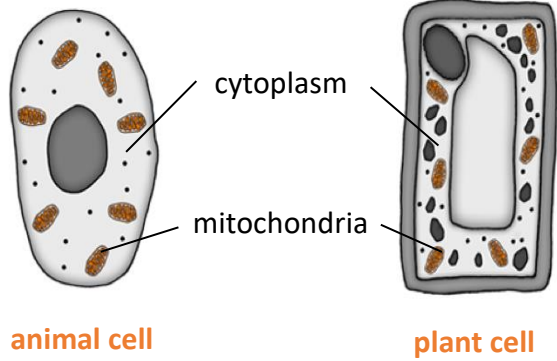


Carbon dioxide diffuses into the leaves of the plant through the stomata  
It moves from an area of high to an area of low concentration

# ENERGY FOR LIFE (RESPIRATION)

An organism will receive all the energy it needs for living processes as a result of the energy transferred from respiration	<i>For movement</i>	 Smooth muscle cells	To enable muscles to contract in animals.
	<i>For keeping warm</i>		To keep a steady body temperature in a cold environment.
	<i>For chemical reactions</i>		To build larger molecules from smaller one.

Cellular respiration is an exothermic reaction which is continuously occurring in all living cells



During exercise the human body reacts to increased demand for energy	<i>Heart rate increases</i>	To pump oxygenated blood faster to the muscle tissues and cells.
	<i>Breathing rate and breath volume increase</i>	This increases the amount of oxygen entering the blood stream.

## Respiration and Pulse Rate

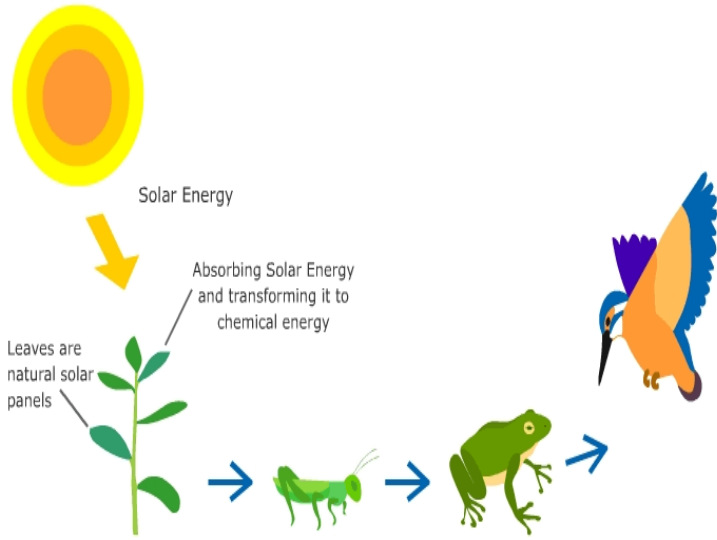
- Aerobic respiration:**
  - Releasing energy from glucose using oxygen.
  - Occurs in every cell in the body
  - $C_6H_{12}O_6 + 6O_2 \rightarrow 6H_2O + 6CO_2$
- Anaerobic respiration:**
  - Releasing energy from glucose without oxygen
  - Produces less energy → less efficient
  - Produces lactic acid → causes cramp and muscle fatigue → removed with oxygen (debt)
  - Glucose → Lactic acid

*Aerobic respiration releases a large amount of energy from each glucose molecule*

*Anaerobic respiration releases a much smaller amount of energy than aerobic respiration.*

Anaerobic respiration in plant and yeast cells	
<i>The end products are ethanol and carbon dioxide. Anaerobic respiration in yeast cells is called fermentation</i>	
glucose	→ ethanol + carbon dioxide

# BIO-ENERGETICS (ENERGY IN BIOLOGICAL SYSTEMS)



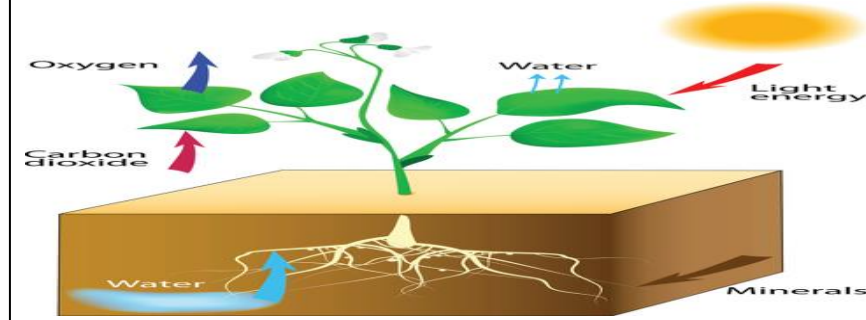
Plant is eaten by grasshopper is eaten by frog is eaten by bird.  
Stored chemical energy is transferred from the plant to the grasshopper, to the frog, to the bird, enabling each in turn to function as a living organism.

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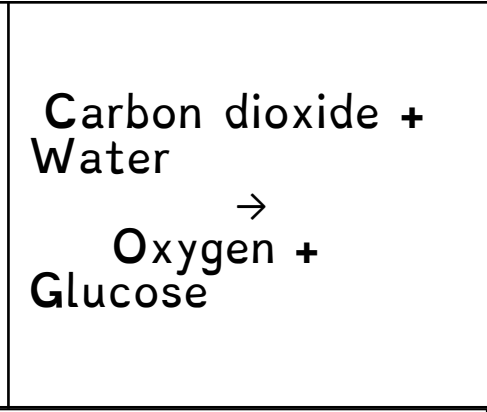
The feeding relationships are one way in which organisms depend on each other. To begin with, almost all organisms rely on the Sun as the original source of energy for their ecosystem. **Plants and algae** can make use of the Sun's energy to produce food molecules, in the process of photosynthesis. This is why they are called **producers**. Other types of organism can't do this, so they rely on the plants and algae.

- **Consumers** eat the producers, so the energy from the sun flows through the ecosystem. Molecules (which contain the energy) also flow through, and get recycled when organisms produce waste (poo and wee!) and after they die and decay. The diagram helps to show this.

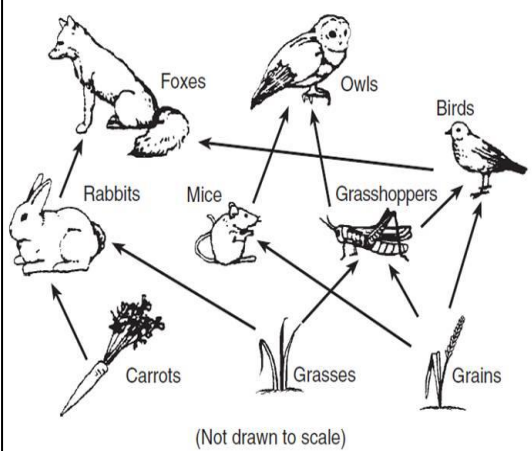
- You can see that all the organisms in the ecosystem depend on each other. This is



**PHOTOSYNTHESIS**  
make use of light energy from the environment  
**(ENDOTHERMIC)** to make food (glucose)



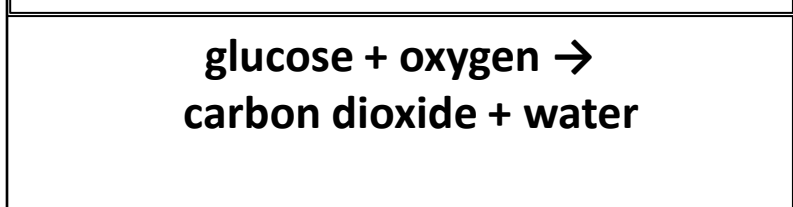
A food web shows many feeding relationships. It connects many food chains, since many organisms eat more than one other organism, and are eaten by more than one other.



**Aerobic respiration** is the process by which organisms release energy from glucose. It occurs inside the mitochondria continuously (without the help of the soil).

Glucose is oxidised by oxygen to transfer the energy the organism needs to perform its functions.

**Aerobic respiration** releases a large amount of energy from each glucose molecule



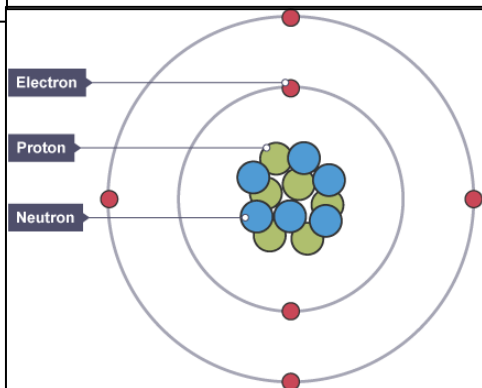


# Mendeleev's beard 1

All the different elements are arranged in a chart called the periodic table. A Russian scientist called Dmitri Mendeleev produced one of the first practical periodic tables in the 19th century. The modern periodic table is based closely on the ideas he used:

## Structure of the Atom

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

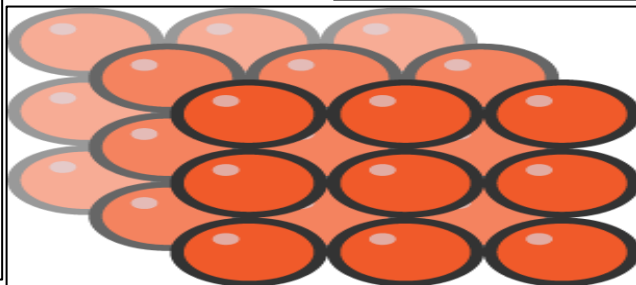


1	2									3	4	5	6	7	0		
																He	
Li	Be										H	B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac															

■ Metals      ■ Non-metals

## Atoms

Everything is made from atoms, including you. Atoms are tiny particles that are far too small to see, even with a microscope. If people were the same size as atoms, the entire population of the world would fit into a box about a thousandth of a millimetre across.



## Chemical equations

The changes in chemical reactions can be modelled using equations. In general, you write:

**reactants** → **products**

The reactants are shown on the left of the arrow, and the products are shown on the right of the arrow. Do not write an equals sign instead of an arrow. If there is more than one reactant or product, they are separated by a plus sign.

## Word equations

A word equation shows the names of each substance involved in a reaction, and must not include any chemical symbols or formulae. For example:

iron + sulphur → iron sulphide

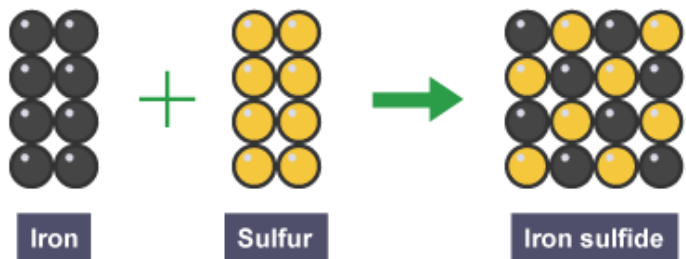
In this reaction, iron and sulphur are the reactants, and iron sulphide is the product.

## Chemical reactions

Atoms are rearranged in a chemical reaction. The substances that react together are called the reactants

are formed in the reaction are called the products

No atoms are created or destroyed in a chemical reaction. This means that the total mass of the reactants is the same as the total mass of the products. We say that **mass is conserved** in a chemical reaction.



Iron sulfide, the compound formed in the reaction, has different properties to the elements from what it is made.

## Compounds

A compound is a substance that contains atoms of two or more different elements, and these atoms are chemically joined together. For example, water is a compound of hydrogen and oxygen. Each of its molecules contains two hydrogen atoms and one oxygen atom. There are very many different compounds.

### Chemical Reactions

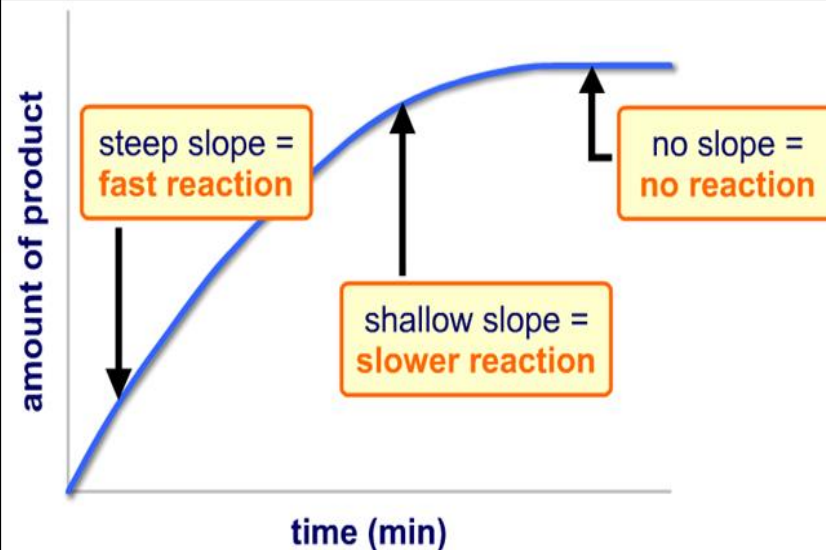
Chemical reactions occur when particles collide with enough **ENERGY**. The minimum amount of energy particles need to react when colliding is called the **ACTIVATION ENERGY**.

Increasing temperature increases the **speed** of the particles (because they gain kinetic energy) so they **collide successfully more often** and with more energy. This increases the rate of reaction.

Increasing the pressure of gases brings the particles closer together so they **collide successfully more often**. This increases the rate of reaction.

Increasing the concentration of reactants increases the number of particles, so they **collide successfully more often**. This increases the rate of reaction.

