



**Y8**

# **Knowledge Organiser**

**Half term 3 & 4**

**January – March 2023**



# HOW TO SELF TEST

## WITH KNOWLEDGE ORGANISERS



### Mind Mapping

Mind mapping is simply a diagram used to visually represent or outline information.

It is a graphic technique you can use to translate what is in your mind into a visual picture. Since mind mapping works like the brain does it allows you to organise information faster and more efficiently.

Use information gathered from your knowledge organiser to create mind maps, make sure to use colours and images, keeping writing to a bare minimum. Using this technique will help to embed key information into your long-term memory.



### HOW TO MIND MAP VIDEO



### Flash Cards

Use your knowledge organiser to make flash cards. Write the question on one side and on the other record the answer. Test yourself or work with a friend to make sure you know all the key information for each topic. You could also use flash cards to test yourself on the definitions of key terminology.

Remember you need to revisit information 10 times for it to be embedded in your long-term memory.



### HOW TO MAKE FLASH CARDS VIDEO



### Revision Clocks

Start by drawing a basic clock. Break your knowledge organiser down into 12 sub-categories. Make notes in each chunk of the clock. Revise each slot for 5 minutes, turn the clock over and then try to write out as much information as you can from one of the segments. E.g. all the information in the 2-3pm segment.

Your brain will retain more information if you include images as well as key words.

### HOW TO MAKE A REVISION CLOCK



## 'Of Mice and Men'

|  |  |  |  |   |
|--|--|--|--|---|
| What were The Jim Crow Laws?                             | What is feminism?<br>How is it presented in the novella? | Write down FIVE themes presented in 'Of Mice and Men'? | Why has Steinbeck created George and Lennie as binary opposites? | What is Steinbeck's purpose in crafting Lennie as a disabled character? |
| What is the American Dream?                              | Write down a list of motifs and what they represent.     | What was The Great Depression?                         | How did The Wall Street Crash affect society?                    | What and who is Steinbeck critiquing in this novella?                   |
| How is a sense of foreshadowing created in each chapter? | What is Lennie a symbol of?                              | What type of character is Slim?                        | Why does Curley get aggravated by Lennie?                        | What does Curley's wife symbolise?                                      |
| Why is Curley's wife always dressed in red?              | Write down five adjectives to describe Crooks.           | Why does Crooks treat Lennie unfairly?                 | Why does George not like Curley?                                 | What does Crooks symbolise?   |
| What book does Crooks keep?                              | Why does George choose to kill Lennie at the end?        | How does George feel about killing Lennie?             | What is Steinbeck's message in this novella?                     | What does Steinbeck want the reader to feel at the end of the novella?  |

## Of Mice and Men



### Context:

In the 1930s America was a mess. Poverty, social inequalities and depression were rife. This was all due to the American stock market crashing in 1929 which led to high levels of unemployment, drought and overfarming, bankruptcy and homelessness. This time period is often referred to as the Great Depression. Many farmers who had lost their farms travelled to California where the climate and soil were better. They only took what they could carry on their backs. George and Lennie are examples of traveling farm workers

### Key Vocabulary

American Dream, Immigrants, The Great Depression, Compassion, Characterisation, Hierarchy, Binary Opposites, Segregation, feminism, motif, symbolism and critiquing.

### Character Roles:

**Lennie:** Lennie is one of the protagonists of the novel; simply put, he loves to pet soft things, is blindly devoted to George and their vision of the farm, and possesses incredible physical strength.

**George:** Like Lennie, George can be defined by a few distinct characteristics. He is short-tempered but a loving and devoted friend, whose frequent protests against life with Lennie never weaken his commitment to protecting his friend. George's first words, a stern warning to Lennie not to drink so much lest he get sick, set the tone of their relationship

**Curley:** Curley is the boss's son, and because his father only appears once, Curley is the main representative in the novella of the land-owning class. Like his father, Curley wears "high-heeled boots" to mark his wealth and status, and most likely to lessen the smallness of his stature. Curley's primary character trait is insecurity.

**Candy:** One of the book's major themes and several of its dominant symbols revolve around Candy. The old handyman, aging and left with only one hand as the result of an accident, worries that the boss will soon declare him useless and demand that he leave the ranch.

**Curley's Wife:** Steinbeck generally depicts women as troublemakers who bring ruin on men and drive them mad. Curley's wife, who walks the ranch as a temptress, seems to be a prime example of this destructive tendency—Curley's already bad temper has only worsened since their wedding.

**Crooks:** Crooks is a lively, sharp-witted, black stable-hand, who takes his name from his crooked back. Like most of the characters in the story, he admits that he is extremely lonely. His character explores the impact of racism and inequality.

**Slim:** Slim, the "jerkline skinner," is a figure of natural authority. He commands the respect of the other men through his professional skill and his strength of character, "a gravity in his manner."

## Themes:

**Friendship:** George and Lennie's relationship shapes the plot of the novel. In *Of Mice and Men*, friendship is dangerous: every time any character gets close to any other, something goes wrong.

**Prejudice:** The novel explores racism, sexism, ageism, ableism and other discrimination too. Those who are discriminated against accept the prejudice against them as a way of life.

**Dreams:** In *Of Mice and Men*, dreams are necessary, even if the characters know that they'll never achieve them. Steinbeck sees dreams as foolish and unnecessary, just leading to more sorrow.

**Innocence:** Innocence may protect Lennie, because he never has to deal with the reality of what he's done and it doesn't protect the people (or pets) around him.

**Justice:** In *Of Mice and Men*, the ranch operates by its own set of rules, without a higher order dictated by the law. Lennie has no grasp of the consequences of his actions, so justice has no meaning for him. Steinbeck suggests that mental disability shouldn't make someone immune to justice.

**Violence:** Violence in the novel is physical, psychological, and emotional. Characters are so accustomed to suspicion and failure that they treat each other cruelly, more ready to destroy each other's dreams (and bodies) than to build them up.



## Plot Summary:

- George and Lennie are spending the night by a pool before starting work at a new ranch.
- George is annoyed with Lennie because they had to leave in a hurry from their last job. Lennie has a habit of getting into trouble.
- Lennie persuades George to him about their dream farm.
- George and Lennie arrive at the ranch. Curley tries to pick a fight with Lennie. Curley's wife flirts with the ranchers and catches Lennie's attention.
- We find out a little more about what happened at George and Lennie's last job.
- Carlson wants to shoot Candy's dog because it is no longer useful.
- Candy is eventually pushed into agreeing and Carlson takes the dog away and shoots it.
- Candy overhears George and Lennie talking about their dream farm. He offers his money so he can join them.
- Curley starts a fight with Lennie. Lennie crushes Curley's hand but Slim convinces Curley to say it got caught in a machine.
- Lennie wanders into Crooks' room. At first, Crooks tries to get rid of him but in the end he lets him stay.
- Candy joins them and eventually they all start talking about the "dream".
- Curley's wife arrives, and is unkind to Crooks.
- The other men return from town and Curley's wife leaves.
- Lennie is in the barn-he has accidentally killed his puppy given to him by Slim.
- Curley's wife finds him and they talk about their dreams. We find out she wanted to be a movie star.
- They find out that they both like soft things. Curley's wife lets Lennie stroke her hair but she gets angry when he strokes it too hard. Lennie panics-breaking her neck.
- Lennie runs away and Candy finds Curley's wife in the barn. The other men decide to hunt Lennie down.
- Lennie goes back to the pool where he and George stayed the night before they went to the ranch.
- George finds Lennie and calms him down by telling him about the dream.
- George knows that Curley wants to kill Lennie in a really painful way, so he shoots Lennie himself before the other men arrive.



## How to log in to Sparx

1 Go to [sparx.co.uk](https://sparx.co.uk) and click **Log in**

2 Select **Student Login**

3 Carefully select your school from the list

4 Select **New Sparx user**

5 Enter your:

- First Name
- Last Name
- Date of Birth

6 Click **Submit**

7 You will be prompted to set your own password. The password must be at least 6 characters long and you will need to remember it

8 Confirm your username and password, and click **Finish**

9 You can now log in to Sparx using your username and password

10 If a password is lost, you can select the option to request a new password from your teacher



## Reactions 2

In this topic we will be studying:

- Chemical and physical changes
- Conservation of mass
- Combustion
- Complete and incomplete combustion
- Fuels and pollution
- Thermal decomposition
- Endothermic and exothermic reactions
- Energy Level diagrams
- Bond energies

QR codes to go to BBC bitesize





## Matter 2

In this unit we will be studying:

Elements and compounds

The periodic table

Metals and non-metals

Naming salts

Atomic structure

The alkali metals

The noble gases

Reactions of group 1 and 7

Polymers

Use the QR codes to find more information on BBC bitesize.







## Key ideas

The periodic table of elements shows all elements that exist.

The vertical columns are called groups. The elements in a group have similar properties.

The horizontal rows of the Periodic Table are called periods.

Metals are found on the right-hand side of the periodic table.

Non-metals are found on the left-hand side.

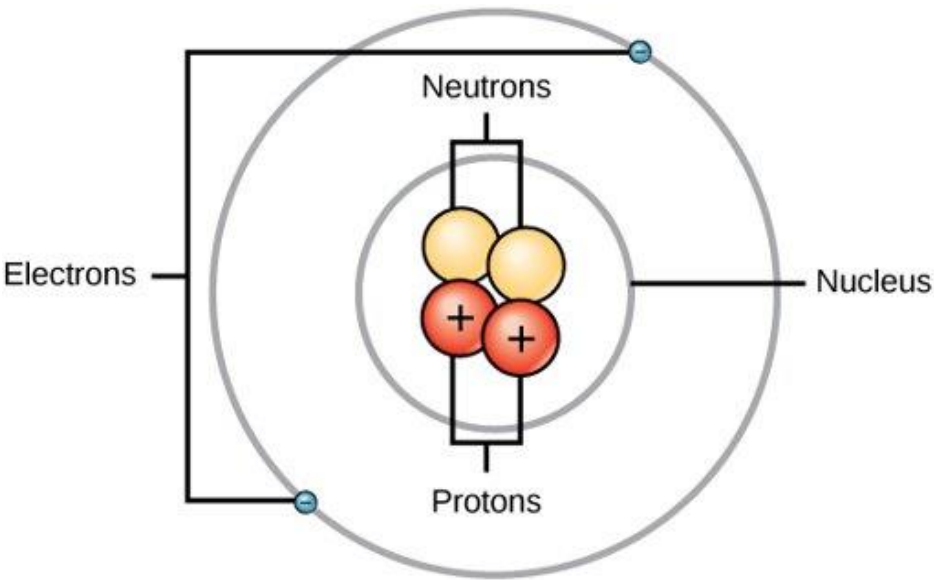
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# Key ideas

Elements are made up of atoms. Each atom is different which is why elements are different. They are made up of 3 subatomic particles

| Subatomic particle | Position in atom     | Relative charge | Relative mass |
|--------------------|----------------------|-----------------|---------------|
| Proton             | nucleus              | Positive        | 1             |
| Electron           | Energy level (shell) | Negative        | Very small    |
| Neutron            | nucleus              | neutral         | 1             |



You can use the information on the periodic table to calculate the number of each subatomic particle in different elements.

**Relative atomic mass**  
The total number of protons plus neutrons

↓

Symbol  
Used in  
formulae and  
as an  
abbreviation

4

**He**  
Helium

2

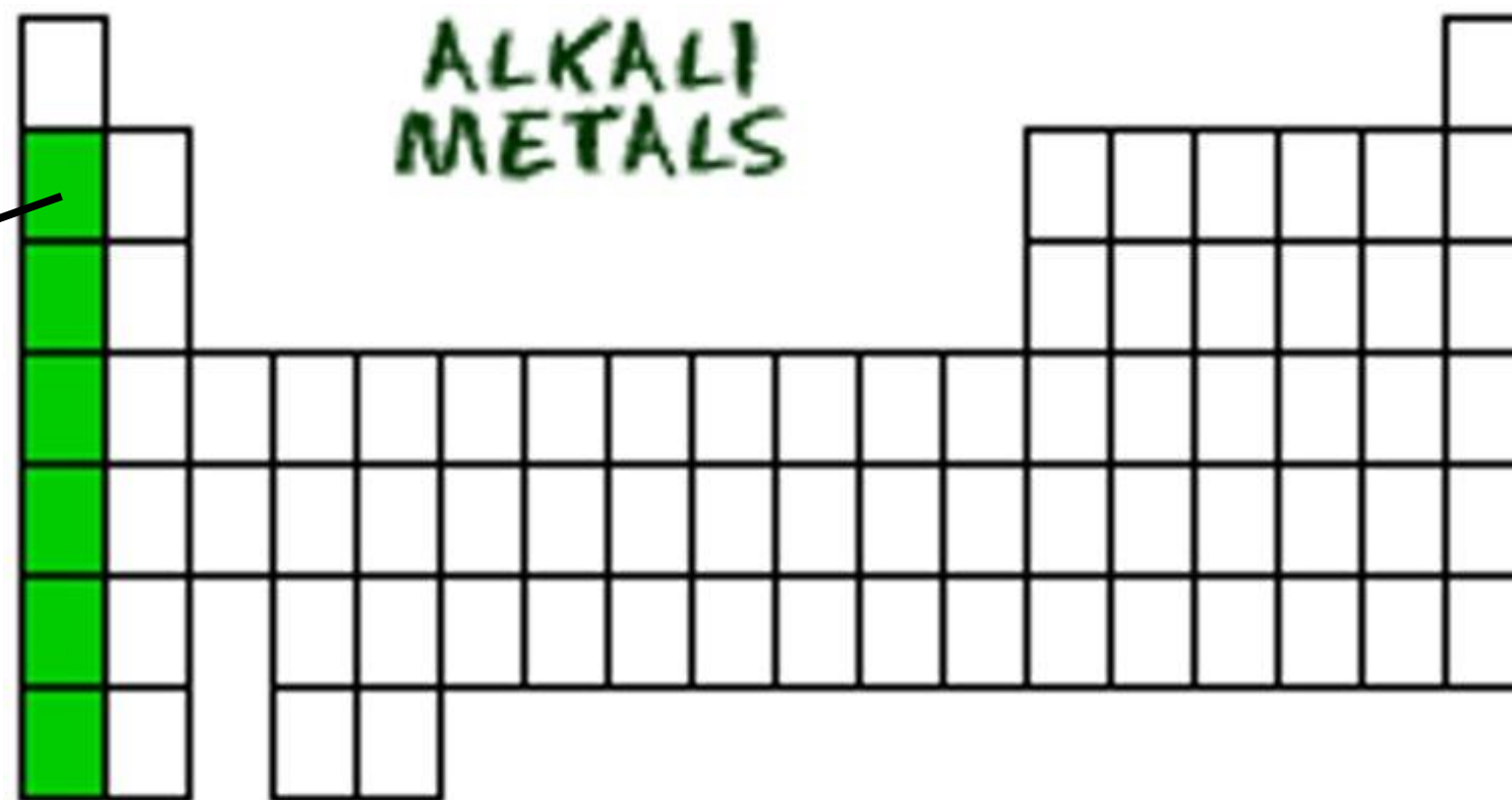
Name

**Atomic (proton) number**  
Number of protons  
(which is equal to the number of electrons)

Helium  
Number of protons= 2  
Number of electrons= 2  
Number of neutrons= 2 (4-2)

## Key ideas

|                                      |
|--------------------------------------|
| 7<br><b>Li</b><br>lithium<br>3       |
| 23<br><b>Na</b><br>sodium<br>11      |
| 39<br><b>K</b><br>potassium<br>19    |
| 85<br><b>Rb</b><br>rubidium<br>37    |
| 133<br><b>Cs</b><br>caesium<br>55    |
| [223]<br><b>Fr</b><br>francium<br>87 |



Group 1 are called the alkali metals.

They are good conductors of heat and electricity and are shiny when cut.

Alkali metals are very reactive with water.

They get more reactive as you go down the group.

The reaction makes hydrogen gas and produces an alkaline solution.

alkali metal + water  $\rightarrow$  metal hydroxide + hydrogen

sodium + water  $\rightarrow$  sodium hydroxide + hydrogen

# Key ideas

Group 7 are called the halogens.

Group 7 elements are reactive.

Their reactions are similar, but they get less reactive as you go down the group.

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------------------------|--|----|
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Group 7 – the halogens |  | He |
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                        |  | Ne |
| 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 | Rf | Db | Sg | Bh | Hs | Mt | Ds | Rg |    |    |    |    |    |                        |  |    |

Group 0 are called the noble gases.

They are very unreactive.

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |  |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------------------|--|----|
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Group 0 – the noble gases |  | He |
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |  | Ne |
| 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 | Ac |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |  |    |

▲ Group 0 is on the right of the Periodic Table.



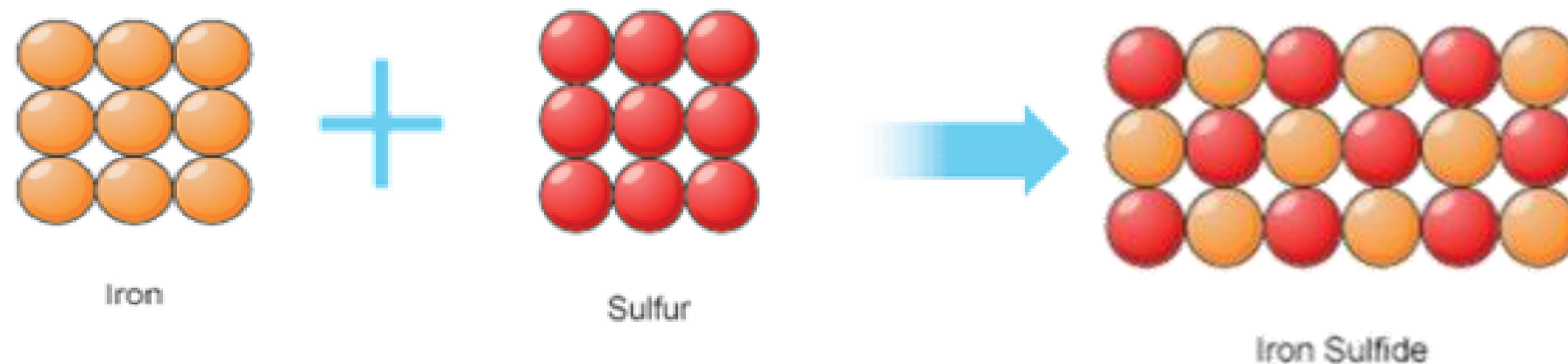
# Matter: Key words

| Key word | Definition   |
|----------|--|
| Element  | A substance containing only one type of atom.                                |
| Compound | Two or more different elements that have been chemically combined            |
| Proton   | A positively charged sub-atomic particle with a relative mass of 1.          |
| Electron | A negatively charged sub-atomic particle with a relative mass of 1.          |
| Neutron  | A sub-atomic particle with no charge and a relative mass that is very small. |
| Group    | A vertical column of the periodic table                                      |
| Period   | A horizontal row of the periodic table                                       |

# Key ideas

In every chemical reaction, atoms are **rearranged** to make new substances.

Iron + Sulfur → Iron Sulfide



We can tell that a chemical reaction has taken place by looking for the **signs of a chemical reaction**. These can be seen as:

- Colour change
- Fizzing/buzzing
- Temperature change

## Key Ideas

### Conservation of mass:

No atoms are lost or made during a chemical reaction.

Mass of reactants = Mass of products

This loss or gain in mass can usually be explained because a reactant or product is a **gas** and its mass has not been taken into account.

Mass appears to be lost = a product is a gas

Mass appears to be gained = a reactant is a gas.