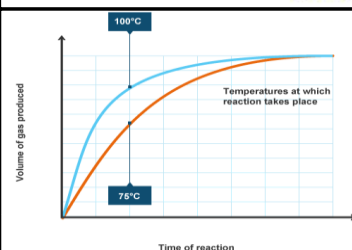
Increasing the surface area of a **SOLID** (you cannot change the surface area of a liquid or gas) **increases the number of successful collisions**. This increases the rate of reaction.



**Collision Theory:** chemical reactions occur when reactant particles collide with a certain amount of energy.

The rate of a reaction depends on two things:  
the **frequency** of collisions between particles. The more often particles collide, the more likely they are to react.

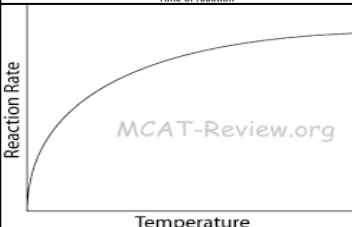
the **energy** with which particles collide. If particles collide with less energy than the activation energy, they will not react.



You may be presented with graphs like these ones. You need to be able to describe what they show. 'Describe' means say what you see. If numbers are given in the graph—quote them where appropriate.

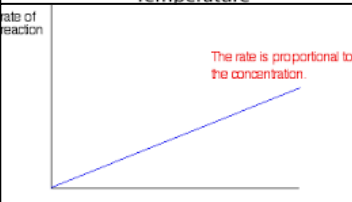
### Factors affecting the rate of reaction

Temperature	The higher the temperature, the quicker the rate of reaction.
Concentration	The higher the concentration, the quicker the rate of reaction.
Surface area	The larger the surface area of a reactant solid, the quicker the rate of reaction.
Pressure (of gases)	When gases react, the higher the pressure upon them, the quicker the rate of reaction.



As temperature increases so does rate of reaction. This means that reactions finish faster at higher temperatures, as the graph shows—the reactant is used up faster at 100°C, so it levels off sooner.

As temperature increases, rate of reaction increases very quickly. As temperature continues to increase the rate of reaction increases more slowly. Eventually the rate of reaction levels-off.



Rate of reaction and concentration are directly proportional—as one doubles, the other doubles

# THE PERIODIC TABLE

1	2											3	4	5	6	7	0
																He	
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac															

■ Metals    ■ Non-metals

**Formulae**  
The chemical formula of a **compound** shows how many of each type of **atom** join together to make the units which make up the compound.



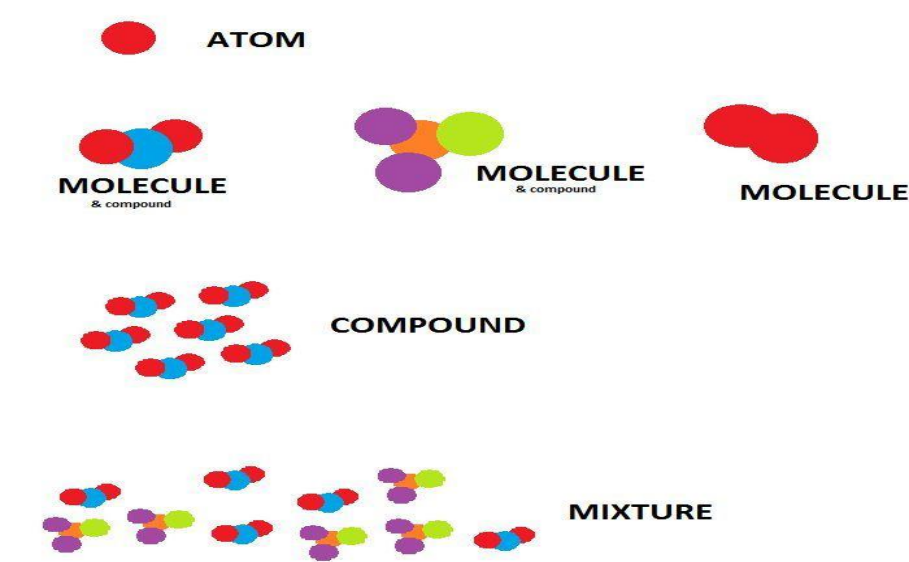
CO<sub>2</sub>  
Carbon dioxide

The zig-zag line in this diagram separates the **metals**, on the left, from **non-metals**, on the right. Hydrogen is a non-metal but it is often put in the middle.

The elements are arranged in order of increasing **atomic number** the horizontal rows are called **periods** the vertical columns are called **groups** elements in the same group are similar to each other

## Making a compound –iron sulfide

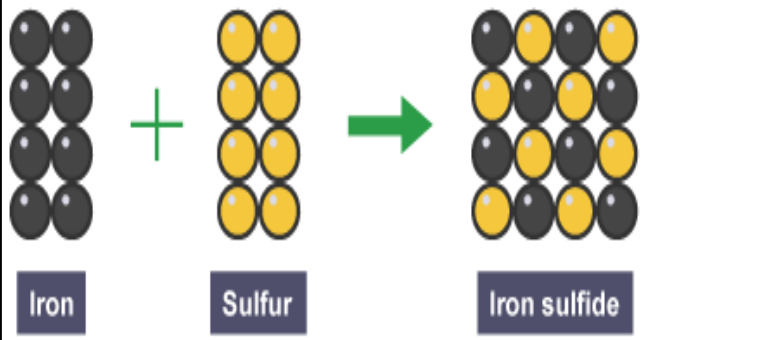
Iron sulfide, the compound formed in the reaction, has different properties to the elements from what it is made. The table compares the properties of iron, sulfur and iron sulfide:



**Element**  
A pure substance that is listed in the **periodic table** and only has one type of atom in it.

**Compound**  
A pure substance made from more than one type of element chemically bonded together.

**Mixture**  
An impure substance made from different elements or compounds mixed together that are not chemically joined.



**Law of conservation of mass**  
No **atoms** are created or destroyed in a chemical reaction. Instead, they just join together in a different way than they were before the reaction, and form **products**. This means that the total **mass** of the products in a chemical reaction will be the same as the total mass of the **reactants**.

# Chemical changes (chemist)

State	Solid	Liquid	Gas
Diagram			
Arrangement of particles	Regular arrangement	Randomly arranged	Randomly arranged
Movement of particles	Vibrate about a fixed position	Move around each other	Move quickly in all directions
Closeness of particles	Very close	Close	Far apart

## STATES OF MATTER RECAP

Keyword	Definition
<b>Reaction</b>	When reactants react to produce products
<b>Reactants</b>	The chemicals that are reacting to produce a chemical reaction
<b>Products</b>	The chemicals (elements or compounds) that are made when a chemical reaction occurs
<b>Endothermic</b>	Reactions that take in heat
<b>Exothermic</b>	Reactions that give out heat
<b>Oxidation Combustion</b>	Reaction of other elements with oxygen Burning fuel in oxygen
<b>Thermal Decomposition</b>	When a substance is broken down into 2 or more products by heat

**Endothermic Reactions**  
In an endothermic reaction, thermal energy is taken in from the surroundings, therefore there is a temperature decrease. Thermal decomposition is an example.

**Exothermic Reactions**  
In an exothermic reaction, thermal energy is given out to the surroundings, therefore there is a temperature increase.  
Combustion, oxidation and neutralisation reactions are all examples.

**Combustion**  
Combustion is another name for burning. It is an example of an exothermic reaction. There are two types of combustion – complete combustion and incomplete combustion.

**Complete Combustion**  
Coal, oil and gas are fuels. They contain hydrocarbons (compounds of hydrogen and carbon atoms only). When these fuels burn, it reacts with oxygen in the air to produce carbon dioxide and water vapour.  
Fuel + Oxygen → Carbon Dioxide + Water

**Incomplete Combustion**  
If there is not enough oxygen in the air for complete combustion, incomplete combustion will happen instead.  
This time either carbon monoxide is produced (a toxic gas which can lead to death) or carbon is produced (appears as soot and smoke which can cause breathing problems).  
Fuel + Oxygen → Carbon Monoxide + Water  
Fuel + Oxygen → Carbon + Water

**Oxidation Reactions**  
In an oxidation reaction, a substance gains oxygen. Metals and non-metals can take part in oxidation reactions.

Metals react with oxygen in the air to produce metal oxides. For example, copper reacts with oxygen to produce copper oxide when it is heated in the air.

Copper + Oxygen → Copper Oxide  $2\text{Cu} + \text{O}_2 \rightarrow 2\text{CuO}$

**Thermal Decomposition**  
Some compounds break down when heated, forming two or more products from one reactants.  
Many metal carbonates can break down easily when it is heated: Copper Carbonate → Copper Oxide + Carbon Dioxide

Copper carbonate is green, copper oxide is black. We can test for carbon dioxide using limewater. Limewater is colourless, but turns cloudy when carbon dioxide is bubbled through it.

A force can be a **push** or a **pull**, for example when you open a door you can either push it or pull it. You can not see forces, you can only see what they do.

When a force is applied to an object it can lead to a change in the objects

**Speed**

**Direction of movement**

**Shape (think about a rubber band)**

Forces can also be divided into 2 types, contact forces and non contact forces.

**Contact forces** for example friction, are caused when two objects are in contact.

Other forces for example gravity, are **non contact forces**. The two objects do not need to be in contact for the force to occur.

The unit of force is the **Newton (N)**, this is named after **Sir Isaac Newton**, who came up with many theories including those to do with gravity and the three laws of motion. We measure force using a piece of equipment called a **Newton metre**.

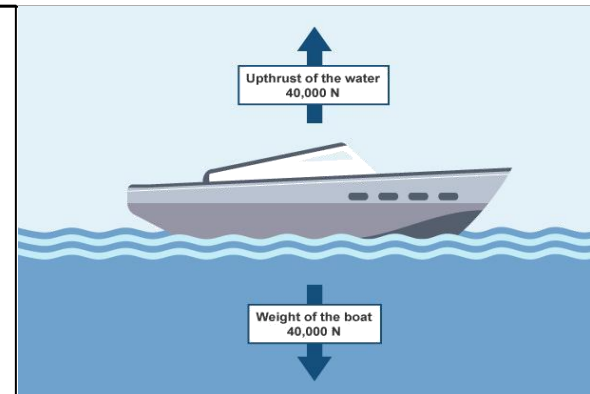
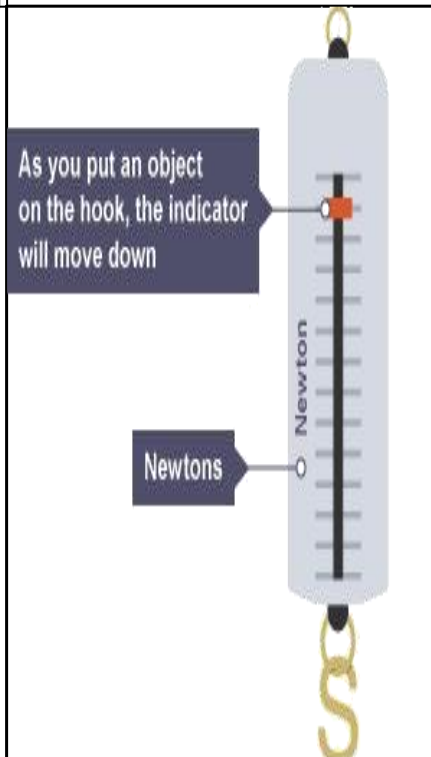
### Balanced forces

When two forces acting on an object are equal in size but act in opposite directions, we say that they are **balanced forces**.

If the forces on an object are balanced (or if there are no forces acting on it), this is what happens:

- a stationary object stays still
- a moving object continues to move at the same speed and in the same direction

Remember that an object can be moving, even if there are no forces acting on it.



### Force Diagrams

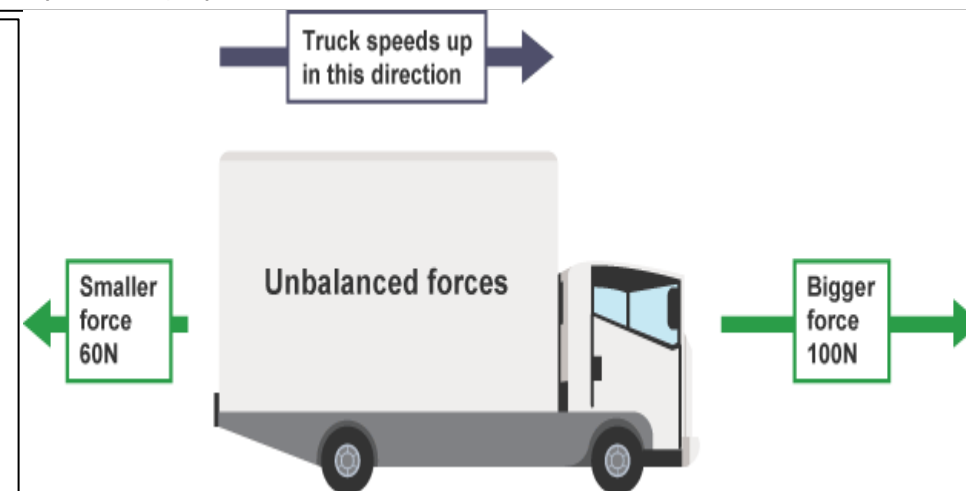
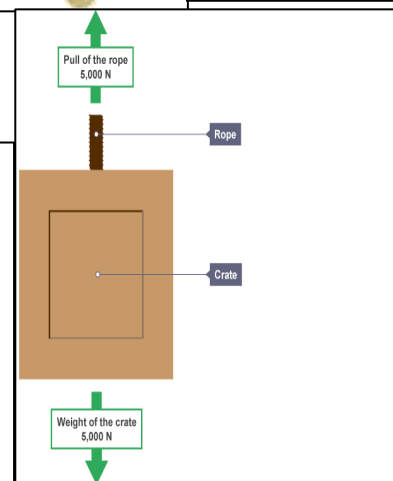
To show the forces acting on a body we use a free body force diagram. A **free body force diagram** shows all of the forces that are acting on the body. It has arrows that show the direction the force acts, the larger the arrow, the larger the force. A free body force diagram should always have labelled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

### Unbalanced forces

When two forces acting on an object are not equal in size, we say that they are unbalanced forces. The overall force acting on the object is called the **resultant force**. If the forces are balanced, the resultant force is zero.