23g

32g

55g

Sodium + Oxygen → Sodium Oxide

Calcium carbonate → Calcium oxide + Carbon dioxide

100g

56g

44g



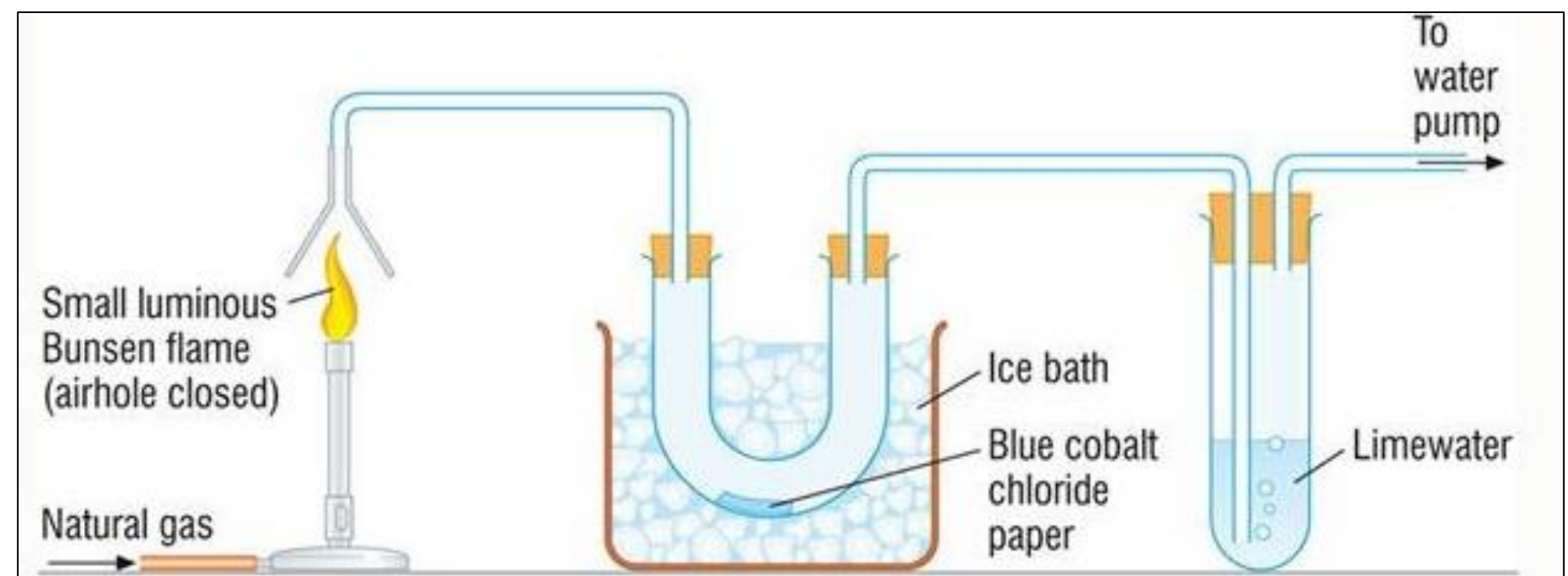
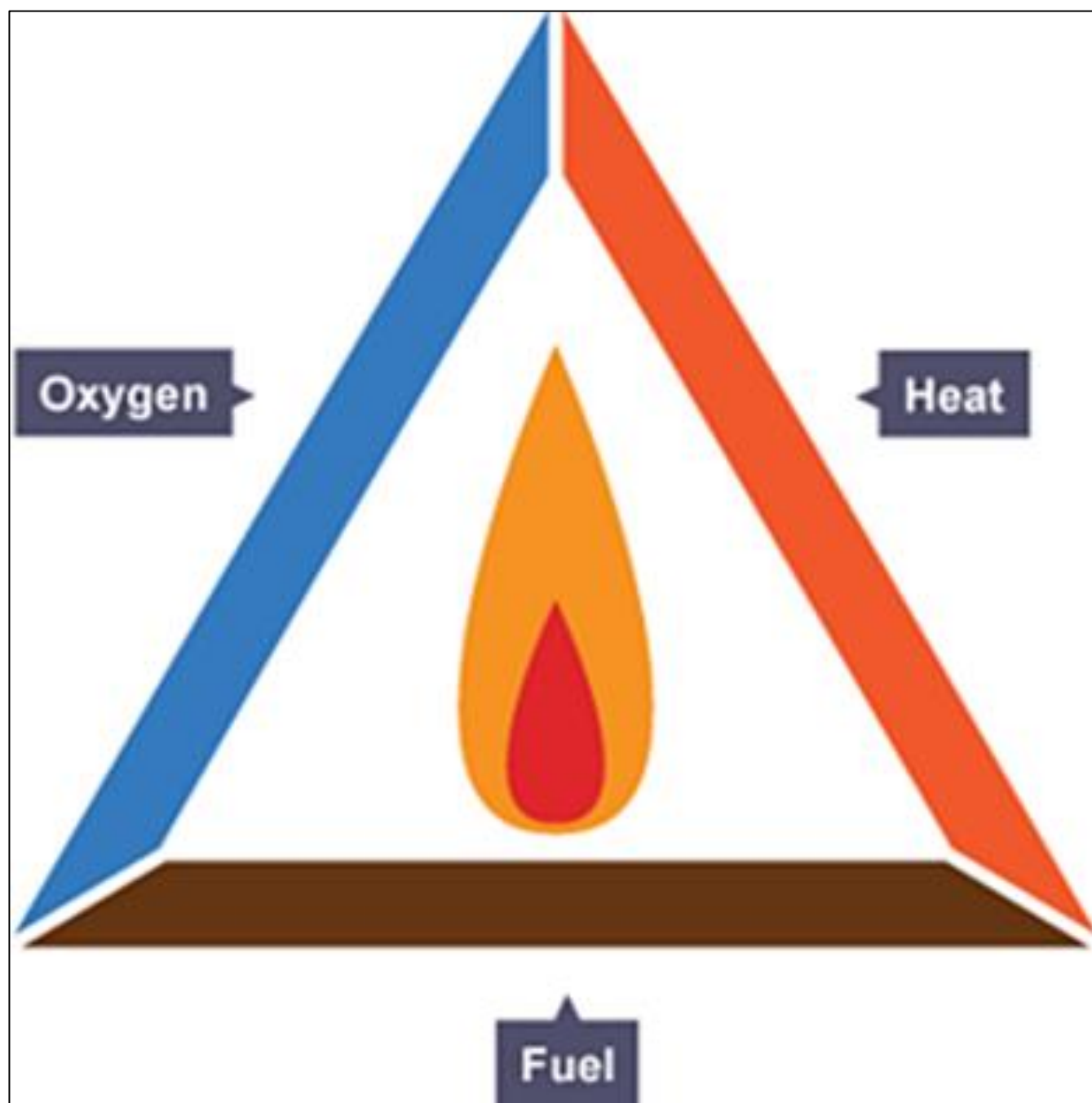
# Key ideas

fuel + oxygen  $\rightarrow$  carbon dioxide + water

methane + oxygen  $\rightarrow$  carbon dioxide + water

We can test for these products where:

- Water turns cobalt chloride paper blue
- Carbon dioxide turns limewater cloudy



## Key ideas

### **Complete Combustion:**

When a fuel combusts in a plentiful supply of Oxygen.

Fuel + Oxygen  $\rightarrow$  Carbon Dioxide + Water

### **Incomplete Combustion:**

When a fuel combusts and there is a lack of Oxygen

Fuel + Oxygen  $\rightarrow$  Carbon Monoxide + Water

Fuel + Oxygen  $\rightarrow$  Carbon + Water

# Key ideas

|                  |   |  |  |  |   |   |
|------------------|---|--|--|--|---|---|
| <b>Pollutant</b> | Nitrogen Oxide  | Sulphur Dioxide  | Particulates / soot                                    | Water Vapour   | Carbon Monoxide   | Carbon Dioxide  |
| <b>Formula</b>   | NO  | SO <sub>2</sub>  | C  | H <sub>2</sub> O   | CO  | CO <sub>2</sub>   |
| <b>Cause</b>     | Nitrogen in the air reacts with oxygen at high temperatures, like in vehicle engines. | Fuels containing Sulphur will react with oxygen to form Sulphur dioxide. | Unburnt particles formed during incomplete combustion. | Hydrogen in fuel reacts with oxygen in complete and incomplete combustion. | Carbon in the fuel reacts with a limited supply of oxygen during incomplete combustion. | Carbon in the fuel reacts with a plentiful supply of oxygen during complete combustion. |
| <b>Issues</b>    | Breathing difficulties  | Acid rain  | Global dimming   | Greenhouse gas   | Toxic   | Greenhouse gas  |



# Key ideas

Some compounds can break down into smaller compounds (or elements) without reacting with another element or compound. This is called 'decomposition'.

Some compounds can break down into smaller compounds or elements only when they are heated. This is called 'thermal decomposition'.

Zinc Carbonate  $\rightarrow$  Zinc Oxide + Carbon Dioxide

# Key ideas



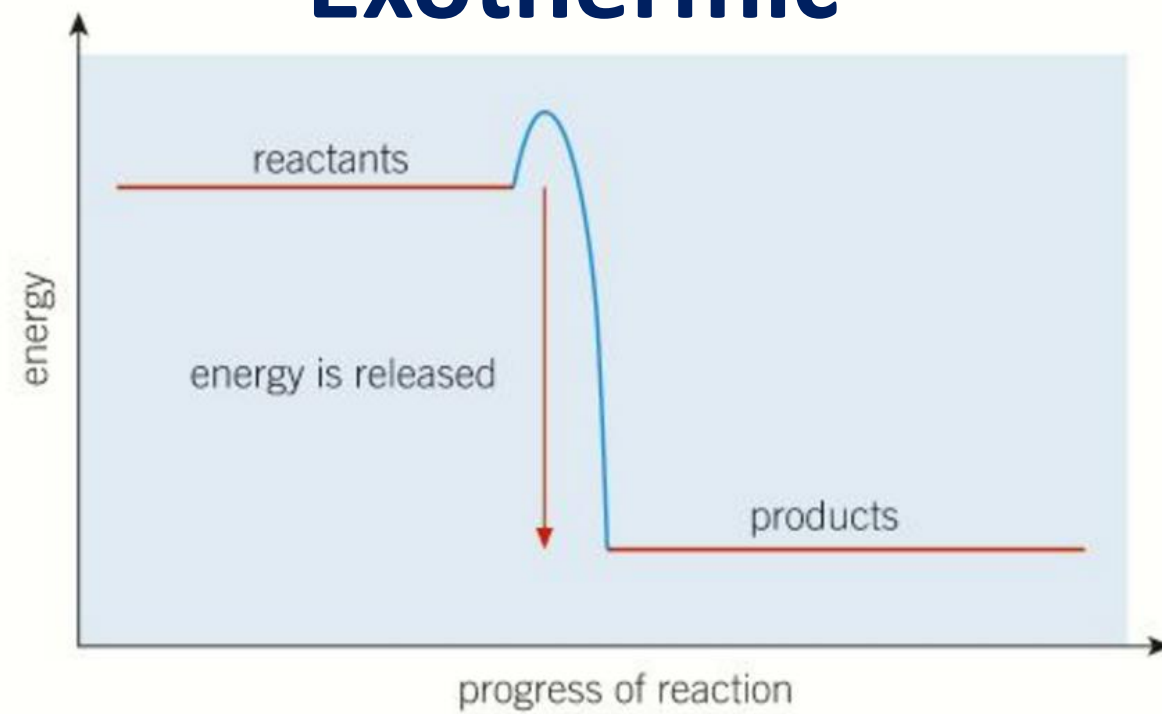
In an exothermic reaction, energy is released into the surroundings. As a result the temperature of the surroundings increases.



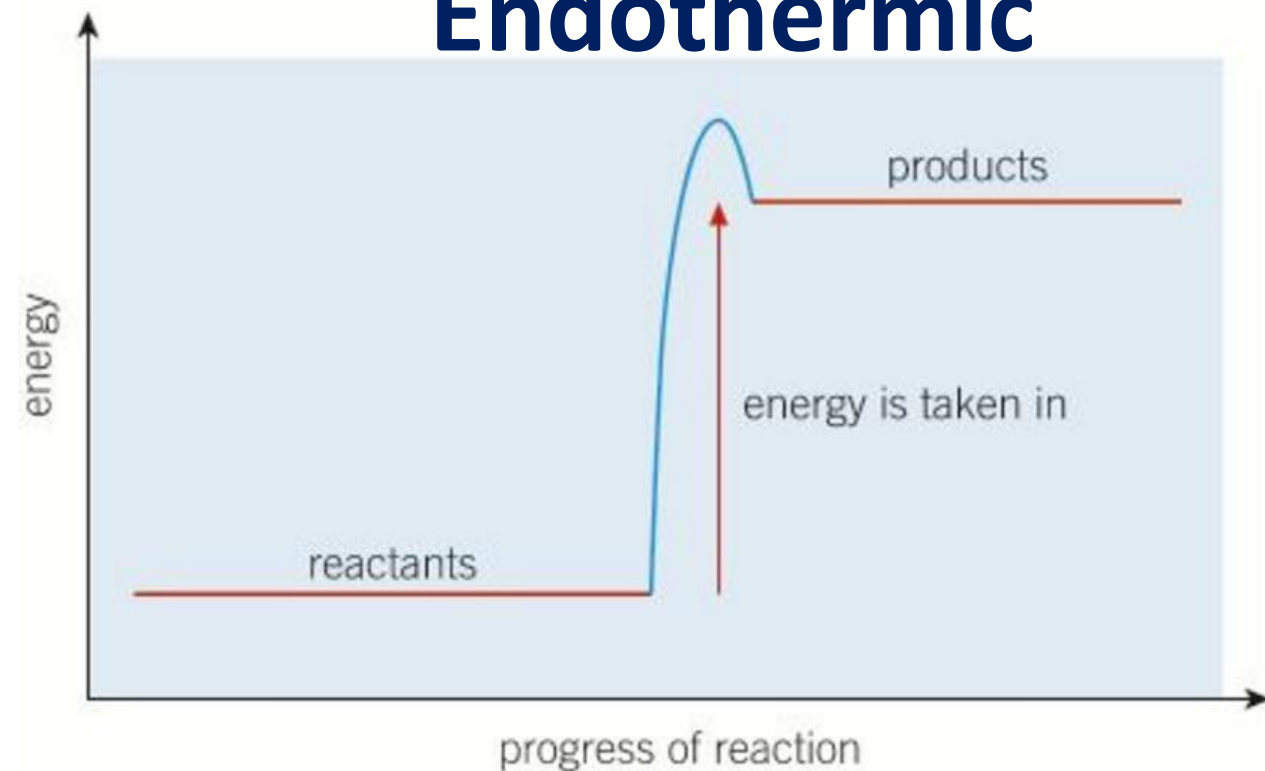
In an endothermic reaction, energy is absorbed from the surroundings. As a result the temperature of the surroundings decreases.

# Key ideas

## Exothermic



## Endothermic



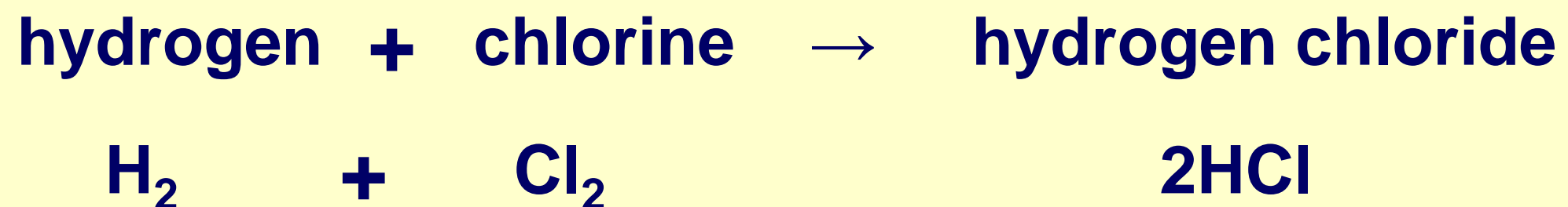
Reaction profiles can be used to show the relative energies **in the bonds of the chemical** reactants and products, the activation energy and the overall energy change of a reaction.



# Key ideas

The amount of energy needed to break or make a bond is called the **bond energy**. The energy changes in a reaction can be calculated from the bond energies of the **reactants** and the **products**.

| Bond  | Bond energy (kJ) |
|-------|------------------|
| H-H   | 432              |
| Cl-Cl | 240              |
| H-Cl  | 428              |



$$\text{H-H} = 432$$

$$\text{Cl-Cl} = 240$$

$$432 + 240 = 672$$

$$\begin{array}{l} \text{H-Cl} = 428 \times 2 \\ = 856 \end{array}$$

$$672 - 856 = -184 \text{ kJ}$$

## Topic : Ecology. 2

In this unit we will be studying:

- Aerobic and Anaerobic respiration
- Fermentation
- Photosynthesis
- How organisms use glucose
- How to test for starch

Use the QR code  
to find more  
information on  
BBC Bitesize

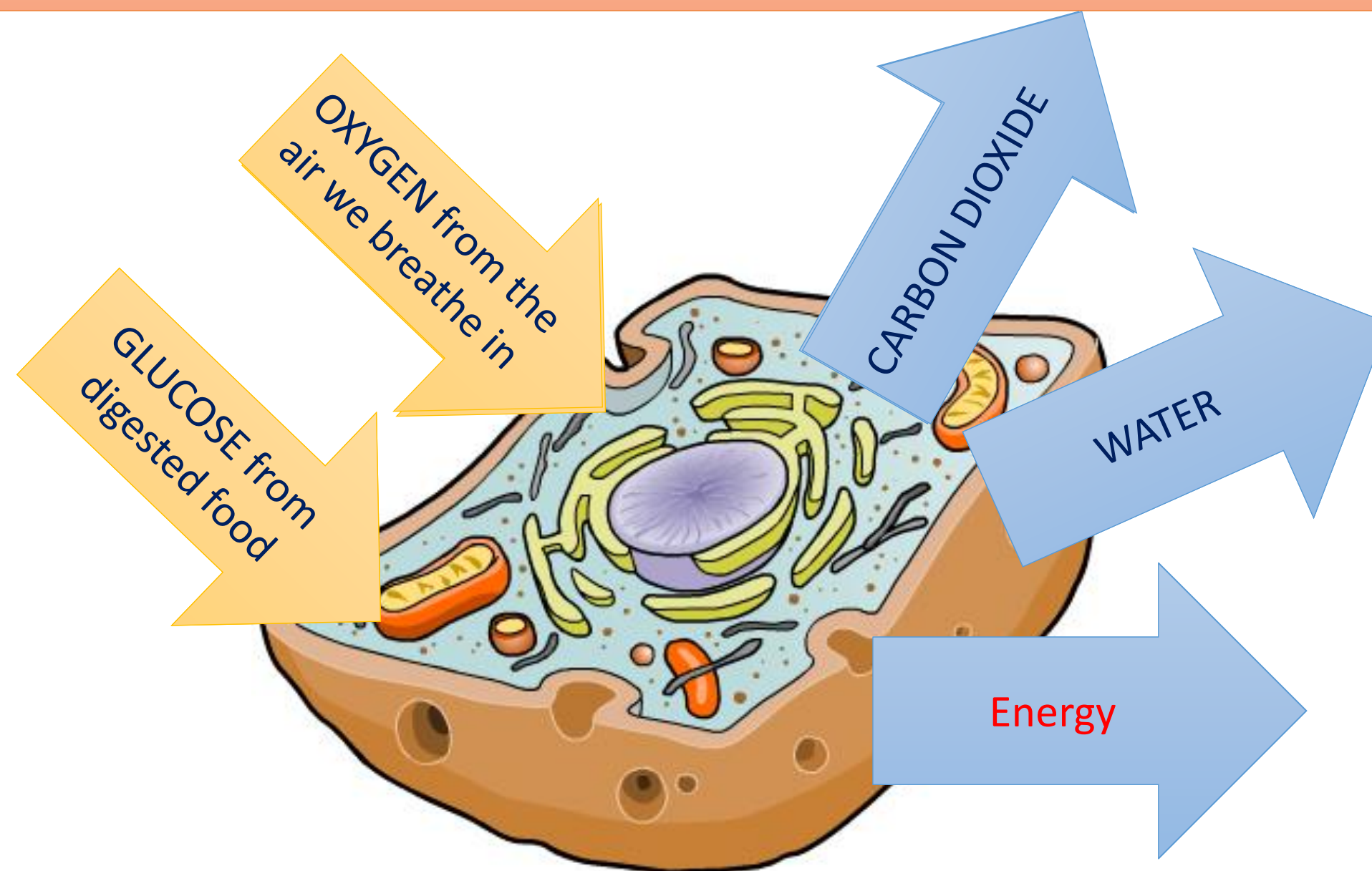


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## Key Ideas: Aerobic respiration

Aerobic respiration is a chemical reaction that takes place in all living cells all of the time.





## Key Ideas: Aerobic respiration

To transfer energy stored in food, glucose reacts with oxygen in a chemical reaction called **aerobic respiration**.

This reaction transfers energy to your cells. The waste products are carbon dioxide and water.

glucose + oxygen  $\rightarrow$  carbon dioxide + water (+energy)

## Key Ideas: Aerobic respiration

During exercise 2 main changes take place...

- the heart rate increases
- the rate and depth of breathing increases



## Key Ideas: Anaerobic respiration

Anaerobic respiration is a type of respiration that releases energy from glucose without using oxygen.

Your body switches to respiring anaerobically when cells are **not getting enough oxygen** to respire aerobically  
e.g. during strenuous exercise.



## Key Ideas: Anaerobic respiration

**Anaerobic respiration is a type of respiration that releases energy from glucose without using oxygen.**



When you have finished exercising you keep on breathing heavily. This is because extra oxygen is needed to break down the lactic acid into carbon dioxide and water. This extra oxygen needed for this process is called the **oxygen debt**.

## Key Ideas: Fermentation

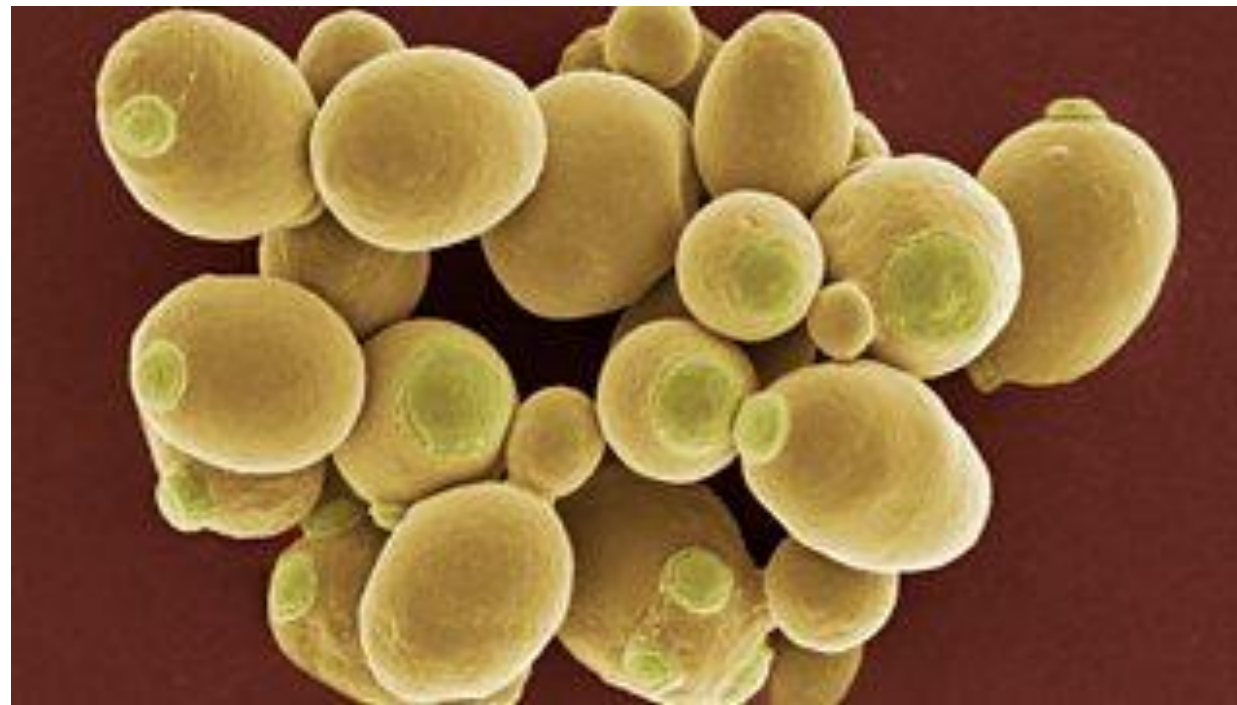
Other organisms than humans also anaerobically respire, such as roots of plants in waterlogged soils.

Yeast can respire aerobically, but the anaerobic respiration that takes place in yeast cells is called fermentation. It is used in the food and drinks industry.



## Key Ideas: Fermentation

When anaerobic respiration happens in **yeast** a different reaction happens;  
**glucose  $\rightarrow$  ethanol + carbon dioxide**





## Key Ideas: Photosynthesis

### What is photosynthesis?

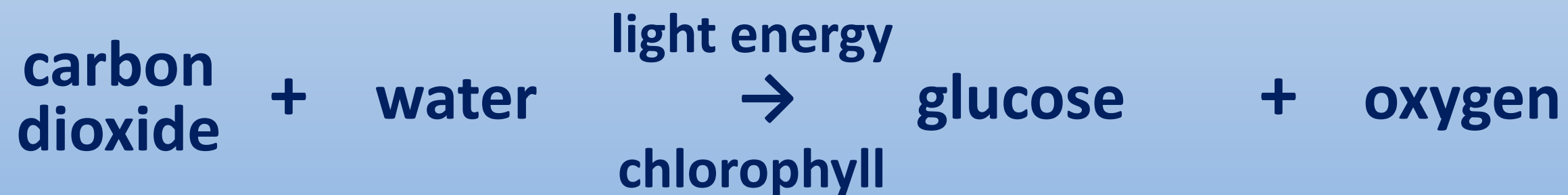
The word **photosynthesis** comes from the Greek language:

- 'photo' means 'light'
- 'synthesis' means 'putting together'

Photosynthesis means '**putting together with light**'.

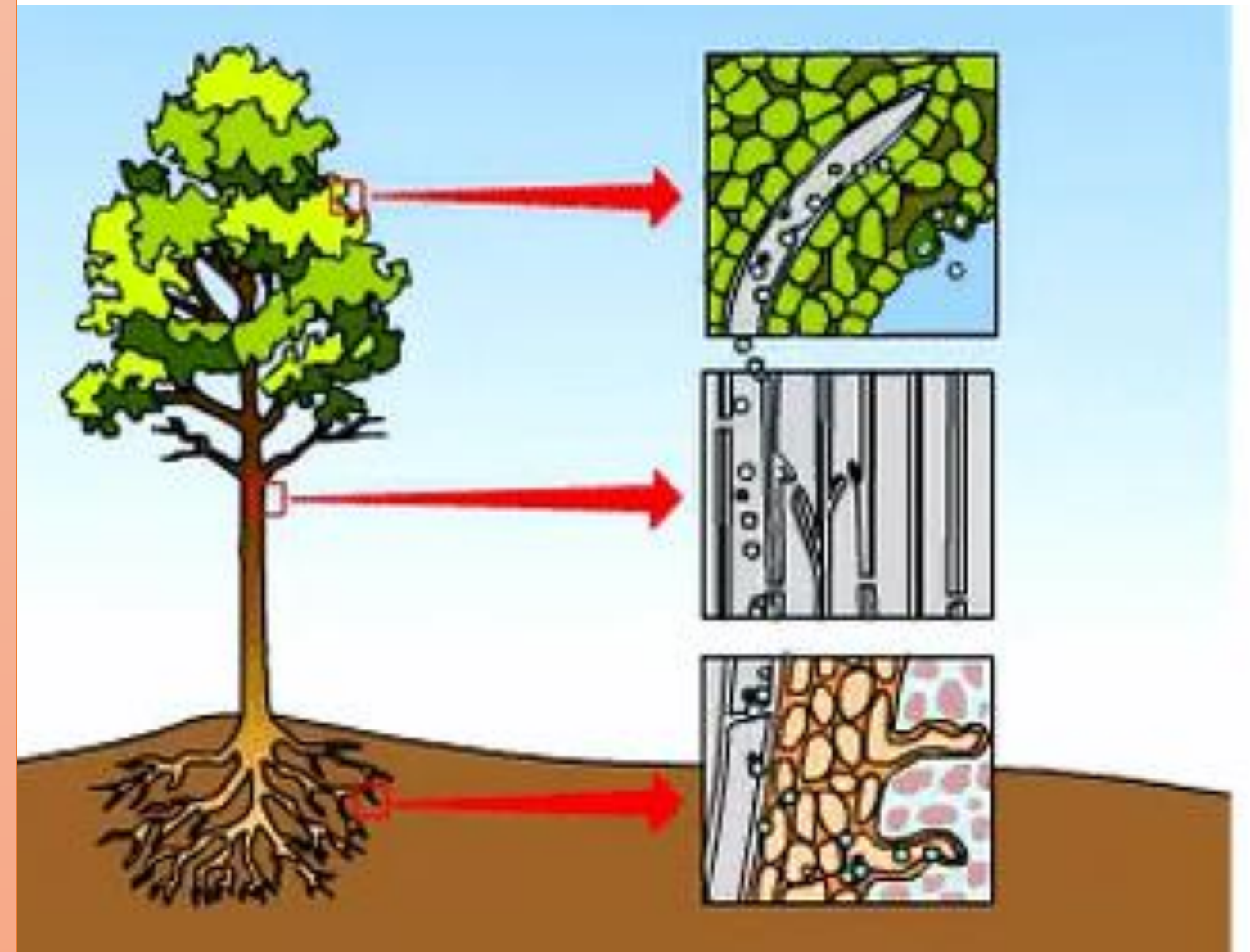
## Key Ideas: Photosynthesis

- Plants make food through the process of photosynthesis.
- It is a chemical reaction in which plants take in carbon dioxide and water and use a chemical reaction to change them into glucose and oxygen.
- Oxygen is a waste product and is released back into the atmosphere.

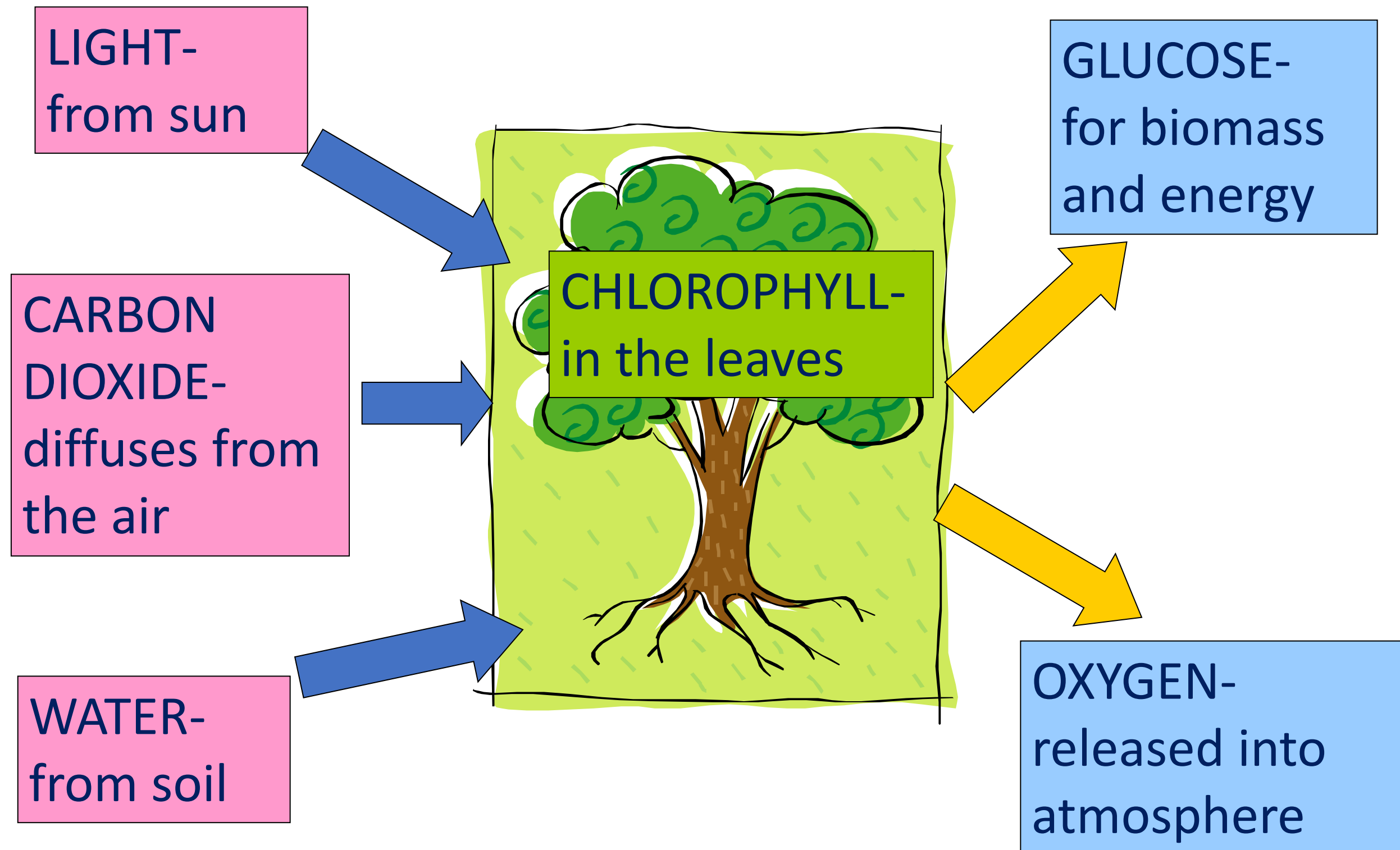


## Key Ideas: Photosynthesis

- Plants have leaves, stem and roots.
- Chloroplasts in the leaf cells contain chlorophyll, which absorbs sunlight
- Water from the soil diffuses into the root hair cell.
- Water is transported around the plant in xylem tubes.
- Leaves contain tiny holes that allow carbon dioxide to diffuse in and oxygen to diffuse out.



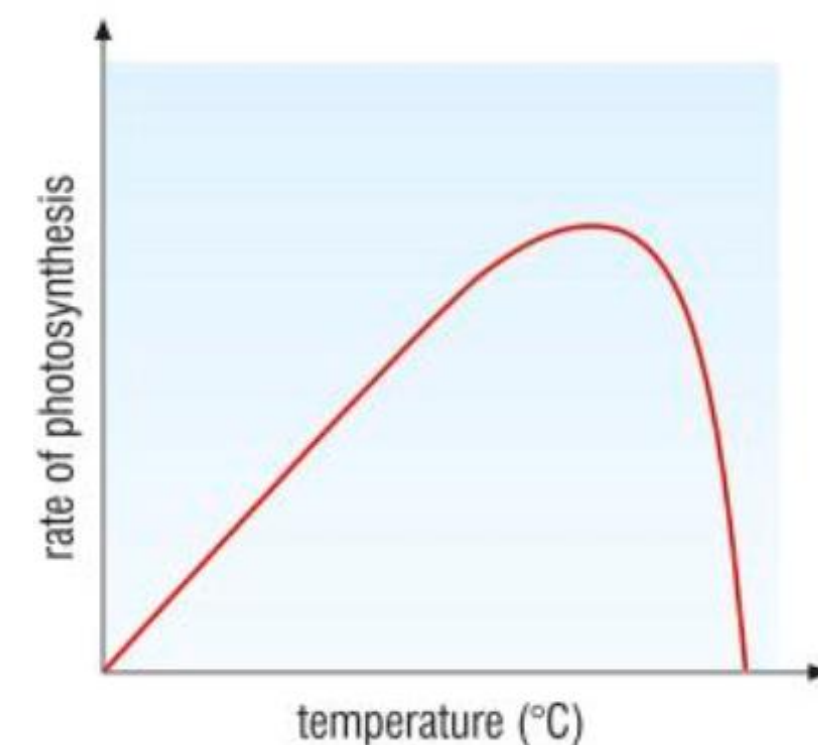
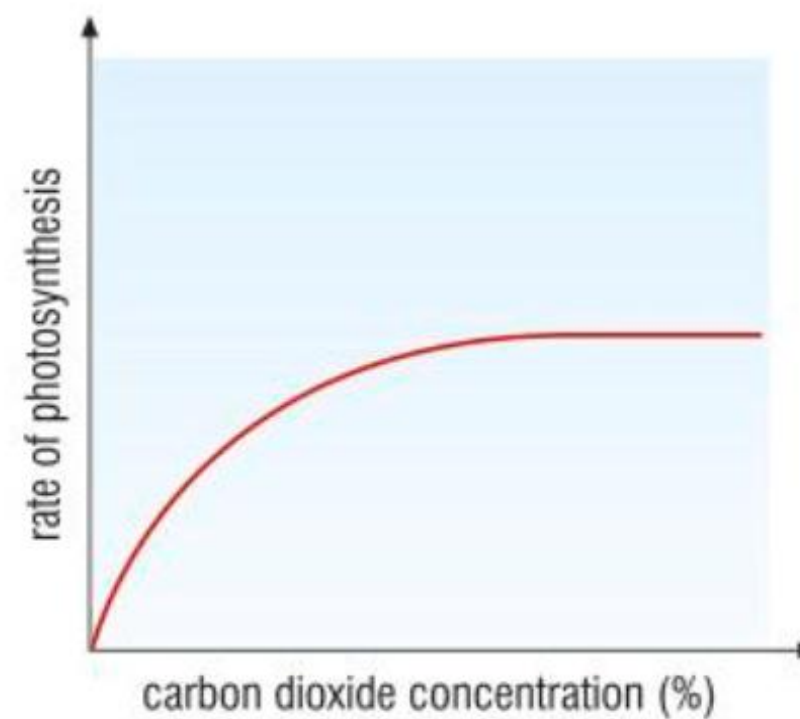
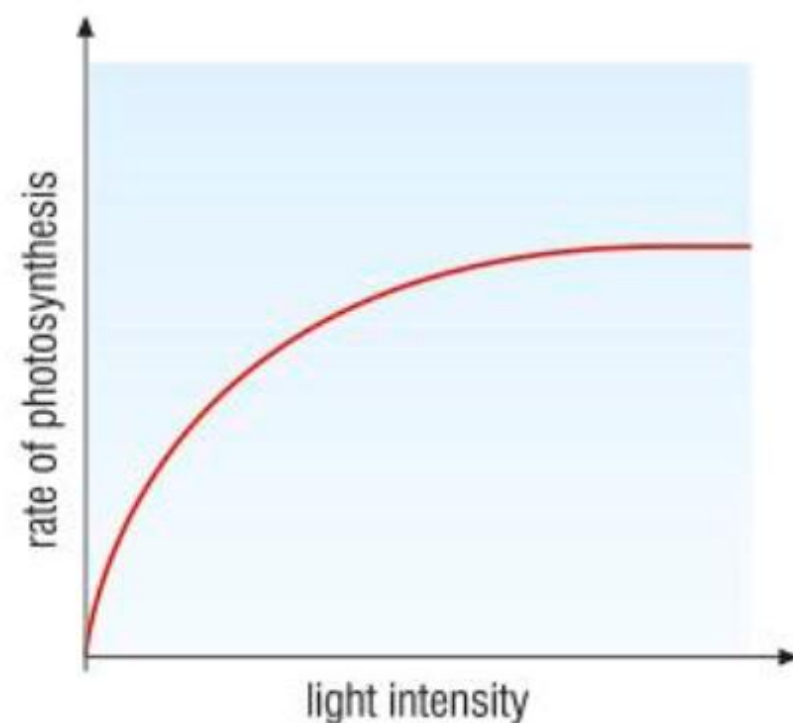
## Key Ideas: Photosynthesis