If the forces on an object are unbalanced, this is what happens:

- a stationary object starts to move in the direction of the resultant force
  - a moving object changes speed and/or direction in the direction of the resultant force
- In the example below, the resultant force is the difference between the two forces:  
 $100 - 60 = 40 \text{ N (to the right)}$



# FORCES AND MOTION

## Balanced forces

When two forces acting on an object are equal in size but act in opposite directions, we say that they are **balanced forces**.

If the forces on an object are balanced (or if there are no forces acting on it), this is what happens:

- a stationary object stays still
- a moving object continues to move at the same speed and in the same direction

Remember that an object can be moving, even if there are no forces acting on it.

## Unbalanced forces

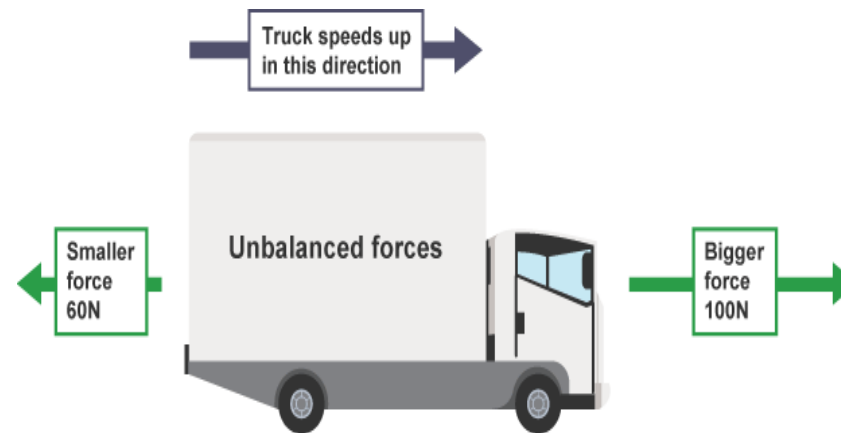
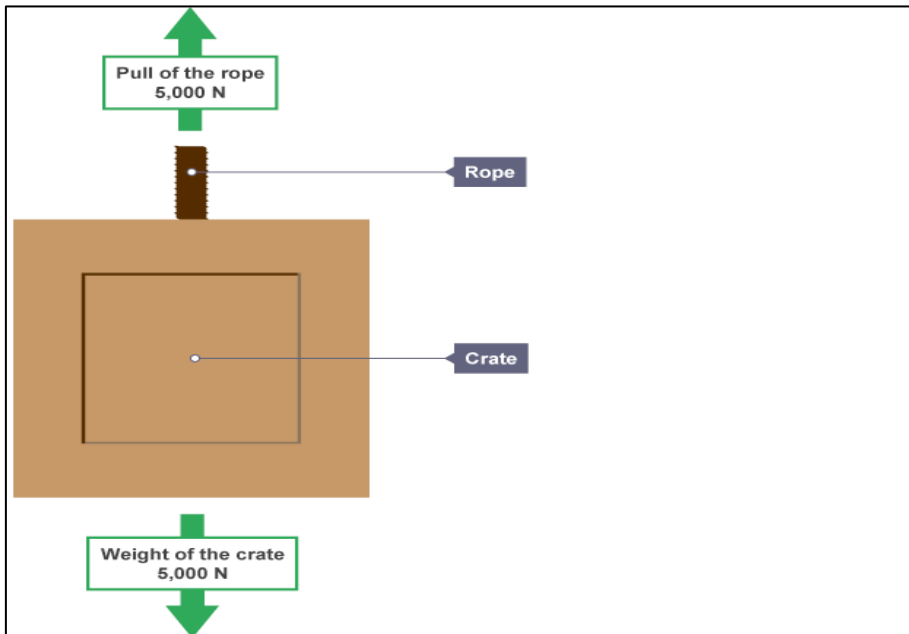
When two forces acting on an object are not equal in size, we say that they are unbalanced forces. The overall force acting on the object is called the **resultant force**. If the forces are balanced, the resultant force is zero.

If the forces on an object are unbalanced, this is what happens:

- a stationary object starts to move in the direction of the resultant force
- a moving object changes speed (accelerates or decelerates) and/or direction in the direction of the resultant force

In the example below, the resultant force is the difference between the two forces:

$$100 - 60 = 40 \text{ N (to the right)}$$



## Speed, distance and time

**Distance** is how far an object moves.. **Speed** is the **rate of change** of distance - it is the distance travelled per unit time

$$\text{Speed (m/s)} = \text{distance (m)} \div \text{time (s)}$$

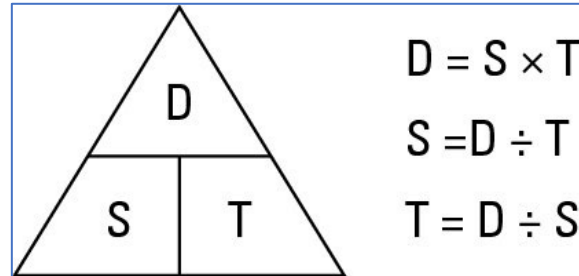
$$\text{Distance} = \text{Speed} \times \text{time}$$

$$\text{Time} = \text{Distance} \div \text{speed}$$

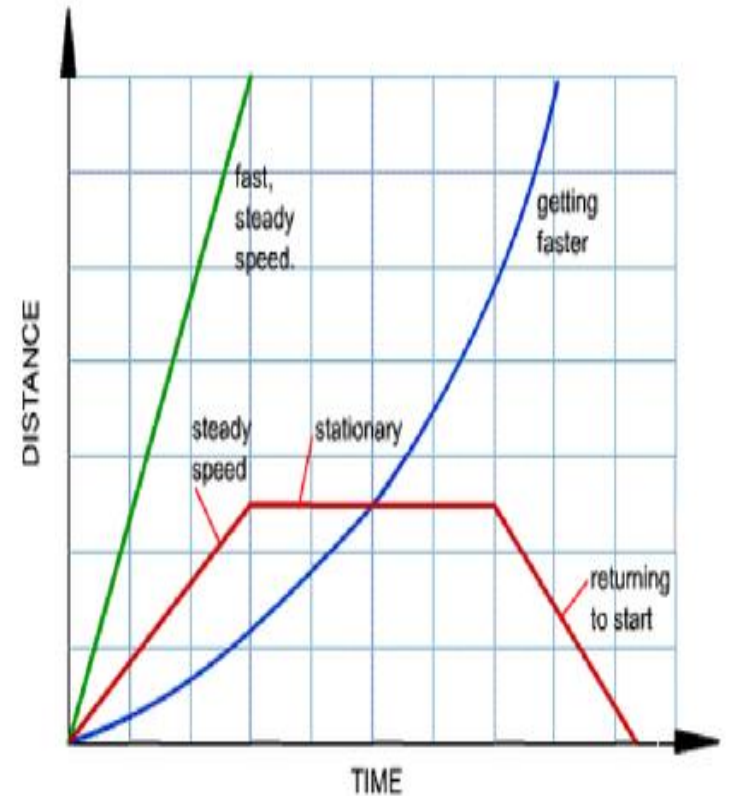
$$\text{speed} = \text{distance} / \text{time}$$

$$\text{distance} = \text{speed} \times \text{time}$$

Average speed is distance divided by time.

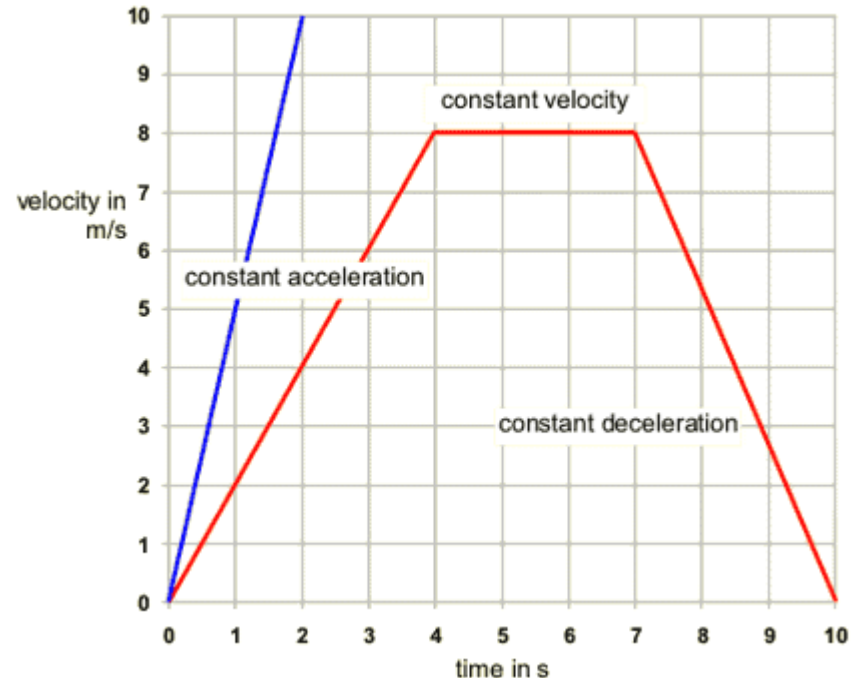


**Distance-time graphs.** If an object moves along a straight line, the distance travelled can be represented by a distance-time graph. In a distance-time graph, the gradient of the line is equal to the speed of the object. The greater the gradient (and the steeper the line) the faster the object is moving.



Distance-time graphs

# Speed-time graphs (extension)



When speed is increasing we say it is **accelerating**.

We measure acceleration in  $\text{m/s}^2$ .

The steeper the gradient, the bigger the acceleration.

As the line is straight, it is a **constant acceleration**.

If the line is horizontal the object is travelling at a **constant speed**



### Summary

A network is created when more than one device is connected together.

A network can be a small collection of computers connected within a building (e.g. a school, business or home) or it can be a wide collection of computers connected around the world.

The main purpose of networking is to share data between computers.

A file has to be broken up into small chunks of data known as **data packets** in order to be transmitted over a network. The data is then re-built once it reaches the destination computer.

Protocols are used to control how data is transmitted across networks. They are a set of rules for how messages are turned into data packets and sent across networks.

**Bandwidth** measures the amount of data that can transfer through a communications channel over a given period of time.

Careers include *Cloud Computing Engineer, Computer Network Specialist, Information Security Specialist, Computer Support Specialist, Software/Application Developer, Games Designer and Web Developer*

A school network is usually a **LAN**. LANs are often connected to WANs, for example a school network could be connected to the internet. **WANs** can be connected together using the internet, leased lines or satellite links.

### Advantages of networks

- ◆ Sharing devices such as printers saves money.
- ◆ Site (software) licences are likely to be cheaper than buying several standalone licences.
- ◆ Files can easily be shared between users.
- ◆ Network users can communicate by email and instant messenger.
- ◆ Security is good - users cannot see other users' files unlike on stand-alone machines.

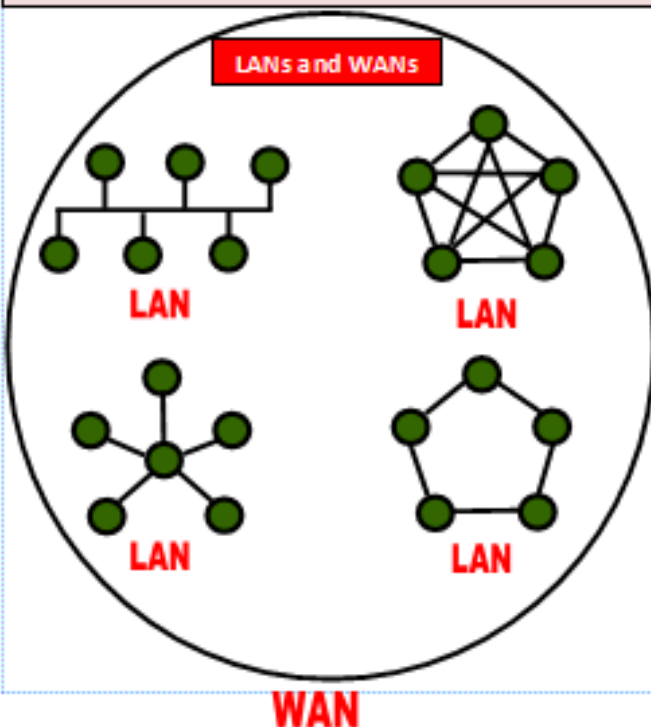
### Disadvantages of networks

- ◆ Purchasing the network cabling and file servers can be expensive.
- ◆ Managing a large network is complicated, requires training and a network manager usually needs to be employed.
- ◆ If the file server breaks down the files on the file server become inaccessible. Email might still work if it is on a separate server. The computers can still be used but are isolated.
- ◆ Viruses can spread to other computers throughout a computer network.
- ◆ There is a danger of hacking, particularly with wide area networks. Security procedures are needed to prevent such abuse, e.g. a firewall.