## Key Ideas: Photosynthesis

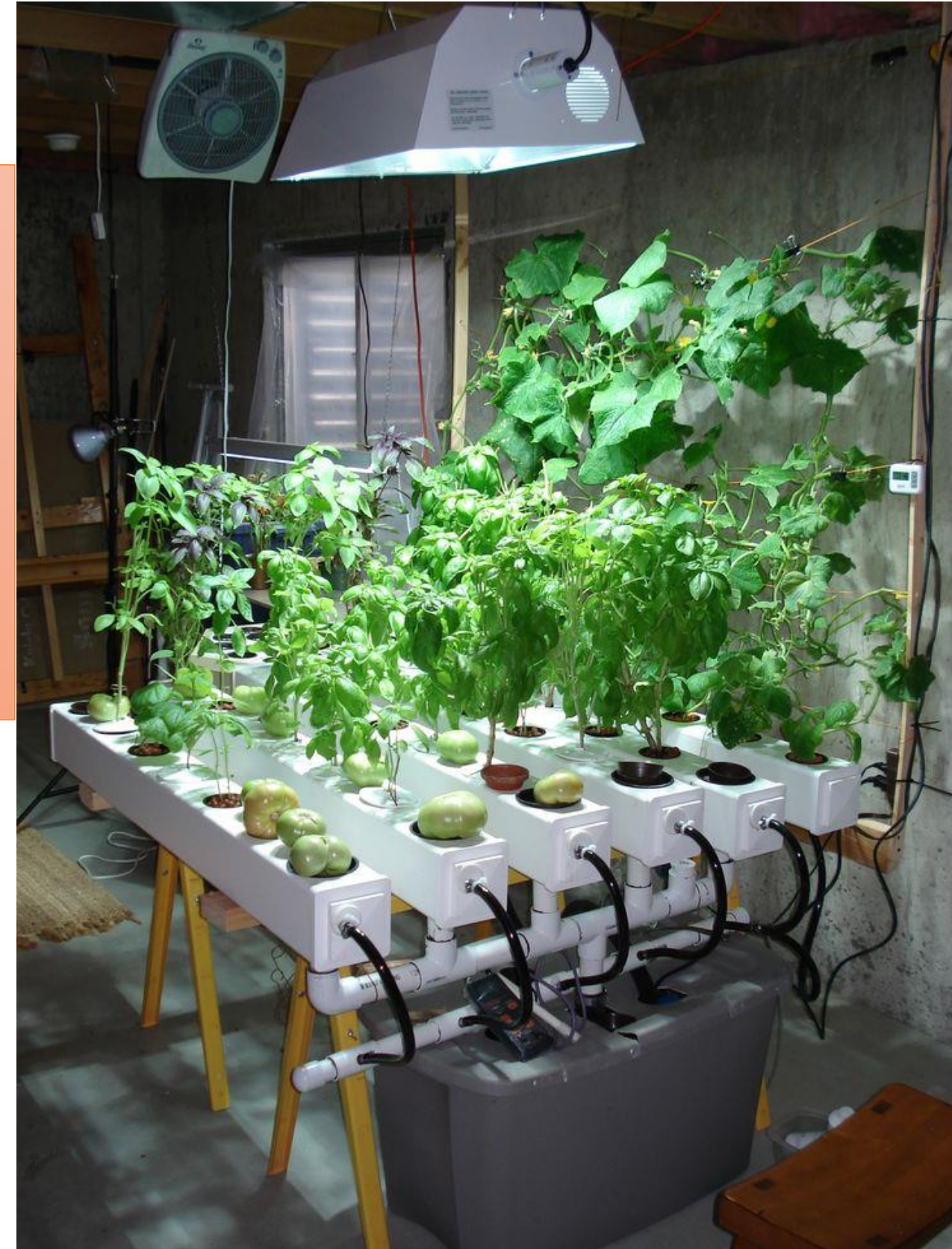
**Light intensity, carbon dioxide and temperature** affect the rate of photosynthesis. If any of these are in short supply the rate of photosynthesis will be slower than it should be.



## Key Ideas: Photosynthesis

**To increase the rate of photosynthesis the following conditions can be increased:**

- Light intensity
- Temperature (to an extent)
- Carbon dioxide levels



## Key Ideas: Using glucose

Plants and algae use energy from light, together with carbon dioxide and water to make glucose, through photosynthesis.

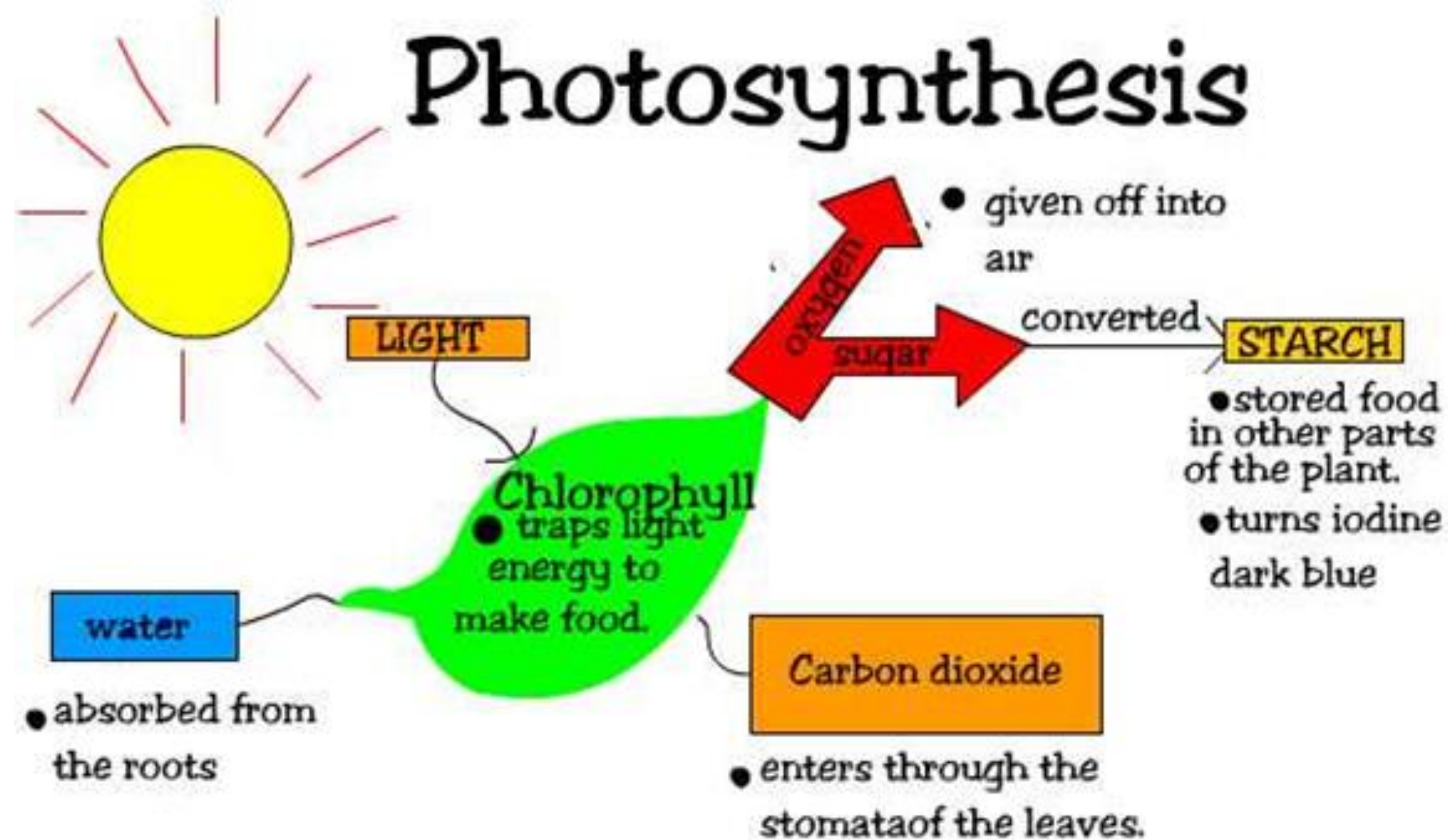
They either use the glucose:

- In respiration
- To build new tissue
- To store it for later use



## Key Ideas: Using glucose

During photosynthesis, a plant produces glucose.  
It stores the glucose as starch in the leaf.





## Topic 4: Forces

In this unit we will be studying:

Balanced and unbalanced forces

Resultant forces

Work done

Extending objects

Falling objects

Streamlining

Friction

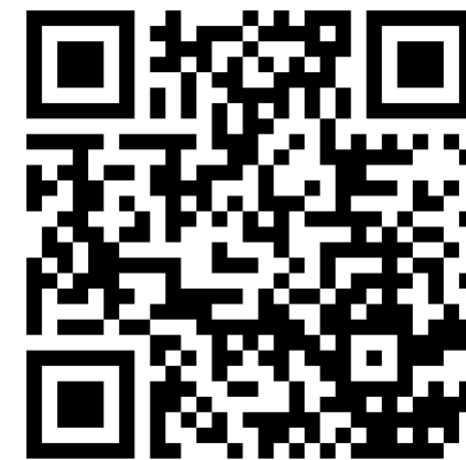
Levers and Pulleys

Moments

Pressure (including gas and liquid pressure)

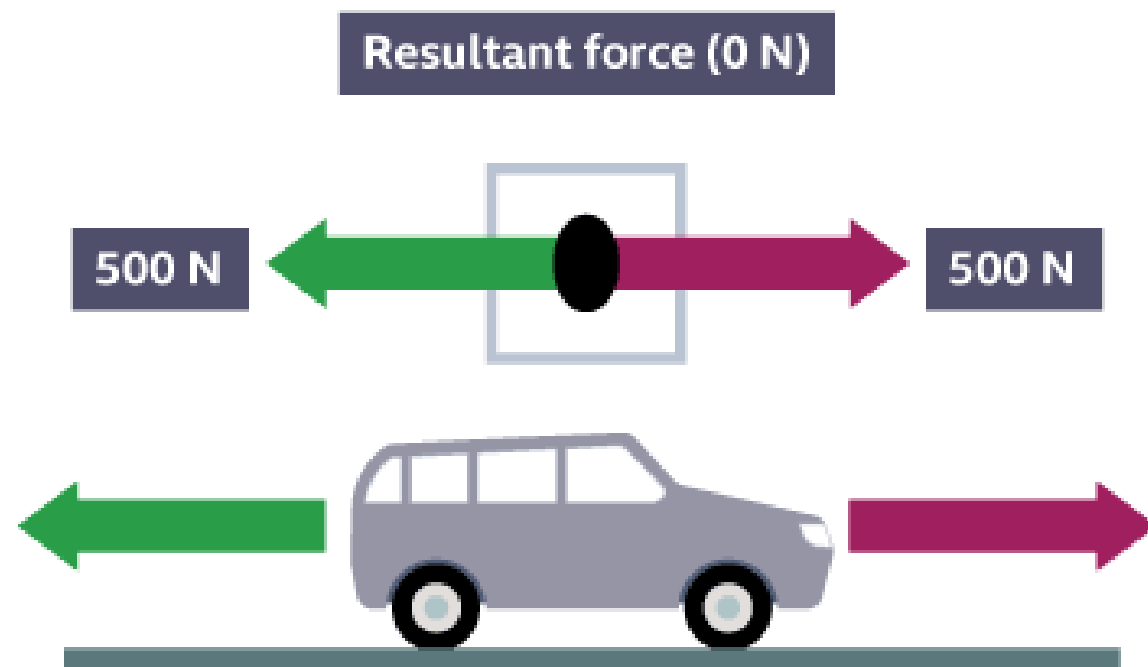
Hydraulics

Use the QR code to find more information on BBC Bitesize.



# Key ideas

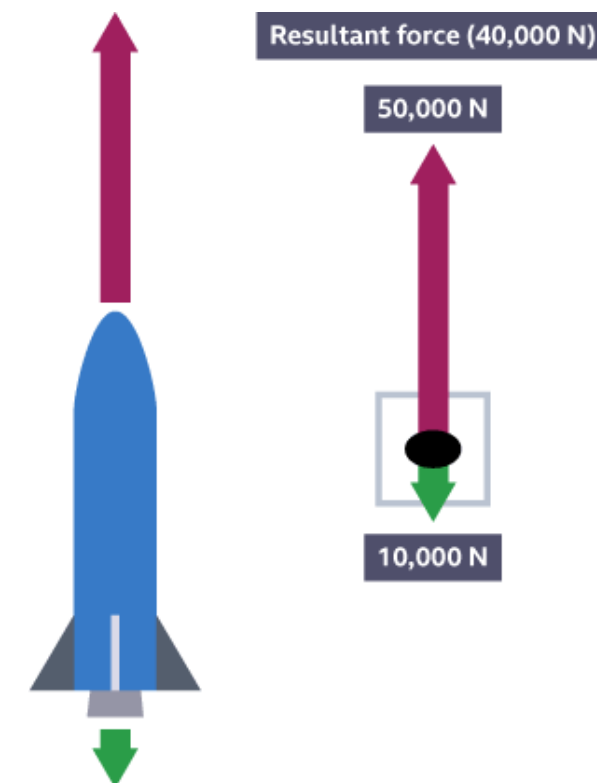
## Balanced Forces



The thrust from the engine (500N) is the same as the air resistance (500N) of the car as it moves along the road.

The thrust and the air resistance act in opposite directions and are *balanced*.

## Unbalanced Forces



The thrust from the engine (50,000N) is bigger than the weight (10,000N) of the rocket as it takes off.

The thrust and the air resistance act in opposite directions and are *unbalanced*.

# Key ideas

## Resultant Forces



The forwards thrust force (1000N) acts in the opposite direction to the backwards drag force (300N), so we subtract 300N from 1000N to find the resultant force.

$$1000\text{N} - 300\text{N} = 700\text{N acting forwards.}$$



The backwards drag force (900N) acts in the opposite direction to the forwards thrust force (400N), so we subtract 400N from 900N to find the resultant force.

$$900\text{N} - 400\text{N} = 500\text{N acting backwards.}$$

# Key ideas

## Resultant Forces



When the forces are equal and opposite, they balance, and there is no resultant force.

$$1000\text{N} - 1000\text{N} = 0\text{N}$$



# Key ideas

## Work Done

When a force moves an object, we say the force 'does work' on the object.

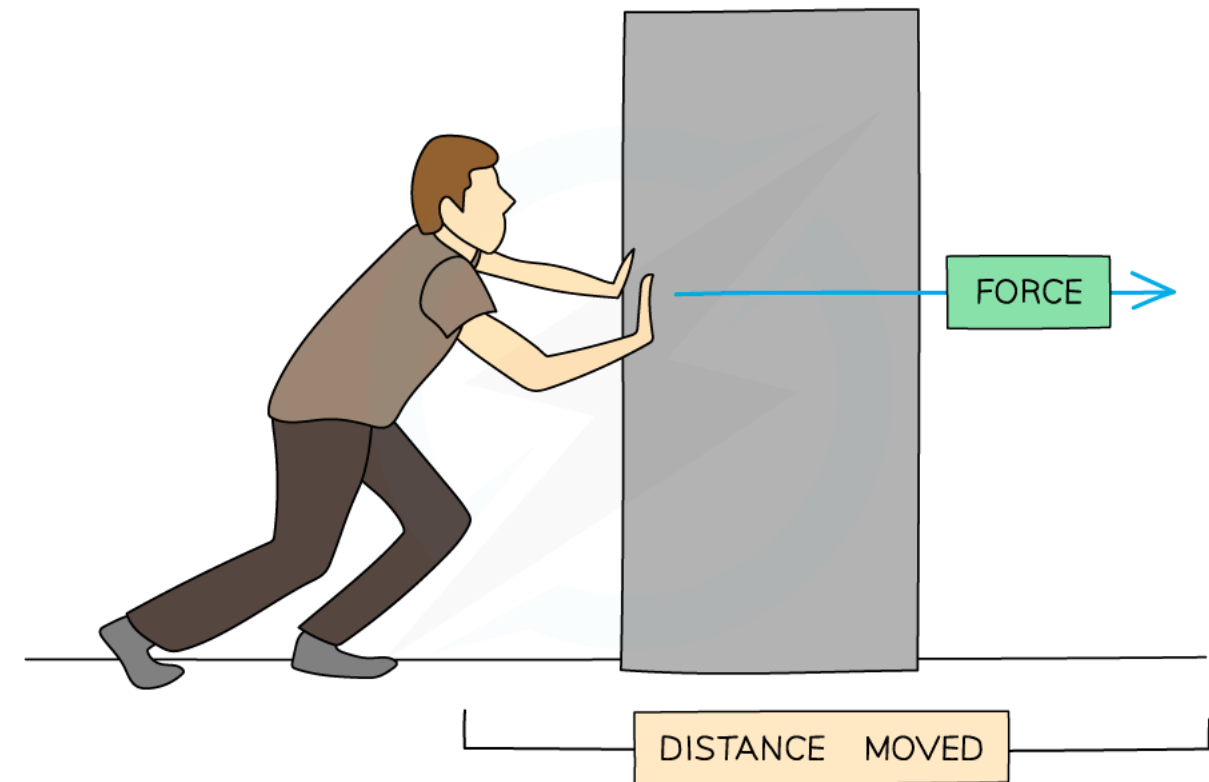
We calculate how much work is done using this equation:

$$W = Fs$$

$W$  is the work done – measured in joules, J

$F$  is the force doing the work – measured in newtons, N

$s$  is the distance the object moved in the direction of the force – measured in metres, m



The man does work on the box to move it.

The amount of work is equal to the size of the force multiplied by the distance the box moves in the direction of the force.

# Key ideas

## Hooke's Law

When a force acts on an object, it may deform, or stretch.

The size of the extension depends on the size of the force *and* the spring constant of the object.

(Sometimes the spring constant is called the stiffness constant.)

This equation is one we use:

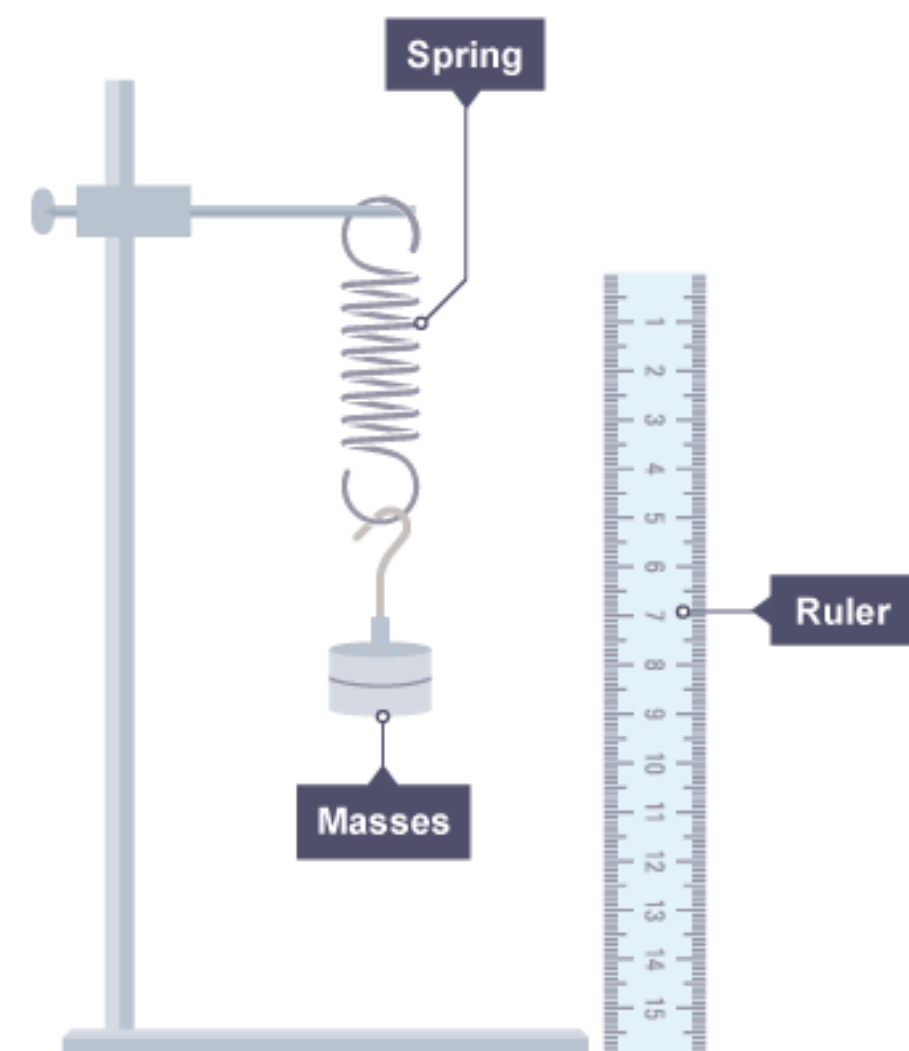
$$F = ke$$

F is the applied force – measured in newtons, N

k is the spring constant – measured in N/m (or sometimes N/cm)

e is the extension of the object – measured in metres, m (or sometimes cm)

Watch Brian Cox explaining Hooke's Law.

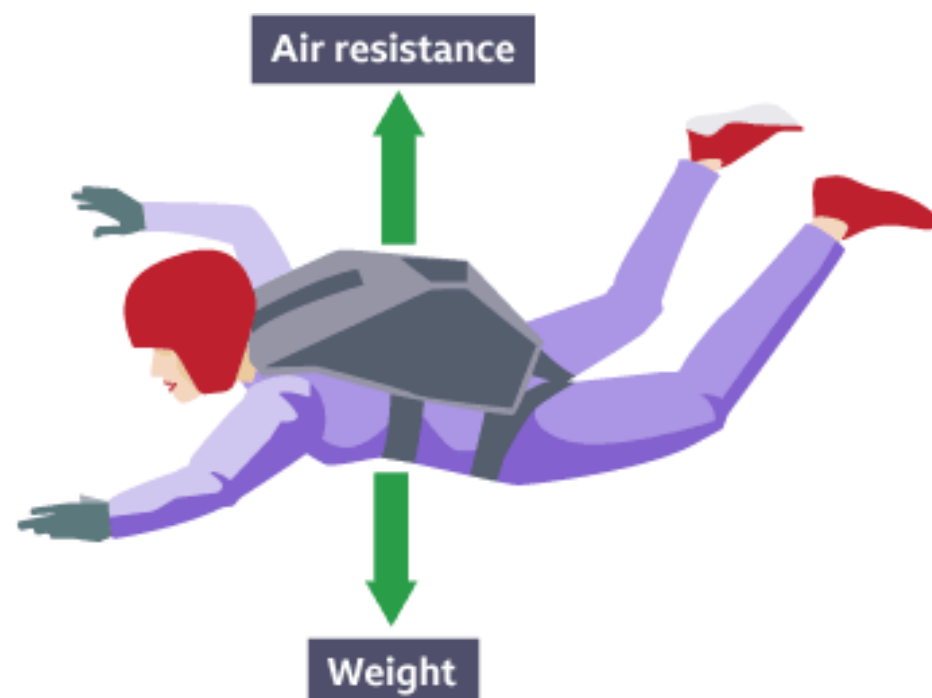


## Key ideas

### Falling objects – Terminal Velocity

When an object falls, it does so because gravity acts on the mass of the object, causing a downwards force that we call weight.

As the object is falling, it must push the air out of the way. This causes an upwards force to act that we call air resistance.



When the object first starts to fall, it isn't moving very quickly.

There is a downwards resultant force, and the object accelerates towards the ground.

As it speeds up, the size of the air resistance force increases until it is equal in size to the object's weight.

When this happens, there is no longer a resultant force, and this means that the object doesn't accelerate any more.

It is now travelling at its maximum speed. We call this speed Terminal Velocity.

Watch this video on skydiving.



Follow this link  
for more information



# Key ideas

## Reducing Drag – Streamlining

Air resistance is a type of friction. It is sometimes called drag.

Designers try to reduce drag by making vehicles streamlined so the air flows easily over them.



Nature has its own streamlining.

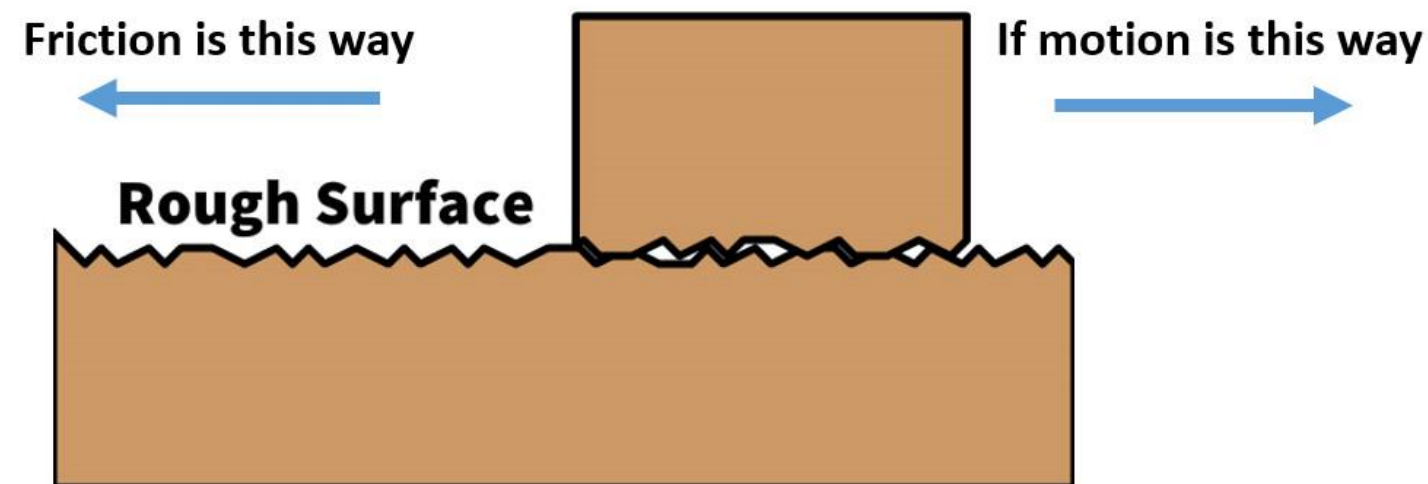




## Key ideas

### Friction

Friction is a contact force that acts to try and stop an object moving. It always acts in the opposite direction to the way something is moving.



Friction can be helpful – giving us grip on the road when we run or when we drive a car.



Friction can be a problem – slowing down machines and making them need lubricating.



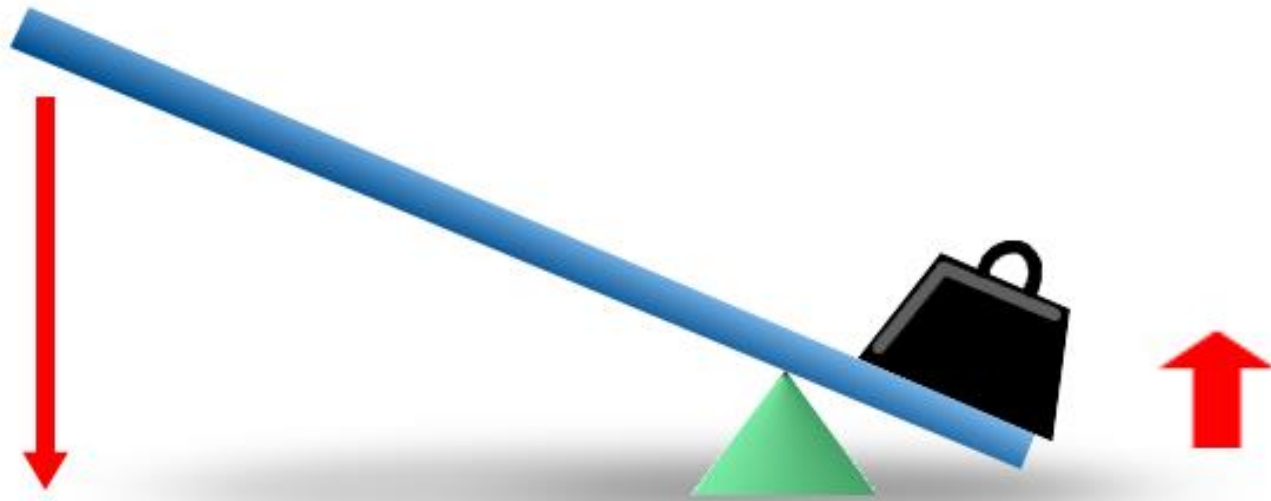
Friction usually makes things heat up. This can be a big problem as it can make machines break.

# Key ideas

## Levers

Levers maximize force by minimizing distance.

The long red arrow shows a small force moving a long way.



The short red arrow shows how this produces a much larger force that moves a short distance.

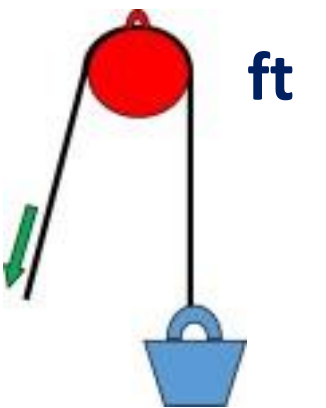
This is an example of *mechanical advantage*.

A Lever is a simple type of machine.

## Pulleys

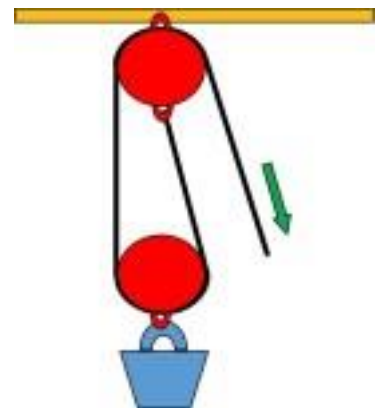
Pulleys are another example of a simple machine.

It's easier to pull down on a rope than pulling up, so this pulley helps you a bucket.



Pulleys can get quite complicated but remember that a small force moving a long way can produce a large force that moves a short way.

In this diagram, the green arrow is a small force that moves a long way, producing a large force that lifts the bucket.



Watch this video to learn more.

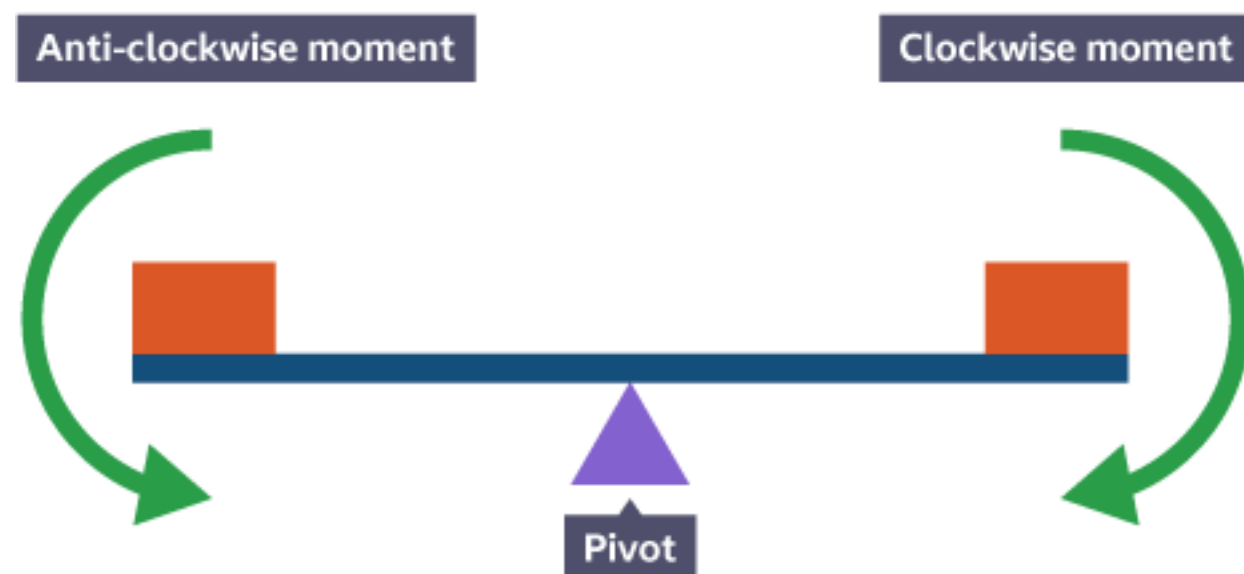


# Key ideas

## Moments

A moment is the *turning effect* of a force.

Moments can be clockwise or anticlockwise.



The size of a moment can be found using this equation:

$$M = Fs$$

$M$  is the moment, measured in Nm (sometimes Ncm)

$F$  is the force, measured in N

$s$  is the *perpendicular* distance between the force and the pivot, measured in m (sometimes cm)

For something like this see-saw to balance, the clockwise moment must be equal to the anti-clockwise moment.



Can you explain how it is balanced? Think about the sizes of the forces *and* their distance to the pivot.

# Key ideas

## Pressure

Pressure is a measure of how concentrated a force is.

It can be calculated using this equation:

$$P = \frac{F}{A}$$

P is pressure in N/m<sup>2</sup>

F is force in N

A is area in m<sup>2</sup>

Sometimes we call 1 N/m<sup>2</sup> 1 Pa (one pascal)

These snowshoes have a large area. This gives them a low pressure on the snow, so they don't sink in.



High heels have a very small area. This gives them a very high pressure. They would sink easily in snow.

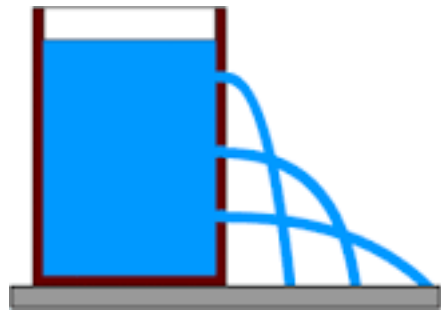




## Key ideas

### Liquid Pressure

Liquid pressure is a result of how much liquid is above a certain point. The more liquid above, the greater the pressure.

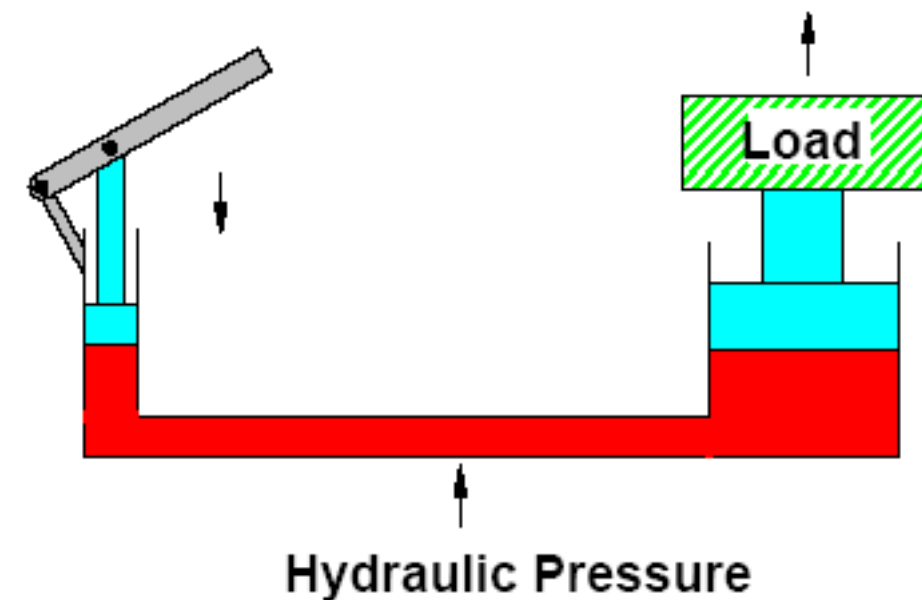


The water squirts out most at the bottom, because the water pressure is greatest there. This is because there is more water above the hole.

Hydraulic machines use liquid pressure to transfer forces to other places and to increase the size of a force.

In the hydraulic jack diagram below, the lever moves a small piston a long distance.

This increases the pressure in the hydraulic liquid (remember the pressure equation?).



This hydraulic pressure now applies a large force on the large piston, lifting the load a short distance.

# Key ideas

## Atmospheric Pressure

Atmospheric pressure is a result of how much atmosphere is above a certain point. The more atmosphere above, the greater the pressure.

Atmospheric pressure decreases with altitude. The higher up in the air you go, the lower the pressure.

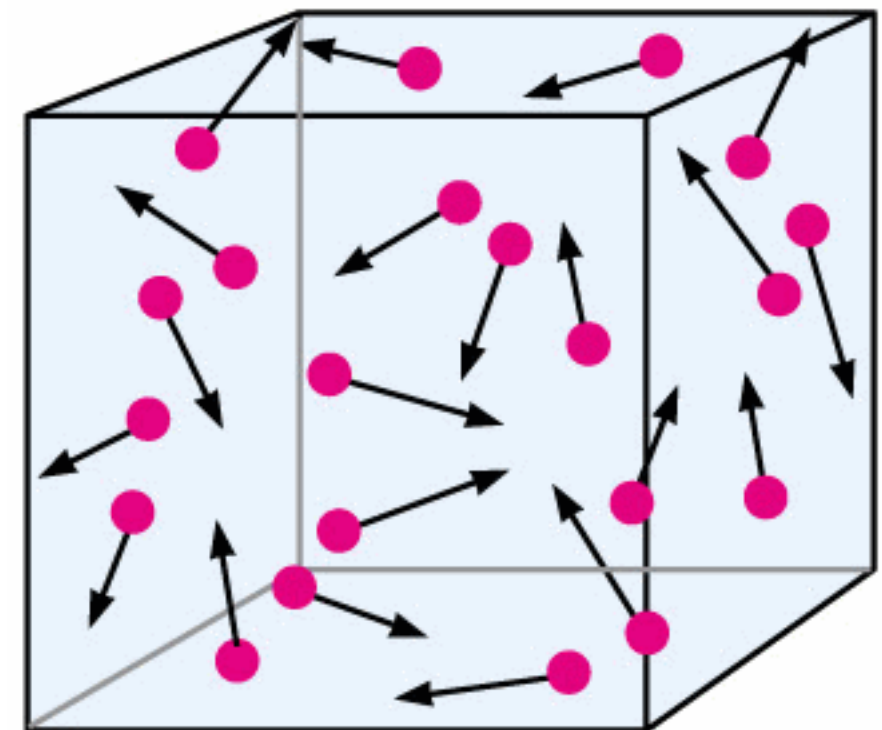


## Gas pressure

Gases particles move rapidly and randomly.

As they collide with the container they are in, they exert a force outwards as they rebound. This force, spread across the whole container, causes pressure.

The harder and more frequently the particles collide with the container, the higher the pressure.



## More information you need to know about POP ART:

The concept of pop art began in the 1950s and the basic thing which makes this type of art different is the use of bold images that are painted in bright colors. It is a type of art that is described as a depiction of everyday items in bold colors. The pop artists have created images related to different fields like the packaging of ketchup bottles, product labels, comic strips or photos of celebrities.