### Key Vocabulary

<b>File server</b>	A networked <b>computer</b> that provides shared storage, it can be accessed by workstations on the same network.
<b>Input device</b>	Input devices, like a keyboard, allow us to put raw data in a computer which it processes to produce outputs.
<b>LAN</b>	<b>Local Area Network</b> covers a small area such as one site or building, e.g. a school or a college.
<b>Licence</b>	A legal agreement between the company who published the software and the end user covering areas such as copyright.
<b>Network</b>	A network is a number of computers linked together to allow the sharing of resources.
<b>Output device</b>	A device used to output data or information from a computer, e.g. a monitor or printer.
<b>Server</b>	A computer that holds data to be shared with other computers. A web server stores and shares websites.
<b>WAN</b>	<b>Wide Area Network</b> covers a large geographical area. Most WANs are made from several LANs connected together.
<b>Workstation</b>	A computer connected to a network.

### LANs and WANs



The internet is a global **network** of computers. All computer devices (including PCs, laptops, games consoles and smartphones) that are connected to the internet form part of this network. Added together, there are billions of computers connected to the internet, all able to communicate with each other.

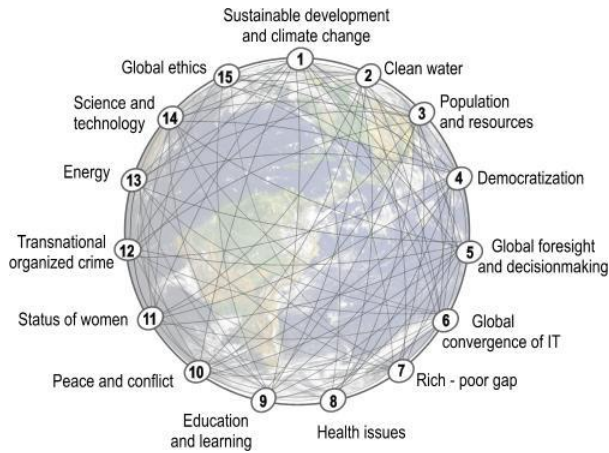
<https://bbc.in/37yYD3x>

KEEP CALM AND GO PRACTICE

BBC Bitesize



# Year 9 Knowledge organiser: Global challenges



## Topics covered

- ✓ Types of challenges
- ✓ Population and resources
- ✓ Poverty and Wealth inequality
- ✓ Settlements and environmental quality
- ✓ Resource exploitation and environment
- ✓ Ecosystems and biodiversity
- ✓ Global Warming and Climate Change

## Key Ideas:

1. I can describe global scale challenges
2. I can describe how human populations are un-equal
3. I can describe how human activities are damaging the environment
4. I can explain why opinions vary on solving global challenges
5. I can discuss ideas for a sustainable future

## Skills

- ❑ To research using ICT
- ❑ To interpret a variety of graphs/infographics
- ❑ To use mapping to investigate deforestation and urbanisation
- ❑ To understand different opinions and viewpoints
- ❑ To write a detailed piece of extended writing
- ❑ To use ICT/MS Office to present to my class

## Places and Environments

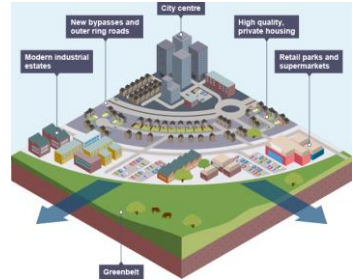
- ❖ Amazon rainforest
- ❖ Antarctica and Arctic
- ❖ India
- ❖ China
- ❖ Germany
- ❖ Tuvalu
- ❖ Maldives

## Key Terms Used in this Unit

- Over-population
- Resource Consumption
- Water access
- Electrification
- Literacy
- Environmental Hazards
- Freedom
- Standard of Living
- Greenhouse gases
- Disease
- Global warming
- Climate Change
- Biodegradable plastics
- Pollution
- Deforestation
- Biodiversity
- Sustainability
- Transport
- Conservation



**Population and Resources - Global population rises to 8 billion**  
 This places added pressures on our resources.  
 Which resources do humans need?



**Cities in developed countries**  
 Here we struggle to find enough space within cities for new housing. House prices have become extremely expensive.  
 New housing is spreading into the green fields that surround our towns and cities. This places added pressures to our natural systems.  
 Compare old and new maps of Norwich - how has the city changed over time?

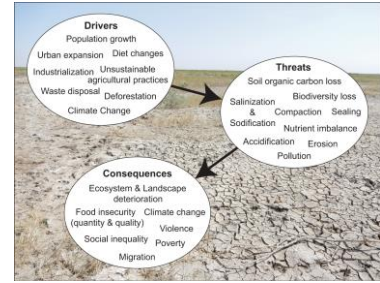
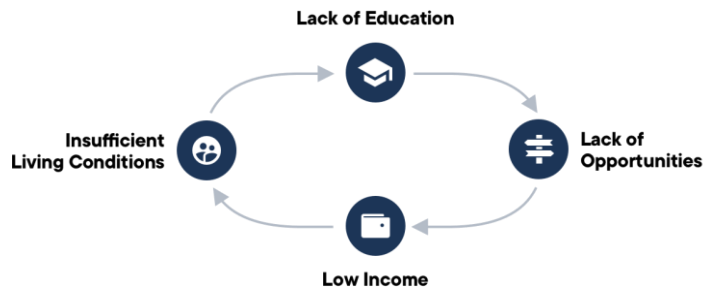


**Food and water resources**  
 We continue to throw away large quantities of food resources while food banks and global food poverty continues.  
 What factors affect prices on the shelves?

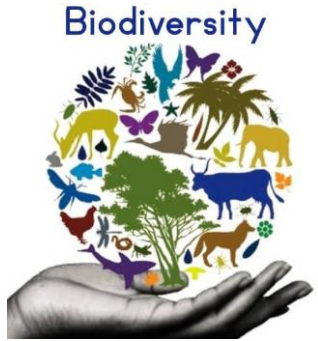


**Ocean pollution**  
 Large areas of the Pacific Ocean have formed islands of floating waste. This is a global problem.  
 How could this affect wildlife and humans?

**Poverty Cycle**  
 Why is learning and education so valued in the developing countries?

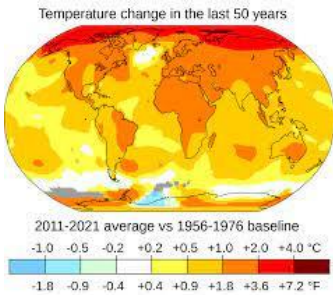


**Species loss**  
 We live in times when species loss is increasing. Why?



**Soils - the forgotten resource!**  
 Wars have been fought over soil! And yet modern farming methods continue to degrade the soil. Ancient farming methods are being revived along with natural plant based soil improvements but is it too late?

**Climate Change**  
 Possibly the greatest challenge facing mankind today.  
 As global climate changes it has many impacts. Can you name areas of the world that are at risk from:  
 Rising sea levels  
 Forest fires  
 Reduced food production  
 Extreme weather  
 Species extinctions  
**CHALLENGE:**  
 EXPLAIN how these areas are being impacted



**Water Security**  
 Issues of water quality and insufficient quantity continue to affect large areas of the world.  
 Many areas lack adequate sanitation.  
 How does this affect peoples everyday lives?



**Energy production**  
 Using fossil fuels is no longer cheap and renewable energy prices have fallen this means that western economies are transitioning, however large parts of the world are dependent on oil and gas still.  
 It is a global challenge to reduce fossil fuel use and emissions of CO2 - but why is this so difficult?





**The Day of the Dead**

# Dia de los Muertos

Day of the Dead is a Mexican holiday that celebrates and remembers the dead.



**Graves are decorated with flowers and candles**

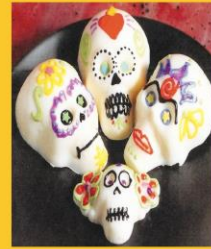


**Marigold flowers are used as decoration**

People take part in parades.



**In Mexico, Day of the dead is held on 2nd November, but many other countries celebrate their dead too, such as the Chinese Hungry Ghost festival and All Hallows in the UK.**



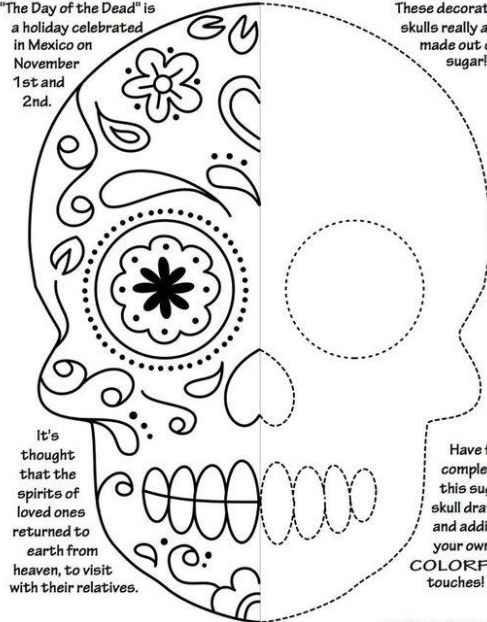
**food is offered as gifts**



## Mexican Sugar Skull

"The Day of the Dead" is a holiday celebrated in Mexico on November 1st and 2nd.

These decorated skulls really are made out of sugar!



It's thought that the spirits of loved ones returned to earth from heaven, to visit with their relatives.

Have fun completing this sugar skull drawing and adding your own **COLORFUL** touches!

**In the summer term year 9 study the Mexican Festival "The Day of the Dead". They learn about the traditions and culture of the festival and design their own decorative skulls in the same style.**

**They also design and make clay model skulls and carve patterns into them and then paint them. There are simple templates attached on here that you can use at home.**

Here is the vocabulary you will need for Stimmt 3, Module 3 – term 2

1	• discuss crazy things that I would/would not do	Ich würde nie mit Haifischen schwimmen!
	• use adjectives to describe personality	Bist du abenteuerlustig oder ängstlich?
	• use the qualifiers <b>nie</b> , <b>vielleicht</b> and <b>bestimmt</b>	Ich würde vielleicht Zorbing machen.
	• use the conditional to say what I and others would do	Ich <b>würde</b> Kakorlaken <b>essen</b> . Er <b>würde</b> den Mount Everest <b>besteigen</b> .
	• use context and near-cognates to work out unknown words	
2	• say what part-time job I do and where I work	Ich arbeite als Zeitungsausrufer.
	• give my opinion of my job	Ich finde den Job langweilig.
	• use <b>weil</b> to give a variety of reasons	Ich mag den Job, <b>weil</b> er Spaß macht. Ich mag den Job nicht, <b>weil</b> ich nicht viel Geld verdiene.
	• use <b>man</b> with modal verbs to talk in general about a job	<b>Man muss</b> abwaschen.
	• use <b>seit</b> to say how long I've been doing a job	Ich arbeite <b>seit</b> einer Woche in einem Café.
3	• say what I would like to be or do in the future	Ich möchte Schauspieler(in) werden.
	• use correct word order in longer sentences with sequencers	Ich möchte zuerst heiraten und später möchte ich Kinder haben.
	• use my knowledge of key sounds to help with pronunciation	möchte  <b>Ausland</b> 
4	• say what job I do in a ski resort	Wo arbeitest du? Ich arbeite in der Skischule.
	• use a range of language to describe future ambitions	Ich möchte später auf die Uni gehen und Sozialarbeiterin werden, aber ich würde nie in der Stadt arbeiten.
	• use the prepositions <b>in</b> and <b>auf</b> with the dative	Ich arbeite <b>in der</b> Kinderkrippe.
5	• understand and note numbers accurately	Null, zwei, null; dreißig, elf, vierundvierzig, einundsiebzig → 020 30 11 44 71
	• use context and question prompts to predict the information I might hear	
	• use my knowledge of verb structures to identify key tenses I hear	Ich werde nächsten Monat eine Geburtstagsparty im Hotel organisieren. → Zukunft
	• select key words that convey meaning	Haben Sie im Moment noch Zimmer frei? → Zimmer frei?
6	• understand the gist and detail of different styles of text about an artist and his/her work	

In this Module you will learn how to:

- Discuss ambitions and the future
- Talk and write about things that **could happen**
- Talk and write about **jobs**
- Talk and write about **future** events
- Real life: talking about ski holidays

[www.textivate.com](http://www.textivate.com)

Username: openacademy

Password: in Teams in Class Materials

Go to 'my resources' to find your work.