### **Here are some facts about pop arts that every kid should know:**

- Popular art or pop art is a movement that is started in the 1950s and 1960s which started in America and Europe.
- This movement was basically a reaction against the traditional art ways. The inclusion of bright colors like red, yellow and blue is an example of the negation.
- The pop art has some common aspects with Dada movement. The main common point is the usage of everyday objects for the creation of art pieces.
- The first pop art piece is created by a person names Eduardo Paolozzi in 1952 which was known as I was a rich man's plaything.
- [Andy Warhol](#) is the most famous pop artist. The work of Andy Warhol consists of the prints that are created by using similar images from everyday life such as banknotes or soup tins.
- The next well-known artist of pop art is [Roy Lichtenstein](#). The unique feature of his paintings is that they look like a comic strip.
- Some of the pop art pieces are the ones that were [sold at the higher prices](#) in history. For example, a pop art painting made by Jasper Johns in 2010 was sold at the rate of £70 million.
- If you want to see the best art pieces of pop art, the [London's Tate Gallery](#) is the best place.
- Some people believe that pop art is related to Dadaism which is why the images are created to make fun of the traditional art.
- According to the pop artists, the traditional art was basically for the elites which are why they must create things for the masses.
- There is an art type which is quite like the pop art. The name of this art is Op art that uses optical illusions to trick the eyes of a viewer.

## More information you need to know about POP ART:

### History of pop art:

After the World War 2, people used to spend a lot of money which is why the mass-produced items became abundant. Moreover, the television replaced radio as the media outlet. These changes are the case behind the pop movement as people started to put more attention on the store-bought products and the celebrities that were painted. However, the term "pop" was given by a museum supervisor who was a British named Lawrence Alloway.

He used the term "pop" to represent the new culture of the art that had a modern feel to it. The popularity of this modern art continued to spread all over the world in the 1960s.

## POP ART DICTIONARY

**Here's are some terms and questions that you may encounter as you discover more about pop art.**

### Pop art

An artistic movement notable for its tendency to throw away the usual notions of fine art and to focus on or parody mass media and popular culture. Pop art can be in any sort of visual medium, including painting, sculpture, drawing, film, or art installation.

### Pop artist

An artist whose work is inspired by, or is a parody or commentary on, popular culture, and whose work tends to fall into the style and technique of the pop art movement. Examples include Andy Warhol, Roy Lichtenstein, and Richard Hamilton, among others.

### Campbell's Soup Can

Many works by Andy Warhol consisted of a still life, simple image of a can of Campbell's soup. His most famous of these works is the Campbell's Soup I, which consisted of a can of tomato soup, specifically.



## POP ART DICTIONARY

Here's are some terms and questions that you may encounter as you discover more about pop art.

### Pop art artwork

Art in any medium, sculpture, painting, installation, etc, which falls within the realm of the pop art movement. Usually, this kind of artwork focuses on the very common experience and popular imagery of the everyday person, rather than having a focus on creating fine art in the classic style. Often, this kind of art remixes or satirizes popular culture or everyday objects that most people in the culture may encounter. For example, Andy Warhol's Campbell's Soup Cans were depictions of very mundane objects that most people viewing his work would have already been familiar with.

### Popular culture

The general common ideas, customs, values, and experience of a given group of people, usually the wider majority culture. This is contrasted with sub-cultures which are small subsets of the wider, popular culture, and may be very different in its values and shared ideas. The term “popular culture” especially refers to the common imagery and symbolism that everyday people understand, such as those from popular movies, books, television shows, advertising, and news media. This stands in contrast to more elitist ideas of culture, such as those understood by an intellectual minority.

### Collages

A kind of artistic technique in the visual arts which involves putting together many different unrelated pieces to form a larger whole. Often, the collage will be made from pieces of other already-existing works—for example, from photographs in magazines, or from images and shapes created by other artists—to create a new work that is made from all of these pre-existing elements.

### Silkscreen

Also known as screen printing, this is an artistic technique that involves pushing ink through a sieve-like mesh (a screen) and onto the final medium, such as cloth. This works as a sort of stenciling technique, since part of the mesh will be blocked off and the ink can only leak through the open holes, thus leaving a particular image on the medium. It was a technique that was popularized by Andy Warhol for use in the arts. Over time, it became a common technique used to print imagery on T-shirts and is still used to this day.



# Art

## POP ART MINI-PROJECT

### Research Activity

- Research 1 of the following artists.
- Find 4-6 images of your chosen artist's work, print out or present on a PowerPoint or Word document.
- Find out information on this artist.
- Describe their work – talk about the formal elements of their work



*Andy Warhol*



*Robert Indiana*



*Ron Magsen*

The formal element of Shape

[\(15\) Elements of Art: Shape | KQED Arts - YouTube](#)

The formal element of Colour

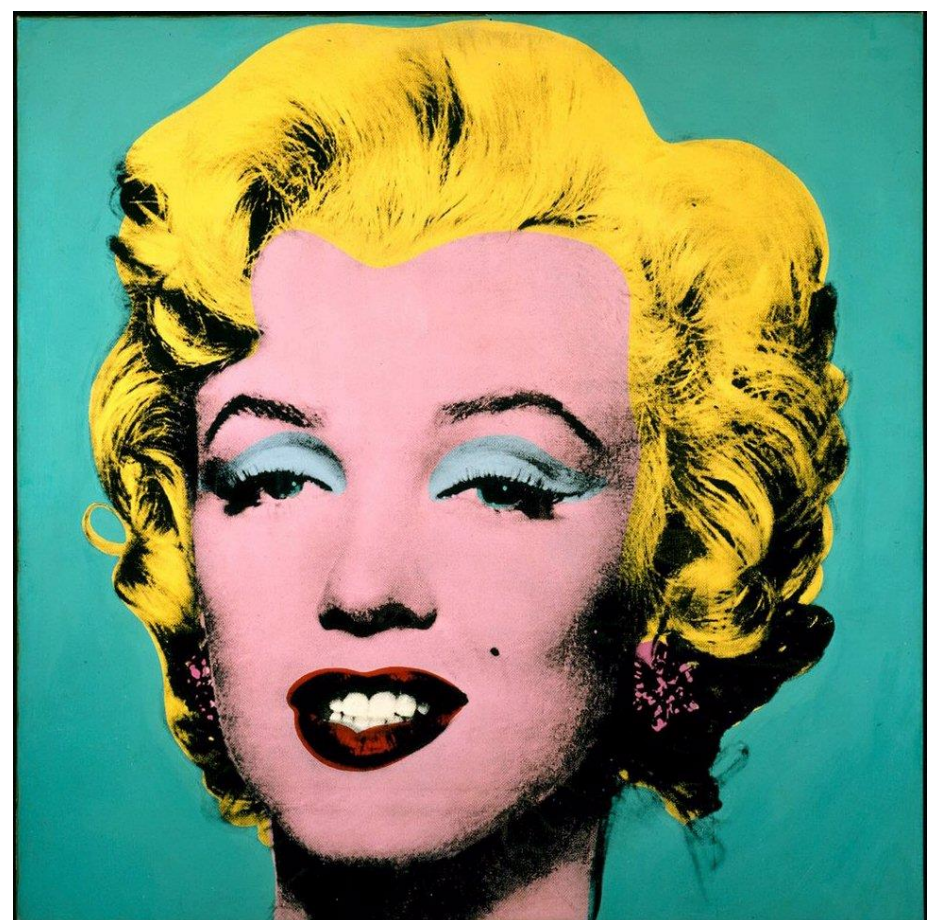
[\(17\) Elements of Art: Color | KQED Arts - YouTube](#)

**Andy Warhol in 8 Minutes: Pop Art Legend or Fashion Guru?**

[\(15\) Andy Warhol in 8 Minutes: Pop Art Legend or Fashion Guru? - YouTube](#)

### Task:

Create a bright and vivid piece of an everyday object or celebrity. Only use 3 or 4 bright colours to make your work look like Andy Warhols.

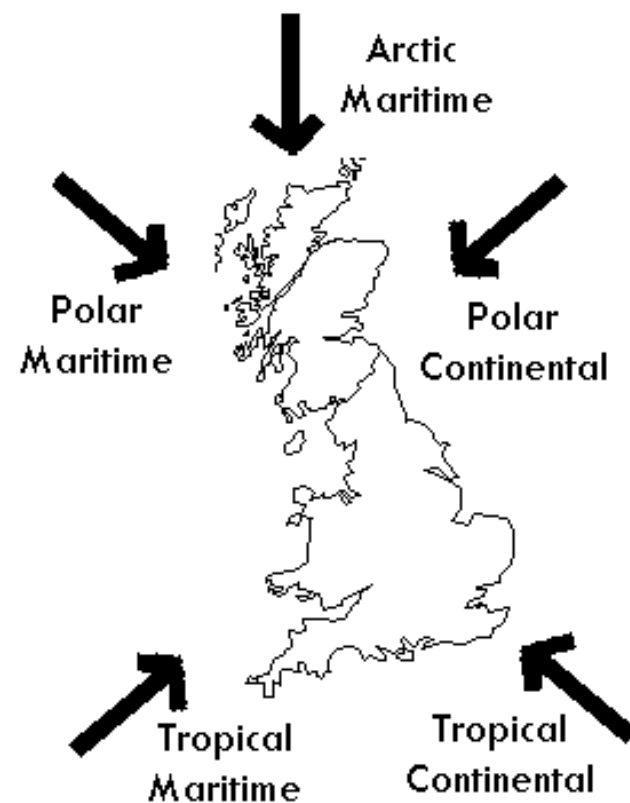




## Geography Year 8: Extreme Weather

### **Week 1: Weather, climate and extreme weather**

Weather refers to the day-to-day changes in the atmosphere. Climate is the average weather a place receives over the course of a year. Many types of extreme weather affect the UK, including strong winds and storms, droughts and floods, and extreme hot or cold spells.



### **Weeks 2 and 3: The Great British Weather Enquiry**

The British weather is influenced by five main air masses you can see on the map opposite. An air mass is a large volume of air which travels from one area to another. The weather an air mass brings is determined by the region it has come from and the type of surface it has moved over. By undertaking an enquiry into the British weather we can think and study like a geographer to make sense of this information to improve our meteorological knowledge.



### **Week 4: Beast from the East**

The Beast from the East was a storm that began in February 2018 and brought a cold wave to Great Britain and Ireland. It also brought widespread, unusually low temperatures and heavy snowfall to large areas with up to 50cm falling over higher ground. The storm resulted in deaths, travel disruption and school and hospital closures as the Met Office issued a 'risk to life' red alert. Social and economic impacts were widespread with many businesses unable to open, and the Armed Forces called in to help the Emergency Services in some areas who were struggling to meet public demand for assistance.



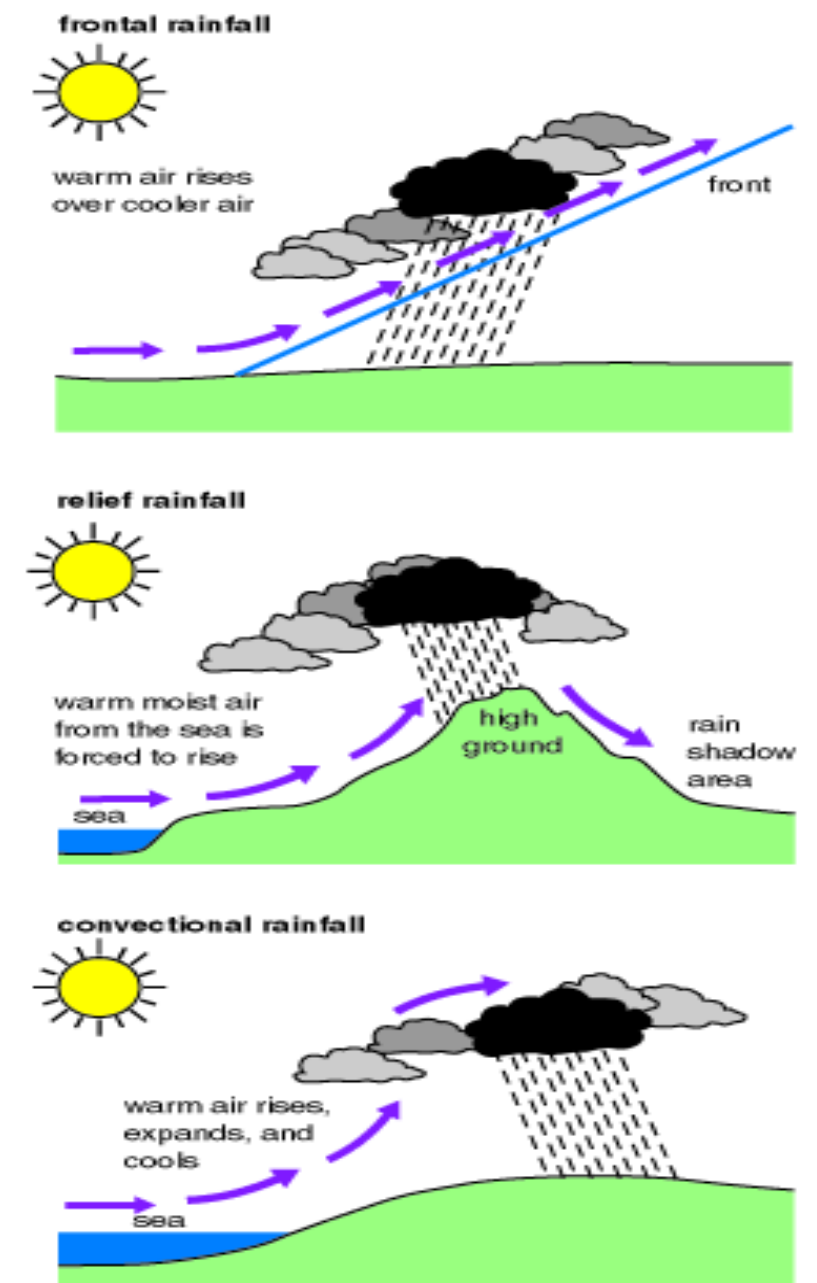
## Week 5: Why does it rain?

There are three types of rainfall; relief, convection and frontal. Relief rainfall occurs when warm, moist air rises up over mountains, cools, condenses and forming clouds which then brings rain. Convection rainfall occurs when the sun heats the land, causing pockets of warm air to rise, condense and form clouds which produce heavy rainfall and thunderstorms. Frontal rainfall occurs when a warm front meets a cold front. The heavier cold air sinks to the ground and the warm air rises above it, reducing in temperature and condensing to form clouds. The clouds then bring heavy rain.



## Weeks 6 & 7: Surviving Katrina

On 29th August 2005 Hurricane Katrina made landfall and quickly became known as one of the most expensive natural disasters in the history of the USA. Over 1,300 people died and the damage was estimated at \$108 billion. Hurricane Katrina's path started by the Bahamas and ended in the state of Tennessee. Hurricane Katrina was a very powerful hurricane that reached 140mph in some places. But the disaster was very badly managed, leading to a number of unnecessary impacts – who was at fault? What lessons were learnt from this?



**Please note:** Seneca assessment homework will be placed for students to complete. Please log in as normal and attempt the exercises



## Slavery

### Slavery: Background

British sailors became involved in the trade in the 16th century, **their involvement increased in the 18th century**. The slave trade made a great deal of profit for those who sold and exchanged slaves. Therefore, they often ignored the fact it was inhumane and unfair.

At least **12 million Africans were taken to the Americas as slaves between 1532 and 1832** and at least **a third of them in British ships**. The slave trade was **abolished in England by the 1807 Slave Trade Act**

### The Slave Trade

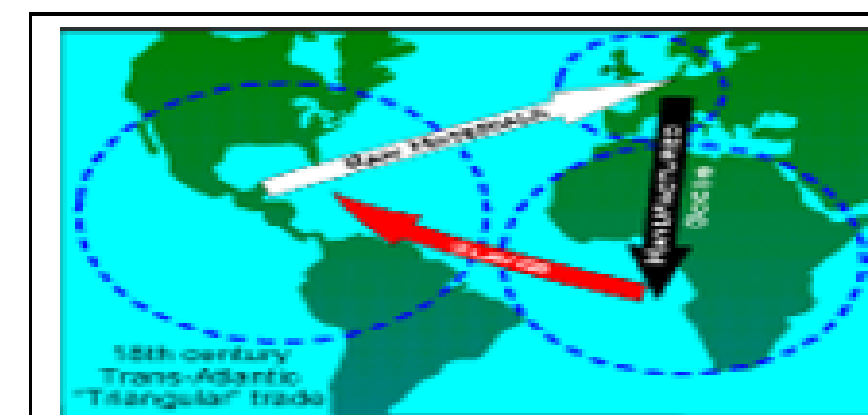
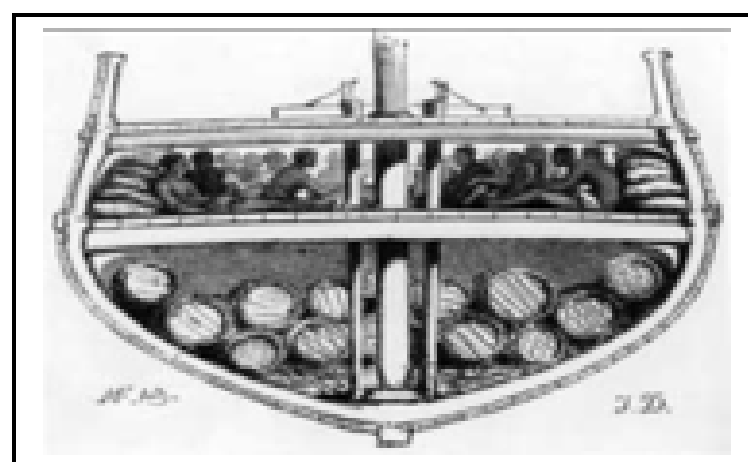
**European slave traders got slaves in several ways**. Occasionally they mounted raids on the West African coast, capturing Africans whom they then enslaved. African and Arab slave traders also brought the enslaved to markets on the West African Coast. **Huge fortunes were created and ports like Liverpool, Bristol and Glasgow were built on the profits**. Between 1690 and 1807 around 11,000 ships left Britain intending to trade in slaves.

### Trade Triangle

The 'triangular trade' was a three-legged journey. **West African slaves** were exchanged for goods such as **cloth, brandy and guns**. Slaves were then taken via **the 'Middle Passage'** across the Atlantic for sale in the West Indies and North America. Finally, **a cargo of rum and sugar was taken back to England to sell**.

### What were conditions like on the Middle Passage?

**As many as 2 million slaves died during the journey** via the Middle Passage. Journeys lasted from **30 to 120 days**, depending on the weather. The ships were often too small to carry the hundreds of slaves on board. Slaves were **tightly packed into cramped spaces** with one person's right leg chained to the left leg of another person. Conditions on the ships were terrible and slaves died from diseases such as **smallpox, scurvy and measles**.



## Life on a slave plantation

Africans who were captured as slaves faced a very hard life. There were two different ways to buy a slave.

1. An auction: this was where the enslaves were paraded and examined like cattle, they were then made to stand on an auction and buyers would bid for them.
2. The second type was a scramble, the slave trader would set a fixed price for the enslaves and at a given signal, like a horn or drumbeat, the buyers would rush into the cage and grab the slaves they liked the best.

## Life on a plantation

The enslaved were taken to work on their master's plantation (huge farm). They were given a new name and identity and were branded to show they now belonged to their master. Slaves were forced to work very hard and were punished severely for not following instructions or working hard enough. They grew crops such as sugar, tobacco, and cotton. While at work slaves were watched over by an overseer. Any lack of effort could result in a whipping.

Slaves had little free time. They were not allowed to leave the plantation and had to stay in very basic wooden houses. Some slaves did keep up their own tradition and culture through songs and dance. Many slaves tried to escape but would be severely punished if caught.

## Optional comprehension tasks:

- 1) List the inhumane conditions onboard a slave ship
- 2) Describe life on a plantation
- 3) What were the different ways that the enslaved were sold?