[www.memrise.com](http://www.memrise.com)

<https://app.memrise.com/course/6262551/stimmt-3/1/>

Use your Memrise account to practise and learn the vocabulary in this unit and develop what you know (as well as revise what you've done before)

## Wie bist du? • What are you like?

abenteuerlustig	<i>adventurous</i>
kühn	<i>daring</i>
mutig	<i>brave</i>
ängstlich	<i>fearful</i>
feige	<i>cowardly</i>
verrückt	<i>mad/crazy</i>
vorsichtig	<i>cautious</i>

## Würdest du ... ? • Would you ... ?

Ich würde ...	<i>I would ...</i>
nie	<i>never</i>
vielleicht	<i>maybe</i>
bestimmt	<i>definitely</i>
mit Haifischen schwimmen	<i>swim with sharks</i>
Extrembügeln machen	<i>do extreme ironing</i>
zum Mond fliegen	<i>fly to the moon</i>
Kakerlaken essen	<i>eat cockroaches</i>
den Mount Everest besteigen	<i>climb Mount Everest</i>
Zorbing machen	<i>do zorbing</i>
Brennnesseln essen	<i>eat stinging nettles</i>
mit Krokodilen schwimmen	<i>swim with crocodiles</i>
zum Mars fliegen	<i>fly to Mars</i>

## Hast du einen Job?

### • Do you have a job?

Seit wann arbeitest du?	<i>How long have you been working?</i>
Ich arbeite ...	<i>I've been working ...</i>
seit einer Woche	<i>for a week</i>
seit sechs Monaten	<i>for six months</i>
Ich finde den Job ...	<i>I find the job ...</i>
toll	<i>great</i>
interessant	<i>interesting</i>
okay	<i>OK</i>
nicht schlecht	<i>not bad</i>
langweilig	<i>boring</i>
furchtbar	<i>awful</i>
Ich mag den Job, weil ...	<i>I like the job because ...</i>
er interessant ist	<i>it's interesting</i>
er Spaß macht	<i>it's fun</i>
ich viel Geld verdiene	<i>I earn a lot of money</i>
Ich mag den Job nicht, weil ...	<i>I don't like the job because ...</i>
er langweilig ist	<i>it's boring</i>
er keinen Spaß macht	<i>it's no fun</i>
ich nicht viel Geld verdiene	<i>I don't earn a lot of   money</i>
Man muss ...	<i>You have to ...</i>
abwaschen	<i>wash up</i>
sauber machen	<i>clean</i>
Salate vorbereiten	<i>prepare salads</i>
Man kann ...	<i>You can ...</i>
mit den Hunden laufen	<i>run with the dogs</i>
mit einem Ball spielen	<i>play with a ball</i>
fit bleiben	<i>keep fit</i>
Man darf (nicht) ...	<i>You are (not) allowed to ...</i>
essen	<i>eat</i>
spielen	<i>play</i>
Ich habe keinen Job, aber ich will als ... arbeiten.	<i>I don't have a job, but I want to work as a ...</i>

## Was für einen Job hast du?

### • What type of job have you got?

Ich arbeite ...	<i>I work ...</i>
als Bademeister(in)	<i>as a lifeguard</i>
als Trainer(in)	<i>as a coach</i>
als Babysitter(in)	<i>as a babysitter</i>
als Hundeausführer(in)	<i>as a dog walker</i>
als Zeitungsausträger(in)	<i>as a newspaper boy (girl)</i>
in einem Café	<i>in a café</i>
in einem Restaurant	<i>in a restaurant</i>
in einem Supermarkt	<i>in a supermarket</i>

## Grammatik

The pronoun **man** is used to refer to people in general ('you').

	<i>modal verb</i>	<i>infinitive at end of sentence</i>	
man	<i>muss</i>	<i>abwaschen</i>	you have to wash up
	<i>kann</i>	<i>laufen</i>	you can run
	<i>darf</i>	<i>spielen</i>	you are allowed to play
	<i>darf nicht</i>	<i>essen</i>	you're not allowed to eat

## Word order – verb in second position

In German, the verb is **always** the second idea in a sentence:

1st idea (subject)    2nd idea (verb)    other details  
*Ich*                    **spiele**                    *Fußball.*    (I play football.)

Sentences often begin with a sequencer (e.g. 'first of all', 'later') or a time expression (e.g. 'at the weekend').

The verb still has to be second, so it swaps with the subject:

1st idea                    2nd idea (verb)    subject    other details  
*Am Wochenende* **spiele**                    *ich*    *Fußball.*    (At the weekend I play football.)

## Was möchtest du machen?

### • What would you like to do?

<b>Ich möchte ...</b>	<i>I would like ...</i>
zuerst	<i>first of all</i>
später	<i>later</i>
dann	<i>then</i>
bei (BMW) arbeiten	<i>to work for (BMW)</i>
heiraten	<i>to get married</i>
Kinder haben	<i>to have children</i>
um die Welt reisen	<i>to travel round the world</i>
Fußballprofi werden	<i>to become a footballer</i>
Schauspieler(in) werden	<i>to become an actor (actress)</i>
Sänger(in) werden	<i>to become a singer</i>
auf die Uni gehen	<i>to go to university</i>
(Mathe) studieren	<i>to study (maths)</i>
im Ausland leben	<i>to live abroad</i>

## Im Skiort • In the ski resort

das Café(s)	<i>café</i>
das Restaurant(s)	<i>restaurant</i>
das Hotel(s)	<i>hotel</i>
die Skischule(n)	<i>ski school</i>
das Souvenirgeschäft(e)	<i>souvenir shop</i>
die Kinderkrippe(n)	<i>crèche</i>
der Berg(e)	<i>mountain</i>
die Piste(n)	<i>ski run</i>
der Wellnessbereich(e)	<i>spa</i>
<b>Ich arbeite im Moment ...</b>	<i>At the moment I work ...</i>
<b>im Souvenirgeschäft</b>	<i>in the souvenir shop</i>
<b>als Küchenhilfe</b>	<i>as a kitchen help</i>
<b>Ich möchte später ...</b>	<i>Later I would like to ...</i>
<b>Sozialarbeiter(in)</b> <b>werden</b>	<i>become a social worker</i>
<b>ein Restaurant</b> <b>eröffnen</b>	<i>open a restaurant</i>
<b>Ich würde nie ...</b>	<i>I would never ...</i>
<b>in der Stadt leben</b>	<i>live in the city</i>
<b>auf dem Berg leben</b>	<i>live on the mountain</i>

## Oft benutzte Wörter

### • High-frequency words

nie	<i>never</i>
vielleicht	<i>maybe</i>
bestimmt	<i>definitely</i>
zuerst	<i>first of all</i>
später	<i>later</i>
dann	<i>then</i>
seit	<i>since/for</i>
in	<i>in</i>
auf	<i>on</i>
extrem	<i>extremely</i>
in zwei Jahren	<i>in two years</i>
in fünf Jahren	<i>in five years</i>

Key words	
<b>Tsar</b>	Monarch or emperor of Russia
<b>Autocracy</b>	A political system where the country is ruled by one monarch who holds all political power
<b>Revolution</b>	A sudden and significant change to the political system in a country, usually involving the overthrow of the previous government or ruler
<b>Bolshevik</b>	Name of the Russian Communist Party who take control of Russia in 1917
<b>Lenin</b>	Leader of the Bolsheviks until his death in 1924
<b>1905 Revolution</b>	Russia's first Revolution in which the Tsar's power is threatened but survives with some minor changes
<b>February Revolution</b>	Takes place in 1917 and sees the overthrow of the Tsar and his replacement with the 'Provisional Government'
<b>October Revolution</b>	Takes place in 1917, led by the Bolsheviks, and sees the overthrow of the Provisional Government
<b>Jack the Ripper</b>	Nickname given to a serial killer who killed at least five prostitutes in Whitechapel in 1888
<b>Whitechapel</b>	The very poor area of London in which 'Jack the Ripper' carried out his murders.

### Russia in 1905

By 1905, the vast majority of Russia was still a backward country mostly based on farming. Peasants worked hard and were often vulnerable to famine and disease. However, they were very religious and very loyal to the Tsar of Russia.

In 1905 Russia had its first Revolution. Although the protesters mostly did not wish to overthrow the Tsar they did demand some changes. This had 3 main causes:

- Ongoing poverty and inequality in Russia, and as inflation, hunger and taxation increased the peasants began to protest
- The Russian army/navy were humiliated by the Japanese in the Russo-Japanese war, so people were angry and some blamed the Tsar
- Bloody Sunday was a protest in the capital city of St. Petersburg where the Tsar ordered his troops to shoot the protesters

Despite a large amount of opposition in 1905, Tsar Nicholas II was able to survive and introduce only very limited changes.

However, in 1917 there were two revolutions in Russia that changed the country forever. On the right are some of the key features of both.

February 1917 Revolution	October 1917 Revolution
Caused by the Tsar's failure to end the war despite its effects on the Russian people.	Caused by the Provisional Government's failure to end the war, despite promising they would.
Caused by increasing demands for democracy in Russia by many different political groups.	Caused by the actions of the Communists who wanted Russia to become a Communist country.
Caused by ongoing poverty and suffering in Russia.	Caused by ongoing poverty and suffering in Russia.
Led to the creation of a Provisional Government who planned to bring in free elections	Led to the replacement of the Provisional Government with a Communist government
Although they imprisoned much of their opposition, the Government eventually lost control and the Bolsheviks took power	Once in power, the Bolsheviks fought the Russian Civil War against those who wanted the Tsar to return. They won and remained in power.



## 'Jack the Ripper'

In Whitechapel in 1888 the murders of five prostitutes were strongly suspected to be the work of a single person. Although the murderer was never caught, he was given the name 'Jack the Ripper'.

The murders took place in the area of Whitechapel, London. It was possible for the killer to escape partly because the crime rate in Whitechapel was so high.

Prostitutes were often victims of violent crime; they were alone with men, spent a lot of time out at night and many had no family able to protect them.

### The victims

#### 1. Mary Ann Nichols– 31st August 1888

Mary was found dead in the middle of the street. She had had her throat cut and her belly sliced open.

#### 2. Annie Chapman– 8th September 1888

Annie Chapman was found in a yard, again with her throat cut and her belly sliced open. The fact that many people were close by suggests the killer was silent. Elizabeth Long reported seeing Annie talking to a foreign gentleman with a shabby genteel appearance.

#### 3. Elizabeth Stride– 30th September 1888

Elizabeth Stride was found dead in a pub back yard. Her throat had been cut however the killer had been disturbed before he could mutilate her body. This seemed to anger him and he went in search of another victim.

#### 4. Catherine Eddowes– 30th September 1888

Later that same night Catherine Eddowes was murdered in Mitre Square. The killer was clearly frustrated by his earlier failure as the cuts were deeper and more frantic than the others.

#### 5. Mary Jane Kelly– 9th November 1888

This was the most gruesome of the murders. Mary Kelly invited the murderer back to her home where the murder took place. Jack the Ripper spent hours mutilating her body. This was the most gruesome murder by far.

### Why wasn't the killer caught?

It is likely that, had he been around today, Jack the Ripper would have been caught. However there were several reasons why he was able to get away with it.

Some of these have to do with the failures of the Police at the time:

- The police ignored and sometimes destroyed key evidence, such as writing on Catherine Eddowes' wall (a crime scene)
- The two police forces involved did not communicate well with each other
- The police offered no reward for information
- Much of the evidence the police used came from unreliable witnesses

However, there were also factors outside of Police control:

- Whitechapel was like a maze which made it easy for criminals to hide and escape
- The press were very critical of the police and mocked even some of their sensible tactics
- Many fake letters were sent to the police, claiming to be from the killer.

# Year 9 - Spring 1 - The Language of Protest

## Protest Writing Genre Overview

- In this unit of work you will engage with a variety of non-fiction extracts linked to the theme of protest writing, some of these extracts will be modern and some will be pre-1900.
- Protest writing gives activists the chance to communicate their ideas and messages in a clear and persuasive way. These writers may be writing from a particular political social or moral stand point.
- The key themes you will be exploring are segregation, gun control, mental illness, the suffragette movement, voting age and climate change.

## Types of text to study

- Speeches
- Television Interviews
- Newspaper Articles
- Coroners Reports
- Recounts of oral accounts

## Key Terminology

**Inference** - a conclusion reached on the basis of evidence and reasoning

**Summary** - a brief statement or account of the main points of something

**Political** - relating to the government or public affairs of a country

**Emotive Language** - when certain word choices are made to evoke an emotional response in the reader

**Perspectives** - a way of regarding situations, facts, etc, and judging their relative importance (point of view)

**Format** - the way in which something is arranged or set out

**Formality** - how formal or informal your writing should be

**Counter argument** - an argument against another argument, idea, or suggestion

**Rebuttal** - an instance of disproving evidence or an accusation

## Themes

**Segregation** - the action or state of setting someone or something apart from others

**Gun Control** - set of laws or policies that regulate the manufacture, sale, transfer and ownership of firearms

**Mental Illness** - refers to a wide range of mental health conditions — disorders that affect your mood, thinking and behaviour

**Suffragette Movement** a women's organisation in the early 20th century who, under the banner "Votes for Women", fought for the right to vote

**Voting Age** - the age in which it is legal to cast a vote in elections

**Climate Change** - long-term shifts in temperatures and weather patterns. These shifts may be natural or caused by humans

**LGBTQ+ & BLM** - issues around equality for all regardless of race, gender, sexuality or sexual orientation

## Art & Music Links

**Art** - Protest art is the creative works produced by activists. It is a traditional means of communication, utilised by artists to persuade those around them on a given topic. Protest art helps arouse base emotions in their audiences, and in return may increase the climate of tension and create new opportunities to dissent. One of the first examples of protest art came as a reaction to WW1 With Dada artists and has continued in popularity until present day with artists such as Banksy.