## Optional research task

Research how slavery affected Liverpool

Sites you could try:

Google:

BBC Bitesize Liverpool and slavery

Liverpool and the slave trade

## Why was the Slave Trade abolished?

| The work of Slaves   | People and events in England  | Economic Reasons   |
|--|---|--|
| <p>A <b>rebellion</b> in Haiti helped to persuade the British government that it would cost too much to fight slave rebellions.</p> <p><b>Former slave Mary Prince</b> published her story. Her book <b>making people aware</b> of the horrors of slavery</p> <p><b>Olaudah Equiano</b>, an ex-slave wrote an autobiography about his life as a slave. It was very popular and raised awareness of the horrors of slavery.</p> | <p><b>Petitions</b> were signed by thousands of members of the public and presented to parliament. In 1792, 20,000 people in Manchester signed petitions.</p> <p><b>Granville Sharp</b> fought court cases for escaped slaves such as Jonathan Strong to be allowed to remain free. These cases began to turn public opinion against slavery.</p> <p>Women also <b>boycotted sugar from</b> slave plantations (stopped buying it)</p> <p><b>William Wilberforce</b> a politician from Hull, campaigned effectively in parliament to stop slavery.</p> | <p><b>Cheaper sugar</b> could be bought from places like Cuba and Brazil (where they did not keep slaves) instead of the West Indies. This meant that the demand for slaves fell.</p> <p><b>The cost of a slave rose dramatically.</b> In the 17<sup>th</sup> century, a slave cost just £3 and could be sold for £20. By the 1870s, slaves cost £50 and profit would be less than 10%</p> <p><b>The cost of putting down and preventing rebellions</b> from slaves made it much less cost-effective to keep slaves rather than hire cheap labourers</p> |

### Comprehension tasks:

- 1) Name two former slaves who helped raise awareness about the horrors of slavery
- 2) When was slavery abolished?

### Revision tasks:

- Try to draw and label the Trade Triangle from memory
- Create a mind map of:
  - Reasons slavery ended
  - Experiences of African Slaves
  - Facts about the British Empire

## Independent learning:

Website: Seneca KS3 History.

<https://app.senecalearning.com/classroom/course/f3012969-6fda-4cb0-8de5-8ff738472ea1/section/a2e0e240-fd16-430d-bbdb-fb4271427860/session>

Recommended sections:

8.1.2 The Triangular Trade

8.1.3. Impact of the slave Trade on Britain

8.1.4 Slave Trade and world impacts

8.1.5 The abolition of slavery

8.1.6 The abolition of slavery, key events

Have a go at the end of section tests too!



Website: BBC Bitesize.

Search BBC Bitesize, The experiences of the enslaved

<https://www.bbc.co.uk/bitesize/topics/z2qj6sg/articles/z6cptrd>

Have a go at the end of section quiz too!

There is also a section on:

The abolition of the slave trade





## French Spring Term Homework

Students use [www.pearsonactivelearn.com](http://www.pearsonactivelearn.com) to complete bespoke tasks to accompany the course. They have their own individual username and the password for everyone is French123.



Students also have access to [www.linguascope.com](http://www.linguascope.com) to help with learning general topic-based vocabulary. Everyone has the username **brooksbank** and password **french123**. Click on the beginner or elementary section and the French flag.





**Unité 2**  
**C'est genial!**  
Tu aimes l'anglaise?  
Pourquoi?

Reasons  
Connectives and Intensifiers

**Unité 1**  
**Mes matières**  
Est-e que tu aimes  
les maths?

Opinions  
Asking questions

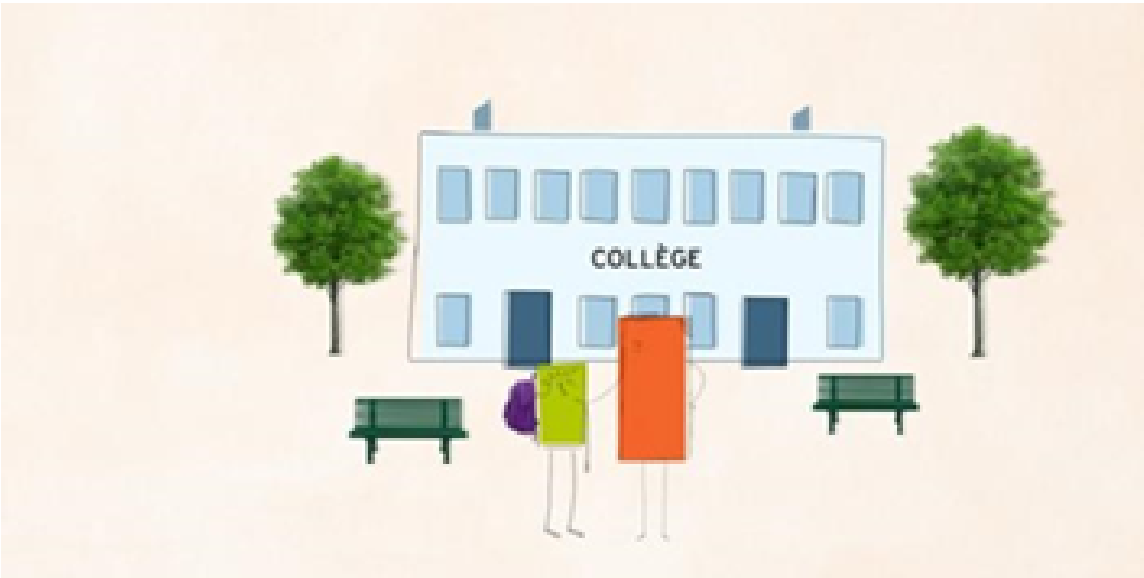
**Unité 3**  
**J'ai cours!**  
Quelle heure est-il?

Telling the time

**Unité 4**  
**Au college en France**  
Décris ta journée  
scolaire

On

**Module 2**  
**Mon collège**



**Unité 5**  
**Miam-miam**  
Qu'est-ce que tu  
manges au collège?

du, de la, de l', des



## Unité 1

### Mes matières

Est-ce que tu aimes  
les maths?

#### Opinions + Questions

To ask a question, you can:

- turn a statement into a question, by making your voice go up at the end of the sentence  
*Tu aimes le français. – You like French.*

*Tu aimes le français? – Do you like French?*

- use **Est-ce que ... ?** and make your voice go up at the end.

**Est-ce que** tu aimes le français? – Do you like French?

When you want to say what you like or dislike, you use the definite article before the noun.

*J'aime le théâtre et la musique.*

*Je déteste l'anglais et les maths.*

Don't forget accents when you are writing! There are four different accents in French: (acute accent) **é** (grave accent) **è** (circumflex) **â** (cedilla) **ç**

### Les matières scolaires • School subjects

|                             |            |
|-----------------------------|------------|
| le français                 | French     |
| le théâtre                  | drama      |
| la géographie/la géo        | geography  |
| la musique                  | music      |
| la technologie              | technology |
| l'anglais (m)               | English    |
| l'EPS (f)                   | PE         |
| l'histoire (f)              | history    |
| l'informatique (f)          | ICT        |
| les arts plastiques (m)     | art        |
| les mathématiques/maths (f) | maths      |
| les sciences (f)            | science    |

### Les opinions • Opinions

Tu aimes/Est-ce que tu aimes ... ? Do you like ... ?

J'aime ... I like ...

J'aime beaucoup ... I like ... a lot.

J'aime assez ... I quite like ...

J'adore ... I love ...

Je n'aime pas ... I don't like ...

Je déteste ... I hate ...

C'est ma matière préférée. It's my favourite subject.

Moi aussi. Me too.

T'es fou/folle. You're crazy.



## Unité 2

### C'est genial!

Tu aimes l'anglaise?  
Pourquoi?

Reasons  
Connectives and Intensifiers



### Les raisons • Reasons

C'est ...

intéressant

ennuyeux

facile

difficile

génial

nul

marrant

On a beaucoup de devoirs.

Le/La prof est sympa.

Le/La prof est trop sévère.

*It's...*

*interesting*

*boring*

*easy*

*difficult*

*great*

*rubbish*

*fun/funny*

*We have a lot of  
homework.*

*The teacher is nice.*

*The teacher is  
too strict.*

Use connectives to make your sentences longer and more interesting:

***et***=and, ***mais***= but, ***aussi***=also, ***parce que***= because

Use intensifiers in front of adjectives to intensify their effect:

***très***= very, ***trop***= too, ***assez***= quite, ***un peu***= a bit



## Quelle heure est-il? • What time is it?

| Il est ...                 | It's ...                              |
|----------------------------|---------------------------------------|
| huit heures                | eight o'clock                         |
| huit heures dix            | ten past eight                        |
| huit heures et quart       | quarter past eight                    |
| huit heures et demie       | half past eight                       |
| neuf heures moins vingt    | twenty to nine                        |
| neuf heures moins le quart | quarter to nine                       |
| midi                       | midday                                |
| minuit                     | midnight                              |
| midi/minuit et demi        | half past twelve<br>(midday/midnight) |

## L'emploi du temps • The timetable

|                        |                        |
|------------------------|------------------------|
| le lundi               | on Mondays             |
| le mardi               | on Tuesdays            |
| le mercredi            | on Wednesdays          |
| le jeudi               | on Thursdays           |
| le vendredi            | on Fridays             |
| À [neuf heures]        | At [nine o'clock]      |
| j'ai [sciences].       | I've got [science].    |
| le matin               | (in) the morning       |
| l'après-midi           | (in) the afternoon     |
| le mercredi après-midi | on Wednesday afternoon |
| la récréation/la récré | breaktime              |
| le déjeuner            | lunch                  |



**Il est** huit heures et demie.      **It's** half past eight.  
**À** huit heures et demie, j'ai ...      **At** half past eight I've got ...



J'aime **le** français.      I like French.  
J'ai français.      I've got French.

## Unité 3

### J'ai cours!

Quelle heure est-il?  
Décris ton emploi du temps!

Telling the time

## La journée scolaire • The school day

|                                      |   |
|--------------------------------------|---|
| On a cours (le lundi).               | <i>We have lessons (on Mondays).</i>        |
| On n'a pas cours ...                 | <i>We don't have lessons ...</i>            |
| On commence les cours à ...          | <i>We start lessons at ...</i>              |
| On a quatre cours le matin.          | <i>We have four lessons in the morning.</i> |
| On étudie neuf matières.             | <i>We study nine subjects.</i>              |
| À la récré, on bavarde et on rigole. | <i>At break, we chat and have a laugh.</i>  |
| On mange à la cantine.               | <i>We eat in the canteen.</i>               |
| On finit les cours à ...             | <i>We finish lessons at ...</i>             |
| On est fatigués.                     | <i>We are tired.</i>                        |

**on** is the most commonly used word for 'we' in French. It has the same verb form as *il/elle*. With regular *-er* verbs, the verb ends in **e**.

|                   | <i>-er</i> verbs<br>(e.g. <i>bavarder</i> – to chat) | <i>avoir</i><br>(to have) | <i>être</i><br>(to be) |
|-------------------|--|---------------------------|------------------------|
| <i>il/elle/on</i> | <i>bavarde</i> <b>e</b>                              | <i>a</i>                  | <i>est</i>             |

À la récré, on bavarde.      At breaktime, we chat.  
On a cours.      We have lessons.  
On est fatigués.      We are tired.

**Unité 4**  
**Au college en France**  
Décris ta journée  
scolaire

On



**on** is not pronounced the same as the English word 'on'. To say it, make an O shape with your mouth. Now say 'on' without moving your lips or tongue.

## Qu'est-ce que tu manges? • What do you eat?/ What are you eating?

|                                |                                |
|--------------------------------|--------------------------------|
| Je mange ...                   | <i>I eat/I'm eating ...</i>    |
| du fromage                     | <i>cheese</i>                  |
| du poisson                     | <i>fish</i>                    |
| du poulet                      | <i>chicken</i>                 |
| du steak haché                 | <i>beefburger</i>              |
| du yaourt                      | <i>yoghurt</i>                 |
| de la pizza                    | <i>pizza</i>                   |
| de la purée de pommes de terre | <i>mashed potatoes</i>         |
| de la glace à la fraise        | <i>strawberry ice-cream</i>    |
| de la mousse au chocolat       | <i>chocolate mousse</i>        |
| de la tarte au citron          | <i>lemon tart</i>              |
| des crudités                   | <i>chopped, raw vegetables</i> |
| des frites                     | <i>chips</i>                   |
| des haricots verts             | <i>green beans</i>             |
| Bon appétit!                   | <i>Enjoy your meal!</i>        |



Be careful with cognates. They look like English words, but are pronounced differently: **chocolat**, **dessert**, **mousse**, **pizza**, **steak**, **tarte**, etc.

**Qu'est-ce que tu manges?** – What are you eating?  
**Est-ce que tu manges ... ?** – Are you eating ... ?

The partitive article (*du, de la, de l' or des*) means 'some'. You often have to use it in French where you could miss it out in English.

*Je mange **du** poulet avec **des** frites.* – I'm eating (some) chicken and (some) chips.

| singular       |              |                    | plural        |
|----------------|--------------|--------------------|---------------|
| masculine      | feminine     | before vowel sound |               |
| <b>du</b>      | <b>de la</b> | <b>de l'</b>       | <b>des</b>    |
| <i>fromage</i> | <i>pizza</i> | <i>eau</i>         | <i>frites</i> |



To make most French nouns plural, you add **s**. The **s** is usually silent.

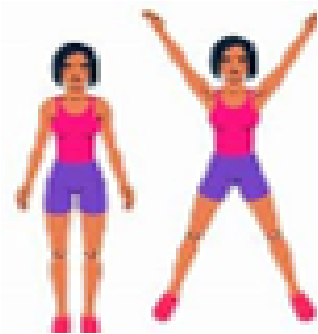


## Unité 5

### Miam-miam

Qu'est-ce que tu manges au collège?

**du, de la, de l', des**

## Year 8 - How to lead a warm-up

| <u>Pulse Raiser</u>   | <u>Dynamic Stretches</u>   | <u>Sports Specific Mobility &amp; Skill</u>  |
|---|--|--|
| <p>This is light exercise that slowly increases the heart rate and gradually increases body temperature.</p> <p>Examples include jogging, skipping, cycling, side steps, high knees.</p>  | <p>Dynamic stretches are active movements where joints and muscles go through a full range of motion. They can be used to help warm up your body before exercising.</p> <p>Examples include hip circles, arm circles, open &amp; close the gate, lunges</p>  | <p>Sports specific mobility &amp; skill should be performed lastly. During this part of the warmup, more vigorous activity should be performed. Activities should reflect the type of movements and actions that will be required during the sporting event, including sports specific drills and technical drills.</p>  |



The most effective warm up routine PT 1

**Communication**

**Knowledge of Safety**

**Knowledge of Specific Sport**



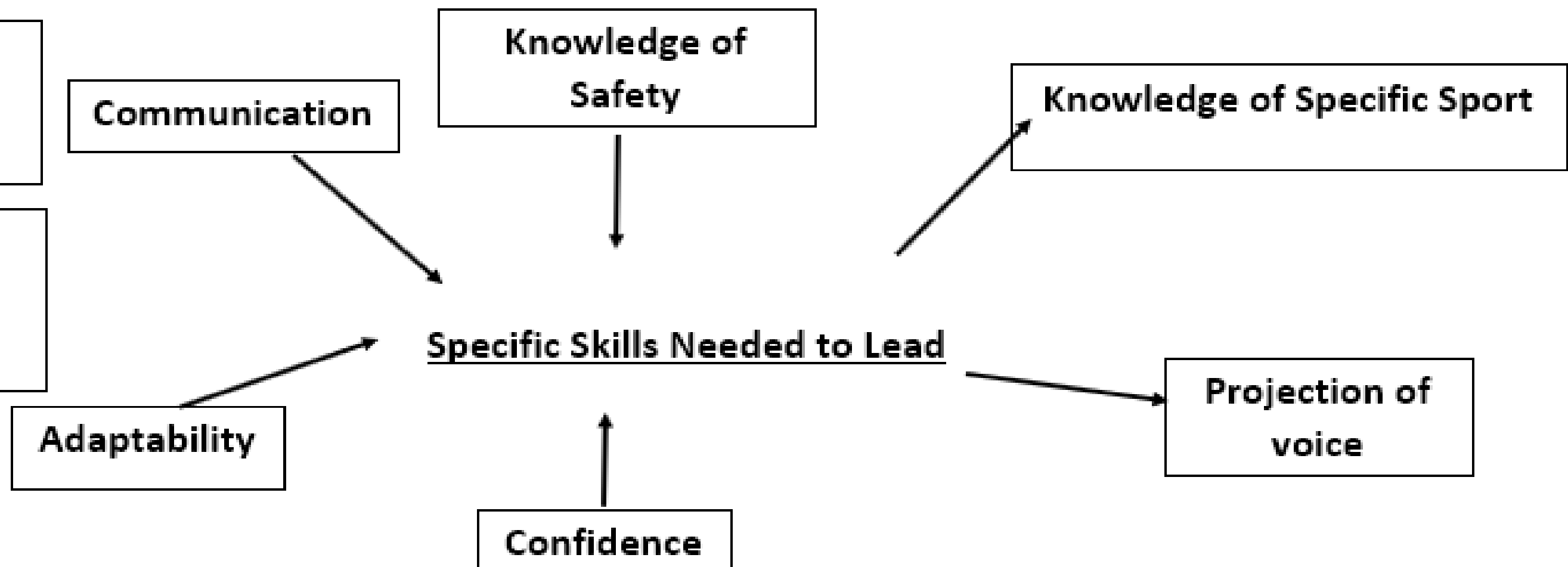
The most effective warm up routine PT 2

**Adaptability**

**Specific Skills Needed to Lead**

**Confidence**

**Projection of voice**







Year 8 –  
Sports Leadership  
Leadership Roles and Opportunities in sport



**Captains**

Help to make decisions for their team and influence and motivate people around them. A good captain will listen to the views of others in the group but will also make decisions when needed.

**Managers**

Help to manage the processes and procedure, tactics and strategies that a team or an individual sort performed will use.

**Teachers**

Help to guide those they are teaching to the right path for the future. Teachers tend to be inspiring and motivating.

**Coaches**

Coaches can work on a 1-1 basis or coach large groups. Their leadership role is to guide and help performers to reach their full potential. Coaches usually have official qualifications.

**Expedition Leader**

Expedition leaders hold responsibility for the group they are leading, such as guiding them down a mountain. Examples include leading an activity for the Duke of Edinburgh award.

**Role Models**

Role models can be positive and negative. Sports men and woman, captains, managers and teachers can all be role models to people. Sports people should act as professional role models.

Traits of a successful leader. Global sports professionals speak about the traits needed to be successful in sport.



The role of a young sport leader. Anna qualified as a L2 coach and talks through her journey.



The Duke of Edinburgh explained. This is an excellent way to develop your organization and leadership skills.