Hannah Hoch



Banksy

**Music** - Protest music is music that aims to send social messages and make a change (associated with a movement for social change or other current events through music). Often using the popularity of the artist to bring more attention to a particular issue. Most famous examples of protest songs are: *We Shall Overcome* linked to the civil rights movement and *War* by Edwin Starr which was critical of the Vietnam War

<https://www.youtube.com/watch?v=dpWmlRNfLck&t=6s>

## Ambitious Vocabulary

**Abolition** - the action of abolishing a system, practice, or institution

**Alienated** - experiencing or inducing feelings of isolation or estrangement

**Anarchy** - a state of disorder due to absence or non-recognition of authority or other controlling systems

**Defiance** - open resistance; bold disobedience

**Discrimination** - the unjust or prejudicial treatment of different categories of people, especially on the grounds of race, age, sex, or disability

**Emancipation** - the fact or process of being set free from legal, social, or political restrictions; liberation

**Equality** - the state of being equal, especially in status, rights, or opportunities

**Exploitation** - the action or fact of treating someone unfairly in order to benefit from their work

**Dissent** - the holding or expression of opinions at variance with those commonly or officially held

**Hierarchy** - a system in which members of an organisation or society are ranked according to relative status or authority

**Hypocrisy** - the practice of claiming to have higher standards or more noble beliefs than is the case

**Insurgent** - a person fighting against a government or invading force; a rebel or revolutionary

## The Open Values in Language of Protest:

Leadership Teamwork Hard Work Perseverance Courage

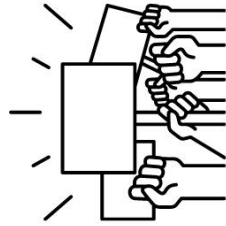
In order to protest against an institution that may be much more powerful than yourself you need to show the personal attributes that many of the people we study in this unit show.

## Careers:

<https://www.prospects.ac.uk/careers-advice/what-can-i-do-with-my-degree/english>

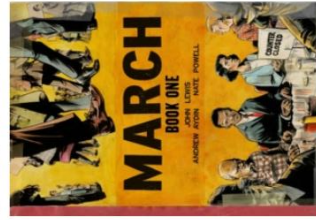


# Wider Reading - Language of Protest



## ENGLISH

### YEAR 9 PROTEST



March  
by John Lewis



Suffragette  
by David Roberts



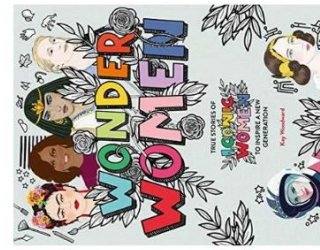
Art of Protest: What a  
Revolution Looks Like  
by De Nicholas



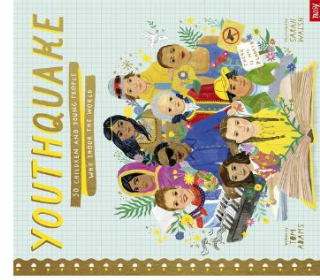
Have Pride  
by Stella Caldwell



Campaigners for  
Change  
by Ann Kramer



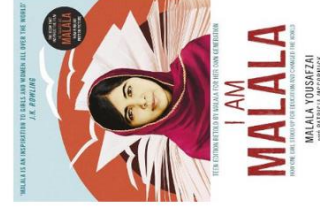
Wonder Women  
by Kay Woodward



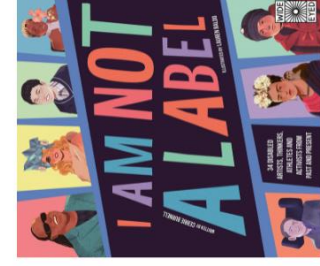
Youthquake  
by Tom Adams



No-One is too Small  
to Make a Difference  
by Greta Thunberg



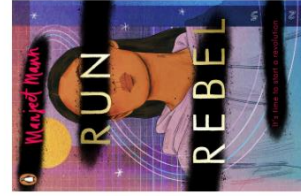
I Am Malala  
by Malala Yousafzai



I Am Not a Label  
by Cerrie Burnell

## INSPIRATIONAL PEOPLE

## PROTEST & ACTIVISM IN FICTION



Run Rebel by Manjeet Mann

Punching the Air by Ibi Zoboi

The Hate U Give

by Angie Thomas

The Bone Sparrow

by Zana Frallion

Moxie by Jennifer Mathieu

Two Boys Kissing

by David Levithan

Things a Bright Girl Can Do by

Sally Nicolls

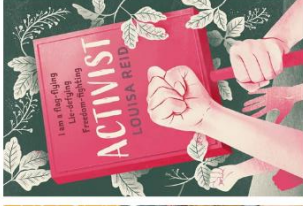
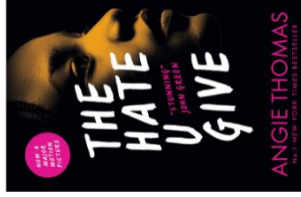
Burning Sunlight

by Anthea Simmons

How to Save the World

by Emma Shevach

Activist by Louisa Reid



## Year 9 - Spring 1 - The Language of Protest - Task Sheet

### Genre Overview

1. Create a plan for your own persuasive speech to the Houses of Parliament about why the legal age to drive should be lowered to 15 (remember to consider topic, audience, purpose, format and formality).
2. Write a persuasive newspaper article on a topic you feel strongly about e.g. no homework or climate change
3. Write a letter to the Prime Minister arguing why the voting age should be lowered to 16.

### Different types of texts:

1. Look at your opening to question 3 from the 'Genre Overview' section above and transform it to the opening of a speech to be given to parliament.
2. Explain the differences between broadsheet and a tabloid newspaper article.

### Key Terminology

1. Define the following words: political, suffragette and formality.
2. Write a paragraph about why Saturday School is good idea using a counter argument and a rebuttal.
3. Give an example of which type of non-fiction protest writing you think is the most powerful and explain why e.g. I think a speech is the most powerful form of protest writing because....

Retrieval: write as much as you remember from the following skills in class. Use the checklists in class to check your responses.

1. How do we write a summary?
2. List as many structural methods as you can think of.
3. What are the four sentence types?
4. List as many persuasive language methods as you can think of.

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

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

- Recognise enlargement and similarity
- Enlarge a shape by a positive SF
- Enlarge a shape from a point
- Enlarge a shape by a fractional SF
- Work out missing sides and angles in a pair of similar shapes.

## Keywords

**Similar Shapes:** shapes of different sizes that have corresponding sides in equal proportion and identical corresponding angles.

**Scale Factor:** the multiple describing how much a shape has been enlarged

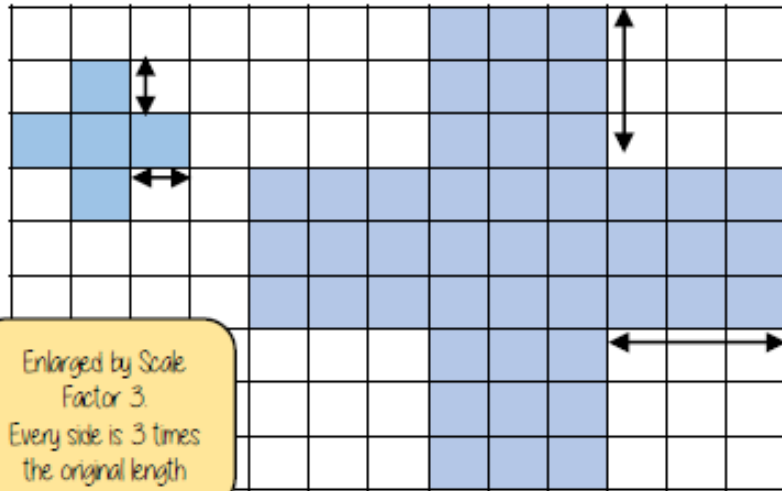
**Enlarge:** to change the size of a shape (enlargement is not always making a shape bigger)

**Corresponding:** objects (or sides) that appear in the same place in two similar situations.

**Image:** the picture or visual representation of the shape

## Enlarge by a positive scale factor

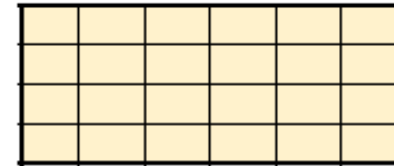
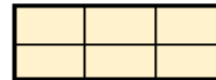
With a scale factor larger than 1 it makes the shape bigger



## Recognise enlargement & similarity

Shapes are similar if all pairs of corresponding sides are in the same ratio

These shapes are similar because all sides are increased by the same ratio



Enlargements are similar shapes with a ratio other than 1

Similar Shapes

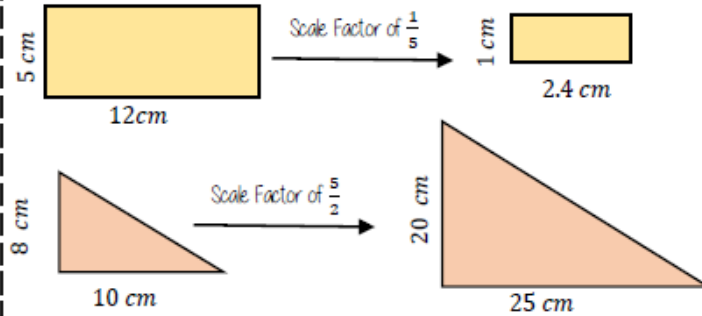


Enlargement (No Centre)



### Positive fractional scale factor

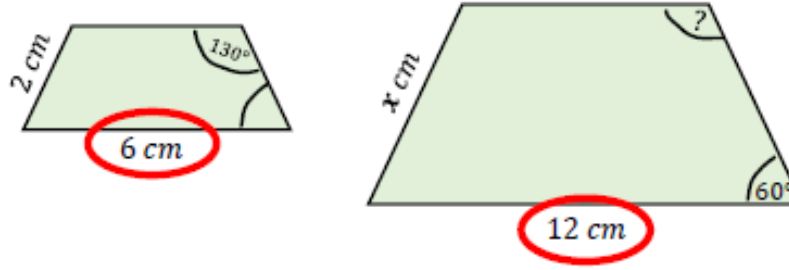
With a scale factor between 0 and 1 it makes the shape smaller



### Calculations in similar shapes

Don't forget that properties of shapes don't change with enlargements or in similar shapes

The two trapezium are similar find the missing side and angle



Corresponding sides identify the scale factor

$$\frac{12}{6} = 2 \quad \text{Scale Factor} = 2$$

Calculate the missing side

Length (corresponding side)  $\times$  scale factor  
 $2\text{ cm} \times 2$   
 $x = 4\text{ cm}$

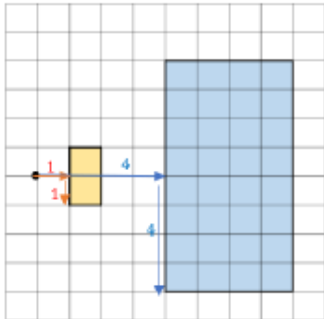
Enlargement does not change angle size

Calculate the missing angle

Corresponding angles remain the same  
 $130^\circ$

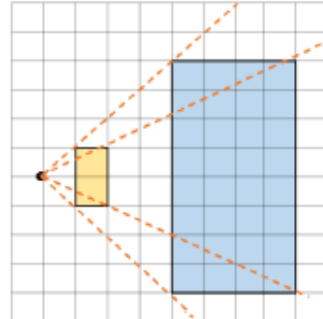
### Enlarge a shape from a point

Scaled distances method



Scale the distance between the point of enlargement and each corresponding vertices

Rays method



Multiply the distance from the centre of corresponding vertices by the scale factor along the ray

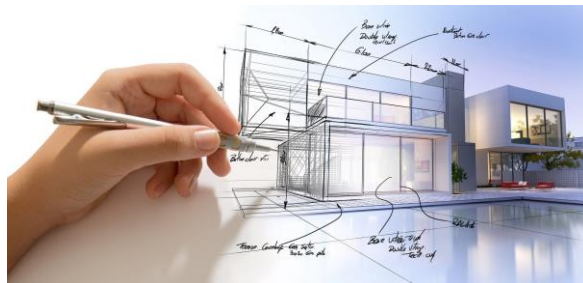
Fractional Scale Factor



Enlargement (with a centre)



Calculations in Similar Shapes



A job that relies on geometry:

An Architect

Architects design buildings and other structures.

Buildings must be not only attractive, but also safe and functional. Architects may be involved in all phases of development, from the first discussion with the client through to construction. Architects sometimes specialize in the design of one type of building, such as hospitals or homes.

# YEAR 9 — REASONING WITH GEOMETRY... Solving ratio & proportion problems

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

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

- Solve problems with direct proportion
- Use conversion graphs
- Solve problems with inverse proportion
- Solve ratio problems
- Solve 'best buy' problems

## Keywords

**Proportion:** a comparison between two numbers

**Ratio:** a ratio shows the relative size of two variables

**Direct proportion:** as one variable is multiplied by a scale factor the other variable is multiplied by the same scale factor.

**Inverse proportion:** as one variable is multiplied by a scale factor the other is divided by the same scale factor.

## Direct Proportion

As one variable changes the other changes at the same rate.



4 cans of pop = £2.40

$\times 0.5$  4 cans of pop = £2.40  
 $\times 50 \times$  2 cans of pop = £1.20

This multiplier is the same in the same way that this would be for ratio

This is a multiplicative change

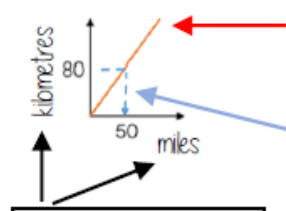
4 cans of pop = £2.40  
 $\times 3$  12 cans of pop = £7.20

Sometimes this is easiest if you work out how much one unit is worth first  
e.g. 1 can of pop = £0.60

R

## Conversion Graphs

Compare two variables



This is always a straight line because as one variable increases so does the other at the same rate

To make conversions between units you need to find the point to compare — then find the associated point by using your graph  
Using a ruler helps for accuracy  
Showing your conversion lines help as a "check" for solutions

R

Recipes



Proportion Problems



Conversion Graphs



Currency Conversions





## Inverse Proportion

As one variable is multiplied by a scale factor the other is divided by the same scale factor

### Examples of inversely proportional relationships

Time taken to fill a pool and the number of taps running

Time taken to paint a room and the number of workers

T is inversely proportional to G. When T=2 then G=20

T	1	2	8
G	40	20	5

$\div 2$  (from 1 to 2)      $\times 4$  (from 2 to 8)  
 $\times 2$  (from 40 to 20)      $\div 4$  (from 20 to 5)

## Best Buys

Have a directly proportional relationship

To calculate best buys you need to be able to compare the cost of one unit or units of equal amounts



### Shop A

4 cans for £1.20

$$\downarrow \quad \text{£1.20} \div 4$$

1 can is £0.30  
Or 30p

### Shop B

3 cans for 93p

$$\downarrow \quad \text{£0.93} \div 3$$

1 can is £0.31  
Or 31p

### Cost per item

Shop A is the best value as it is 1p cheaper per can of pop



### Shop A

4 cans for £1.20

$$\downarrow \quad 4 \div \text{£1.20}$$

£1 buys 3.333 cans of pop

### Shop B

3 cans for 93p

$$\downarrow \quad 3 \div \text{£0.93}$$

£1 buys 3.23 cans of pop

### Cost per pound

Shop A is still shown as being the best value but pay attention to the unit you are calculating, per item or per pound

Best value is the most product for the lowest price per unit

## Sharing a whole into a given ratio



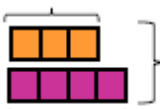
James and Lucy share £350 in the ratio 3:4. Work out how much each person earns

### Model the Question

James: Lucy

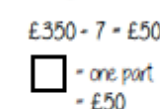
3 : 4

James



£350

Lucy



$$\text{£350} \div 7 = \text{£50}$$

□ = one part = £50

### Find the value of one part

Whole: £350

7 parts to share between (3 James, 4 Lucy)

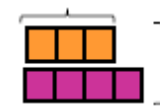
### Put back into the question

James: Lucy

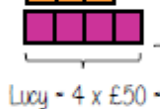
3 : 4

$$\left( \begin{array}{c} \times 50 \\ \times 50 \end{array} \right) \text{£150 : £200}$$

$$\text{James} = 3 \times \text{£50} = \text{£150}$$



£350



$$\text{Lucy} = 4 \times \text{£50} = \text{£200}$$

## Finding a value given 1:n (or n:1)



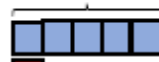
Inside a box are blue and red pens in the ratio 5:1. If there are 10 red pens how many blue pens are there?

### Model the Question

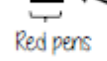
Blue : Red

5 : 1

Blue pens



Red pens



One unit = 10 pens

□ = one part = 10 pens

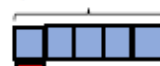
### Put back into the question

Blue : Red

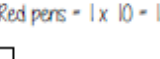
5 : 1

50 : 10

$$\text{Blue pens} = 5 \times 10 = 50 \text{ pens}$$



Red pens = 1 x 10 = 10 pens



There are 50 Blue Pens

A job that relies on geometry:

A Chef

### Chef Responsibilities Include

- Ensuring that all food is of excellent quality and served in a timely manner.
- Planning the menu, keeping in mind budget, and availability of seasonal ingredients.
- Coordinating kitchen staff, and assisting them as required.
- Training staff to prepare and cook all the menu items.
- Taking stock of ingredients and equipment, and placing orders to replenish stock.

## Inverse Proportion



## Best Buys



## Sharing in a ratio



## Ratio in the form 1:n



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

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

- Solve speed, distance, time questions
- Use distance time graphs
- Solve density, mass, volume problems
- Solve flow problems
- Use flow graphs
- Interpret rates of change and their units

## Keywords

**Convert:** change

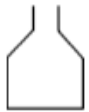
**Mass:** a measure of how much matter is in an object. Commonly measured by weight.

**Origin:** the coordinate (0, 0)

**Volume:** the amount of 3D space a shape takes up

**Substitute:** putting numbers where letters are — replacing numbers into a formula

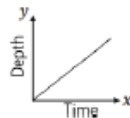
## Flow problems & graphs



This will fill at a constant rate, then as the space decreases it will speed up and the neck of the bottle fill at a faster constant speed



The cylinder will fill at a constant speed



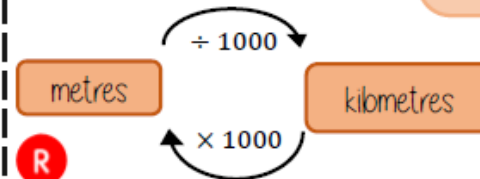
Units are important.  
Ensure any volume calculations are the same unit as the rate of flow

## Rates of change & units

Common rates of change relationships

Revisit your conversions between units of length and capacity

Speed: miles per hour  
Exchange rates: euros per pounds  
Density: mass per volume



Converting Units



Converting Area



Converting Volume



Rate of Change

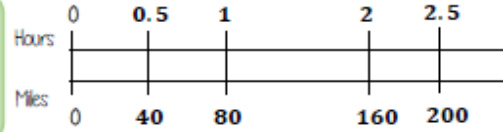


## Speed, Distance, Time

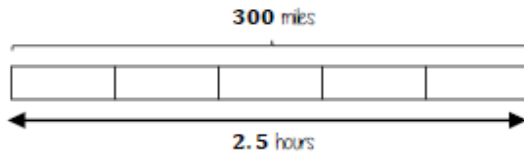
\*per\* for every  
e.g. 80 miles per hour (mph)  
Travel 80 miles every hour

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

You can use a double number line to help you calculate distance



e.g. A boat travels at a constant speed for 2.5 hours  
It travels 300 miles.



Bar models can help to calculate mph

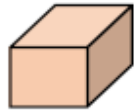
Each part is half an hour  
Each part is 60 miles

## Density, Mass, Volume

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

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

$$\text{mass} = \text{volume} \times \text{density}$$



volume of prism = Area of cross section  $\times$  Depth

R

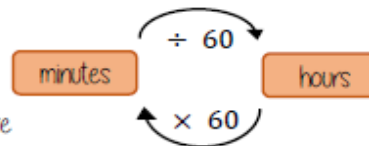
## Speed, Distance, Time



Before calculations – make sure you are working in the same units as the speed

Learn or learn how to rearrange the formula for speed, distance and time

Substitute in the variables given



$$\text{time} = \frac{\text{distance}}{\text{speed}}$$

$$\text{distance} = \text{speed} \times \text{time}$$

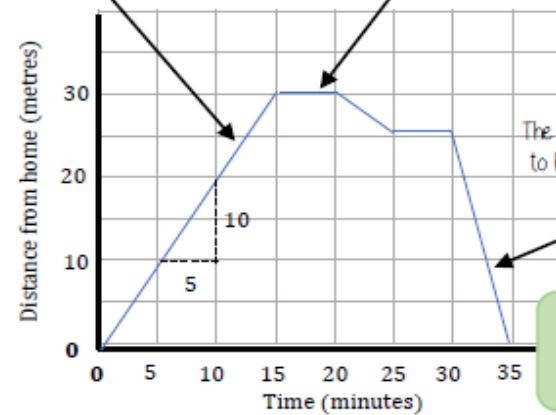
## Distance – Time graphs

The steeper a gradient the faster the speed

$$\frac{10}{5} = 2 \text{ metres per min}$$

Gradient = speed

Horizontal lines represent staying still



The distance coming closer to home shows the return journey

Units are important  
Meters per minute

Speed Distance  
Time



Density Mass  
Volume



Distance Time  
Graphs



Gradient



A job that relies on this area of maths

**Mechanical Engineer**

Mechanical engineering is a branch of engineering that applies the principles of Mechanics and Materials science for analysis, design, manufacturing, and maintenance of mechanical systems. It involves the production and usage of heat and mechanical power for the design, production, and operation of machines and tools. They can vary from building a rocket ship all the way down to a modern car. It is one of the oldest and broadest engineering disciplines.

## Year 9 RS: Is it ever right to fight?

Key words	
Peace	A state of mutual harmony between people and countries.
Ahimsa	The principle of non-injury to all living things.
Just War Theory	This is a war that is fought in a fair and noble way.
Jihad	A struggle or fight against the enemies of Islam.
Greater Jihad	A struggle with oneself to be a good Muslim
Lesser Jihad	A struggle with oneself and the rest of the world.
War	A state of conflict and tension between countries.
Pacifism	Not believing in violence.

'A kind word with forgiveness is better than charity followed by injury' *Surah, Qur'an 2:263*

'If anyone does evil or wrongs his own soul, but afterwards seeks God's forgiveness, he will find God often forgiving, Most Merciful.'

*Surah , Qur'an 4:110*

'Be forgiving and control yourself in the face of provocation; give justice to the person who was unfair and unjust to you; give to the one who did not help you when you were in need, and keep fellowship with the one who did not care about you.' *Hadith*

### Christian Teachings on War and Peace.

In the Old Testament in the Bible God commanded the Israelites to fight against nations that had sinned against Him. These were called 'holy wars' because they were against nations who had blasphemed about the Israelite God 'Yahweh'.

In the Bible a shepherd boy David killed a giant called Goliath with a small slingshot. Goliath had publicly provoked the Israelites and defied God's name, and David stepped forward to challenge him. This ended the battle and showed God's power, might and glory to the rest of the nation. Sometimes, fighting can be the lesser of two evils, to defeat evil and encourage peace. In the New Testament Jesus believed in peace and love, he did not encourage people to fight or wage war on each other. War encourages people to be selfish and inflict physical and mental suffering on each other. War leads to a breakdown of trust and love between humans and it brings nothing but misery for everyone involved. Jesus was a pacifist (he believed in peace) and said whoever uses violence to get what they want will have violence done against them. He told Christians they must: "Love your neighbour as yourself." This means loving and showing forgiveness when someone does something wrong rather than seeking revenge. The Bible seems to give two messages about war. In the Old Testament God was instructing his people to attack and kill their enemies and quote, "An eye for an eye and a tooth for a tooth."

### Muslim Teachings on War and Peace.

The Arabic word for struggle is jihad. All Muslims have a daily struggle or Jihad to make society perfectly Muslim. This includes struggling with yourself and your desires and not fighting. This is the greater jihad.

The lesser jihad is the struggle with forces outside yourself by means of war.

Muslims call wars fought in the name of Allah a Jihad or Holy War.

#### What are the rules/limits for Muslims?

It must be a last resort – all non-violent methods to solve the problem must have been tried. It must be authorised and led by a Muslim authority. It must be fought in such a way as to cause the minimum amount of suffering.

Innocent civilians (especially the old, the young, and women) must not be attacked.

It must be ended as soon as the enemy lays down their arms.

This shows that God encouraged revenge for things that were done against someone's wishes. However, in the New Testament Jesus said he had come to bring peace and no good could ever come from violence. Jesus also said, "Those who live by the sword shall die by the sword." Patience, forgiveness and love were the only ways to deal with violence and war. This is the point of view most Christians try to follow.

Some Christians, however, feel there are certain conditions that can lead to war being acceptable. Violence can be used to uphold peace and freedom and resist attack. Violence must promote good or avoid evil and those who are to be attacked must deserve it. This is called a "Just War". Peace and justice must always be restored once a war has happened. Many Christians serve in the armed forces, and believe that Jesus' teachings on peace apply to society, and not world conflict. They are called combatants – they believe it is better to fight against evil and make the world a better place. Some Christians believe war is right, although they are not willing to fight in combat. These people (non-combatants) would rather help out in practical ways e.g. working as a medic or driving trucks. There are some Christians called, "Quakers", who believe all violence is against God's wishes. They are also called Pacifists, or conscientious objectors. They refuse to fight in the army and say the Spirit of Jesus could never move people to fighting a war because the teachings of Christ are about love.





# Year 9 Knowledge Organiser



## Job Roles

The performing Arts Industry is made up of many different job roles who all must work together collaboratively to make sure that each production is a success.

A **sound designer** is responsible for designing the use of sound within a production, e.g. sound effects or music, working with the director to create and develop sound that enhances a production. They will also advise the director on whether the production requires microphones and other technical equipment.

The **director** is responsible for the overall creative vision of the show. They have to bring the different elements of the production together to produce the final production. They have meetings with the design team at various stages during a production. They will also direct the performers and help them develop their characters in rehearsals ahead of the final performance.

A **set designer** is responsible for designing the set, working closely with the director and the design team to create the world of the show. They may begin by providing the director with a concept, before moving on to the technical drawing stage. Once the design is complete, the set is constructed and completed by various departments that specialise in materials such as metal, wood and paint.

A **costume designer** is responsible for designing the costume, hair and make-up for a production, working closely with the design team to ensure that the costumes match the style of the show. They will often create designs ahead of the production being cast and can then make changes once they have met the performers. The costume designer works closely with the costume department, who are responsible for making the outfits and wigs



## Five Ways to Wellbeing Activity Sheet

Use the challenges on this sheet to help your child feel better and find ways of managing their own mental wellbeing.

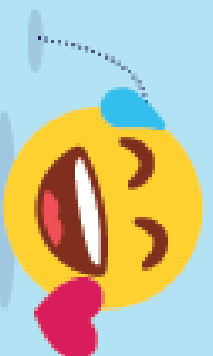
Why not cut them all out and encourage them to choose one or two per day to do. Once they have tried them all they can pick their favourites to do regularly.



### Be active



Do a half an hour walk around the local area and write about what you saw when you get back including how it made you feel.



Set up an indoor obstacle course to get your heart rate up

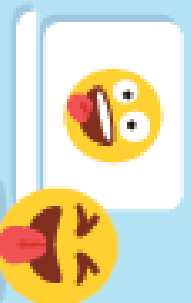


Have a kitchen disco with your household – each pick your favourite songs and do your most energetic dancing together.

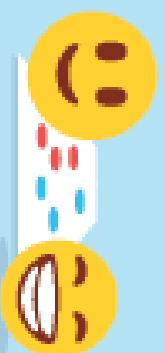
### Connect



Write a letter to someone that you haven't seen for a long time. Ask how they are and tell them how you have been feeling. Draw pictures or take photos to print and go with it.



Make contact with a friend from school – ask a parent to help you set up a video call so that you can see each other and talk.

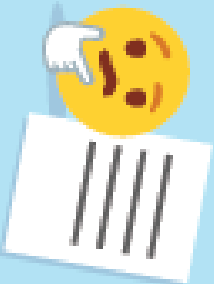


Connect with those you live with by spending time playing a board game together.

## Take notice



Sit outside and listen to the birds sing, and notice what other sounds you can hear.



Write a list of the three things you look forward to doing the most when we are allowed to do them again.



Go for a walk in your local park and look at the trees around you noticing what colour the leaves are. Write about what you see and how it made you feel.

## Learn



Choose something you are interested in and spend some time reading about it and learning interesting facts to tell people.



Choose a country you might like to visit one day and learn five words from the language.

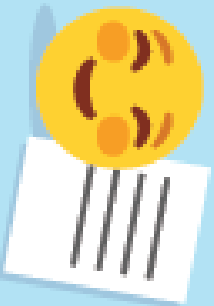


Learn to cook a meal with the person in the household that usually cooks. Help them with the preparation and the clearing up.

## Give



Make a homemade card to send to a friend or family member that you can't see at the moment.



Write a list of the things you appreciate most about the people you live with and let them see it.



Help with some of the chores around the house whether it's doing the Hoovering or putting the socks.



Something to think about....

## KEY QUOTE OF THE WEEK:

*'Every unselfish act of love whispers God's name.'* Bob Goff, *Restore International*

**LISTEN:** *Where is the Love?* by the Black Eyed Peas asks challenging questions about who we should be showing love to and how:

<https://www.google.com/search?q=where+is+the+love%3F&ie=&oe=>

*Reckless Love* by Cory Ashby: <https://www.youtube.com/watch?v=Sc6SSHuZvQE> This Christian worship song is about God's unconditional love for mankind. It uses the analogy of the lost sheep to describe the Christian belief that God loves everyone so much, that he will come and find us.

*Love Divine, All Loves Excelling* by Charles Wesley:

<https://www.youtube.com/watch?v=sw5ZCZeS32M> The words of this favourite hymn describes the love Christians believe that God has for mankind and how they see Jesus as the ultimate demonstration of this love.

## THINK:



What does this picture make you think of?

Is it better to give or to receive love?

How would you characterise the love of the parent, and the love of the child?

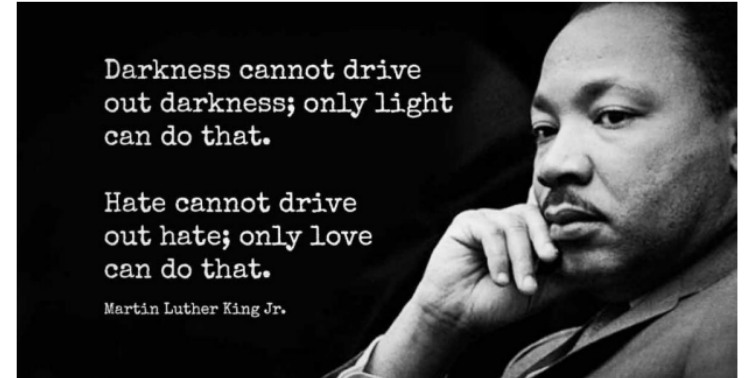
Which do you need right now?



**BIBLE STORY OF THE WEEK:** The Good Samaritan: Luke 10:25-37 & Mark 12: 28-31

“Of all the commandments, which is the most important?” “The most important one,” answered Jesus, “is this: ‘Hear, O Israel: The Lord our God, the Lord is one. Love the Lord your God with all your heart and with all your soul and with all your mind and with all your strength.’ The second is this: ‘Love your neighbour as yourself.’ There is no commandment greater than these.”

But the expert in the law wanted to justify himself so he asked: ‘And who is my neighbour?’



## ACTIVITIES that can help develop PRACTICES-HABITS:

Your nearest neighbours are in your family. **Read** about love languages and ask a family member how you can show that you love them today.

Everyone gives and receives love differently, but with a little insight into these differences, we can be confidently equipped to communicate love well. This is true for all forms of relationship – for couples, for children and teenagers, for friends and co-workers, for long-distance relationships, or even – at this time – socially-distanced relationships. Understanding how we give and receive love can help us understand how others might like to be shown love, too.

Ideas include: Washing up (act of service), playing a game (quality time), giving encouragement (words of affirmation), giving a hug (physical affection), making a small homemade present (gifts).



Love Language	How to Communicate	Actions to Take	Things to Avoid
 Words of Affirmation	Encourage, affirm, appreciate, empathize, compliment, Listen actively	Say I love you Write notes saying you are proud of them. Praise them in front of others. Be specific in your praise	Non-constructive criticism, not recognising or appreciating effort.
 PHYSICAL TOUCH	Non-verbal - use body language & touch to emphasize love.	Hold hands, give hugs, pats on the back. Read stories together Give family group hugs	Physical neglect, abuse of any kind.
 RECEIVING GIFTS	Gifts & gestures show that you are known, loved and cared for.	Give thoughtful gifts & gestures. Small things matter in a big way. Express gratitude when receiving a gift.	Forgetting special occasions, unenthusiastic gift receiving.
 QUALITY TIME	Uninterrupted and focuses one-on-one time. Give undivided attention. Watch as they are playing.	Create special moments together. Make eye contact Pay attention to details Eat together as a family.	Distractions when spending time together. Long stints without one-on-one time.
 ACTS OF SERVICE	Use action phrases like "I'll help..." They want to know you're with them and there to help.	Do chores together. Work on projects together. Pick them up on time.	Making the requests of others a higher priority, lacking follow-through on tasks big and small.

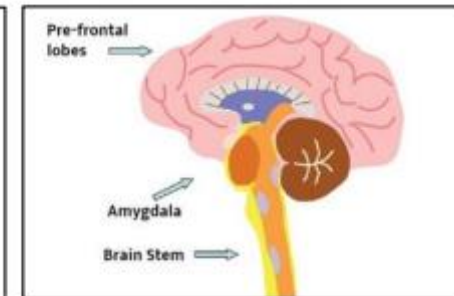
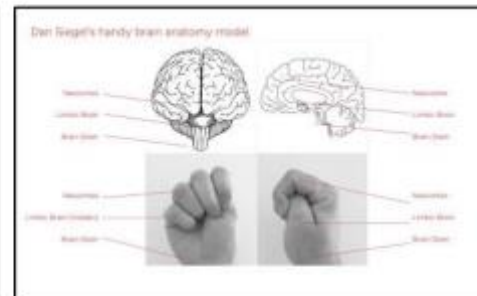


# KS3 Knowledge Organiser - Understanding and Training our Brain



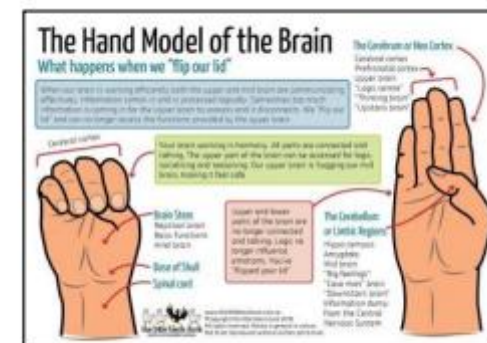
## BRAIN STRUCTURE

Be able to use the hand model and the upstairs/downstairs model to explain the brain.  
Know the term amygdala.



## WHEN OUR BODY PERCEIVES A THREAT

1. The amygdala floods our body with the hormones adrenaline and cortisol
2. This prompts us to either FIGHT, FLIGHT or FREEZE
3. Our heart rate and blood pressure increase
4. Our skin pales or flushes
5. Our ability to feel pain decreases
6. Our pupils dilate
7. Our memory might be affected
8. We might be trembling
9. Sometimes people lose control of their bladder!



## WHERE TO SEEK SUPPORT IF YOU NEED IT

- Shelf help books in the library or public library
- Parent or other adult at home
- Friends
- Older student
- Tutor or achievement leader
- Learning mentor
- Wellbeing team (Miss Neal, Mrs Freds, Mrs Dobell, Mrs Crissall, Mrs Horne)
- Mrs Whitcombe or another member of the leadership team
- School nurse drop in
- School nurse referral
- Kooth
- Emotional wellbeing hub
- Dr Hope
- Samaritans

## HOW TO HELP YOUR BRAIN LEARN

1. Challenge your brain
2. Be curious and imaginative
3. Deal with stress or anxiety first
4. Drink plenty of water
5. Eat a healthy diet
6. Get enough sleep
7. Take plenty of physical exercise
8. Break your learning into chunks
9. Take brain breaks regularly

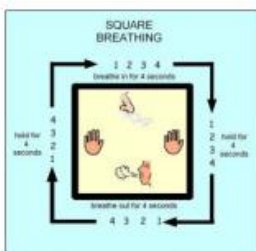
## FIVE WAYS TO WELLBEING

*Know the five; know what they mean; give examples*



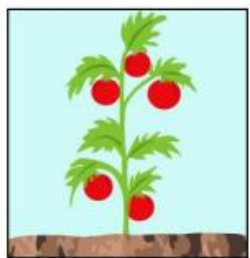
## BREATHING

**4, 5, 6 breathing**  
Breathe in for 4,  
hold for 5,  
breathe out for  
6. Repeat as long  
as you need to.



## WHAT TO DO WHEN YOU WORRY TOO MUCH

- Stop your worries growing by paying less attention to them
- Fight your thoughts with logical answers
- Use planned worry time
- Imagine and deal with a worry monster
- Re-set your system with exercise
- Re-set your system with relaxation techniques



## GROUNDING

### The 5-4-3-2-1 Coping Technique

Ease your state of mind in stressful moments.





iPhone users

Keeping everybody safe at



Android users



We aim to keep everyone in our community safe. If you feel worried about yourself or someone else, please **speak to someone you trust as soon as you can**. Please find your trusted or an emotionally available adult in the academy who will be there to listen and support you. Our Designated Safeguarding Leads (DSL) are **Mr Davis, Mrs Milroy, Mr Ford, Mr Ward, Miss Wenlock, Mr Fisher, Mr Richardson, Mrs Molloy, Mrs Clayton and Mrs Hewitt-Coleman**.

What is abuse in safeguarding concerns?

**Physical Abuse** - Physical abuse is any way of intentionally causing physical harm to a person or purpose. This could result in injuries such as in bruises, broken bones, burns or scalds or bite marks.

**Emotional Abuse** - Emotional abuse is any type of abuse that involves the continual emotional mistreatment of a person. It's sometimes called psychological abuse. Emotional abuse can involve deliberately trying to scare, humiliate, isolate or ignore and stopping you from seeing friends or family.

**Sexual Abuse** - When a child or young person is sexually abused, they're forced or tricked into sexual activities without permission. This include being forced to look at images or videos. Sexual abuse can happen anywhere – and it can happen in person or online.

**Neglect** - Neglect can be a lot of different things. It is when you do not get enough help or care from someone who should be looking after you. This could include having a lack of food, clothing and attention and medical care.

**Bullying** is behaviour that hurts someone else. It includes name calling, hitting, pushing, spreading rumours, threatening or undermining someone. It can happen anywhere – at school, at home or online. Online bullying is called Cyber-bullying. It's usually repeated over a long period of time and can hurt a child both physically and emotionally.

**County Lines** is the police term for urban gangs exploiting young people into moving drugs from a hub, normally a large city, into other markets - suburban areas and market and coastal towns - using dedicated mobile phone lines or "deal lines". Children as young as 12 years old have been exploited into carrying drugs for gangs. This can involve children being trafficked away from their home area, staying in accommodation and selling and manufacturing drugs.

Someone who starts to believe in or supports extreme views linked to terrorism and forms of extremism leading to terrorism is linked to **Radicalisation**. Extremism can also be linked to this as extreme views, vocal or active opposition to fundamental British values, including democracy, the rule of law, mutual respect and tolerance of different faiths and beliefs.

**Where do I go for help and advice?**

Speak to any available adult in school. This could include your Head of Year, Mr Davis, Mrs Milroy, Mr Richardson or Mr Ford. Advice can be found by scanning the QR codes at the top.

**If you feel you need support or see or hear something that concerns you, report it!**  
**We are here to help.**



Childline – 0800 1111  
[www.childline.org.uk](http://www.childline.org.uk)

Advice on mental health.  
[www.youngminds.org.uk](http://www.youngminds.org.uk)

Staying safe online  
[www.childnet.com](http://www.childnet.com)

Advice on LGBT+ issues  
[www.theproudtrust.org](http://www.theproudtrust.org)

Advice for young people  
[www.themix.org.uk](http://www.themix.org.uk)