## Year 8 - Sports Leadership

### Planning and leading an activity/drill



The QR code takes you to a video which will explain the main elements in a sports session.

| <u>Warm up</u>  | <u>Main Activity</u>  | <u>Cool Down</u>  |
|---|---|---|
| This is completed at the start of the activity. Sets the tone for the session you are going to lead. This prepares the body for exercise and prevents injury. Make sure this is relevant to the sport you are delivering. | <p>This is the main part of the session. Aims and objectives should be outlined.</p> <p>Drills should you planned for the skill you are focusing the session on. Remember you need to plan drills for a specific time and use demonstrations to explain and show the group what you would like them to do. Reinforce teaching points.</p> | This is the last part of the session. This gives the body a chance to recover. Remember to stretch the muscles you have been using. |

|                            |   |
|----------------------------|---|
| <u>Resources</u>           | <p>What equipment will you need?</p> <p>Is the equipment safe to use?</p> <p>Do you have an appropriate venue to run the session?</p>   |
| <u>Participants</u>        | <p>How many people will be in the session?</p> <p>How will you split the group up?</p> <p>How old are they?</p> <p>What gender are they?</p> <p>What is the ability of the group?</p> |
| <u>Health &amp; Safety</u> | <p>Is there a current risk assessment for the venue?</p> <p>Is all equipment set up working fully?</p> <p>Check the venue for potential hazards.</p>                                  |

# Physical Education

|                                  |       |                           |                          |                 |
|----------------------------------|-------|---------------------------|--------------------------|-----------------|
| Date                             | Venue |                           | Duration                 | No. of players  |
| Session Goals:                   |       |                           | Personal Coaching Goals: |                 |
| Equipment:                       |       |                           |                          |                 |
| Content                          | Time  | Task and Group Management |                          | Coaching Points |
| Introduction/<br>Warm-Up         |       |                           |                          |                 |
| Skill Development<br>/ Practices |       |                           |                          |                 |

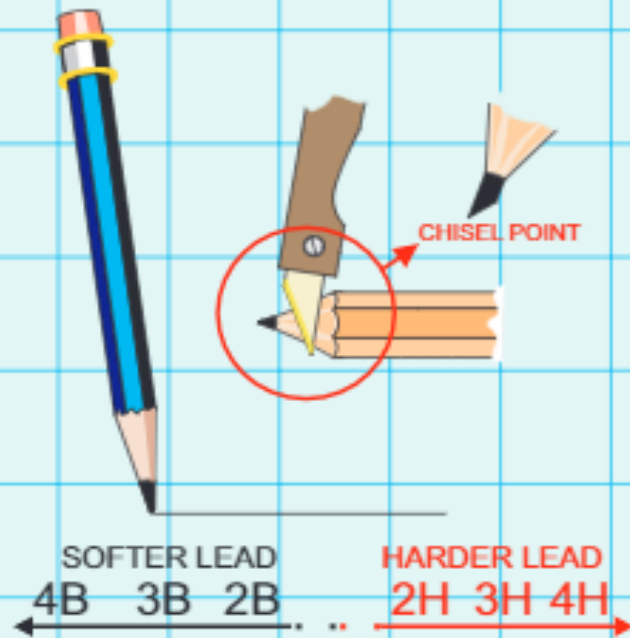
## BASIC DRAWING EQUIPMENT AND DRAWING AIDS

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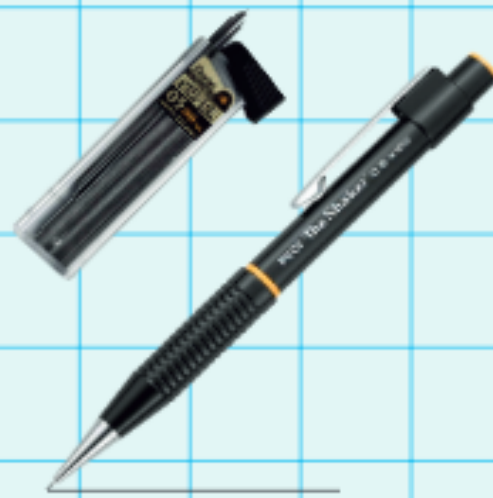
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PENCILS



REFILLABLE PENCIL



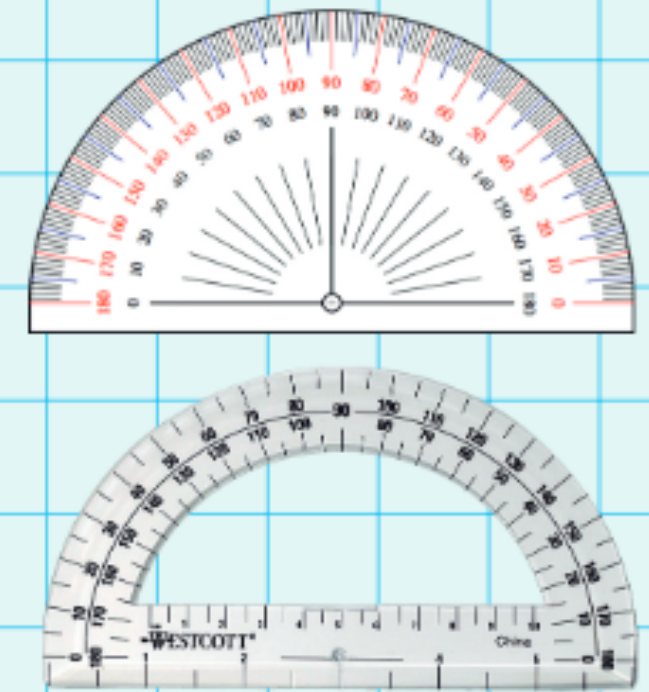
INK PEN - CALIGRAPHY



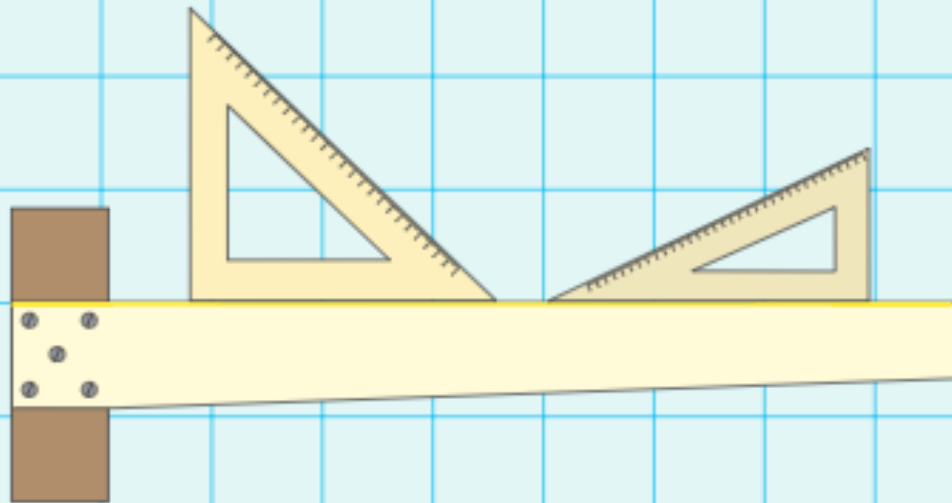
FINE LINE PENS



PROTRACTOR



T-SQUARE AND SET SQUARES



STANDARD COMPASS



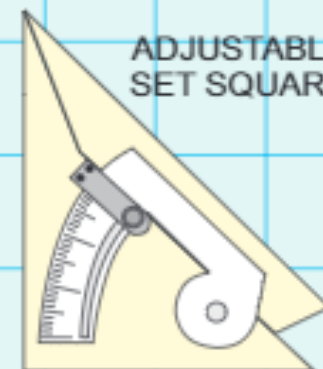
SPRING-BOW COMPASS



RULER



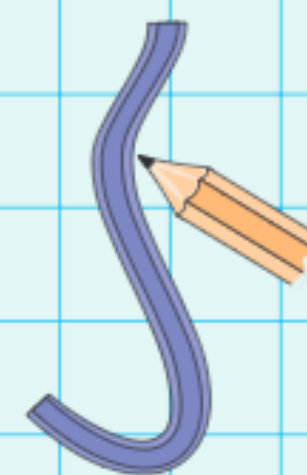
DRAWING BOARD CLIPS



PARALLEL RULE



FLEXI-CURVE

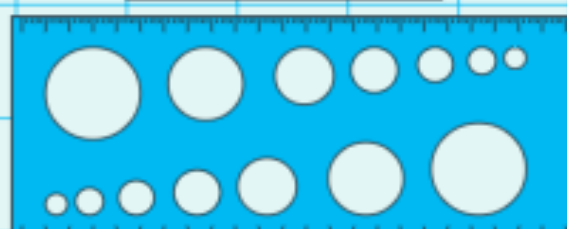


FRENCH CURVES

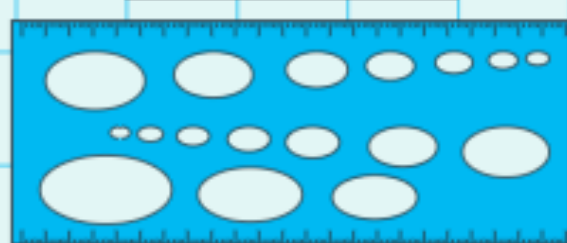


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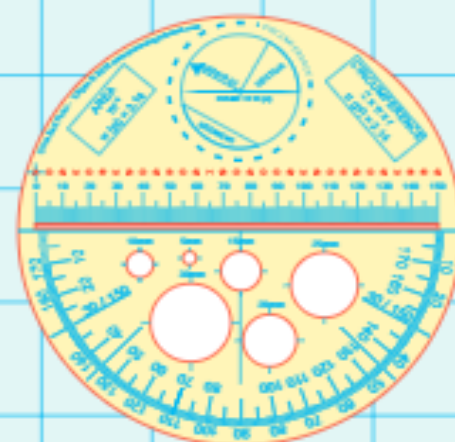
CIRCLE TEMPLATE



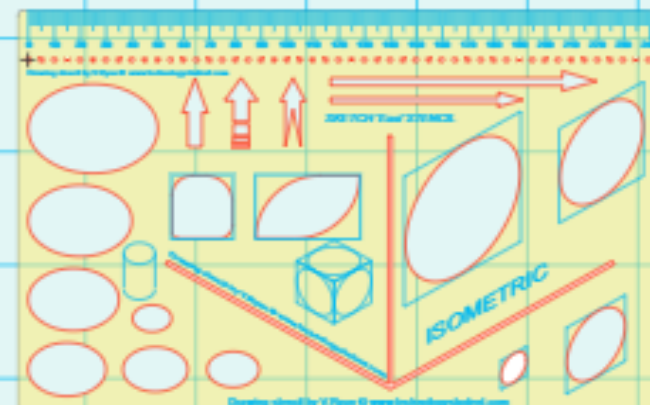
ELLIPSE TEMPLATE



CIRCLE

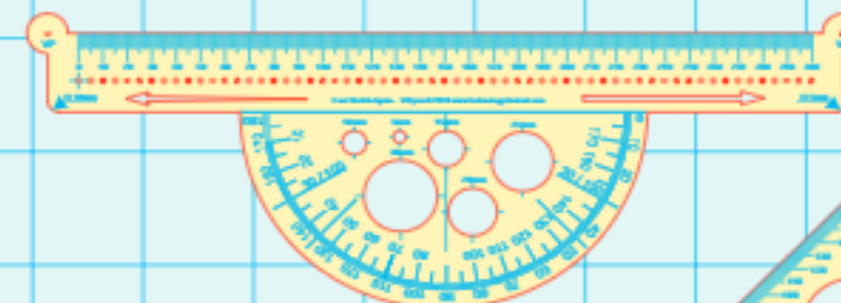


ISOMETRIC

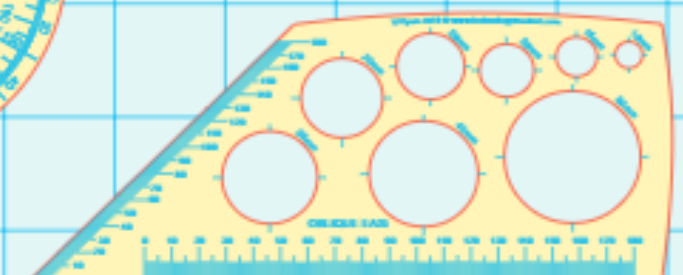


SKETCH 'EASI' STENCILS

PERSPECTIVE



OBLIQUE





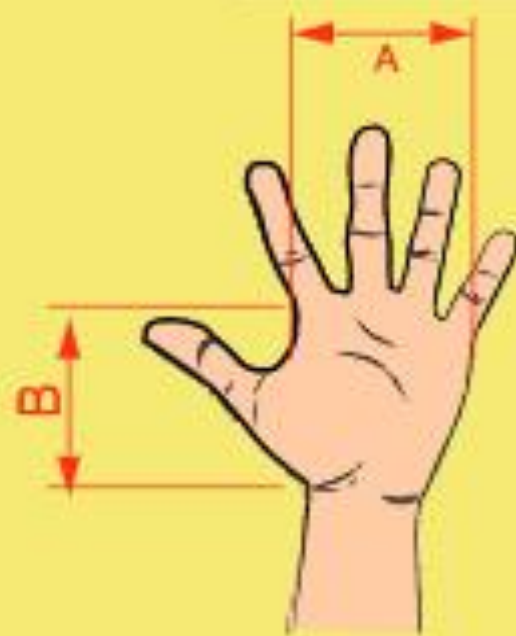
## ANTHROPOMETRICS

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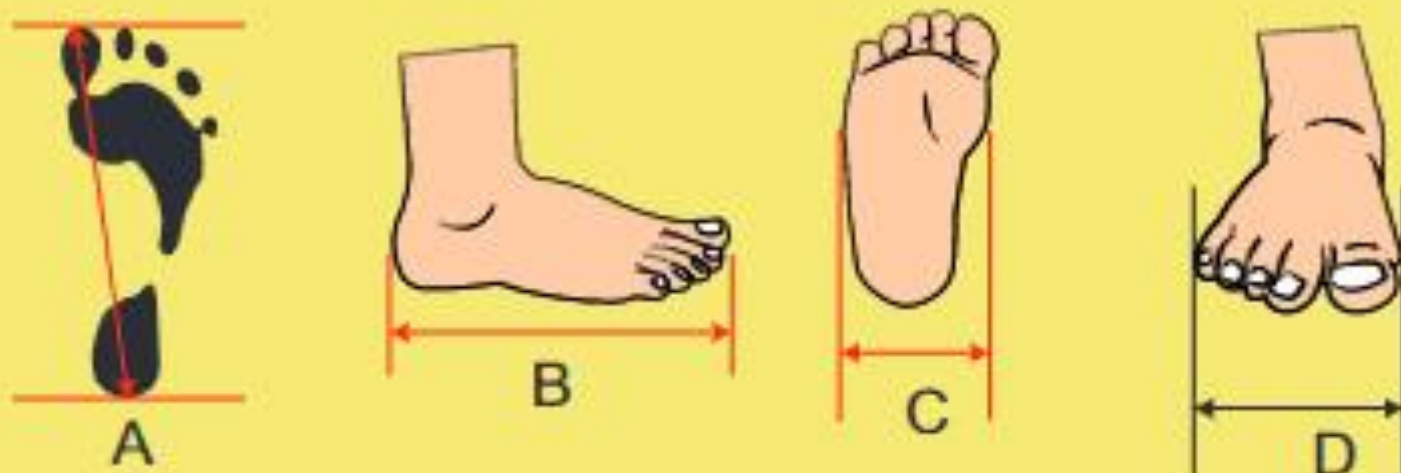
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### COLLECTION OF DATA/STATISTICS



**ANTHROPOMETRICS INVOLVES COLLECTING STATISTICS / MEASUREMENTS RELEVANT TO THE HUMAN BODY.**

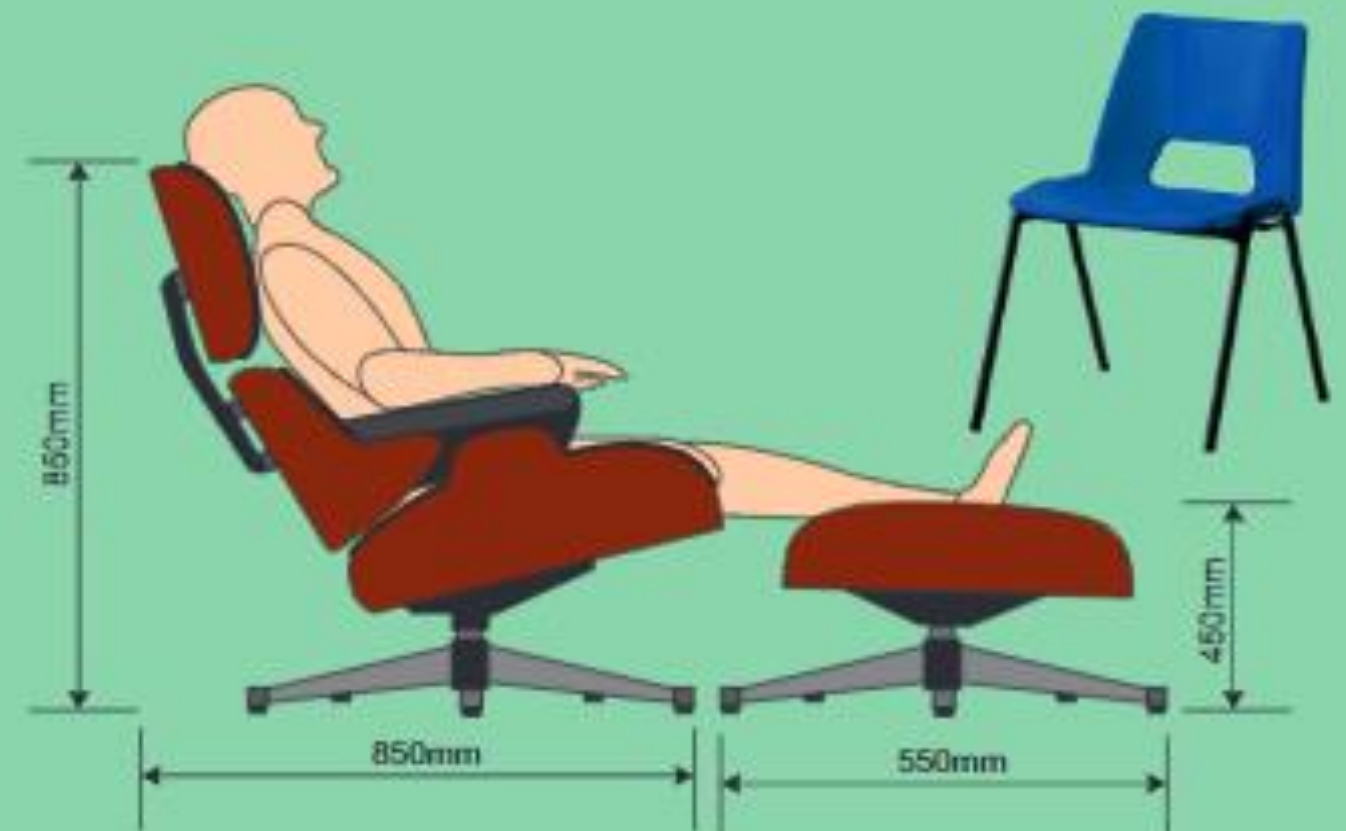
**ERGONOMICS IS THE USE ANTHROPOMETRIC DATA (USUALLY MEASUREMENTS), TO HELP DESIGN PRODUCTS, SO THAT THEY ARE COMFORTABLE AND EASY TO USE, BY AS WIDE A RANGE OF PEOPLE AS POSSIBLE.**



## AND

## ERGONOMICS

### APPLYING DATA/STATISTICS TO THE PRODUCT



FOR INFORMATION ON ANTHROPOMETRICS AND ERGONOMICS GO TO:  
<http://www.technologystudent.com/design/makeup1.htm>  
<http://www.technologystudent.com/topics/bodymeasure11.html>





## Learning Facts About Wood

[poster woods2](https://poster.woods2.technologystudent.com)  
([technologystudent.com](https://technologystudent.com))

Wood is split into 3 main categories – HARWOOD – SOFTWOOD – MANUFACTURED BOARDS.



Hardwood

- Can take up to 100 years to grow
- Are seasonal so they lose their leaves in winter
- Are an expensive timber
- Examples include oak, beech, ash, elm, teak, mahogany



Softwood

- Can take up to 30 years to grow
- Are ever green
- Are less expensive timber
- Often used in construction or for furniture
- Examples include pine, redwood, spruce



Manufactured Boards

- Made in a factory
- Often made from scrap wood from the sawmill mixed with glue
- Available in large sheets of board which are very strong.
- Examples include plywood, medium density fibreboard. Chipboard.





This diagram shows the life cycle of trees from the tree being planted until the end of its life.

If trees are not replanted as quickly as they are felled and used, we will very soon run out of timber.

A materials is said to be **sustainable** if it can be replaced continuously, or if it can be recycled or reused indefinitely.

Other sustainable energy sources include **solar panels, wind turbines, water mills and even bio-fuel.**

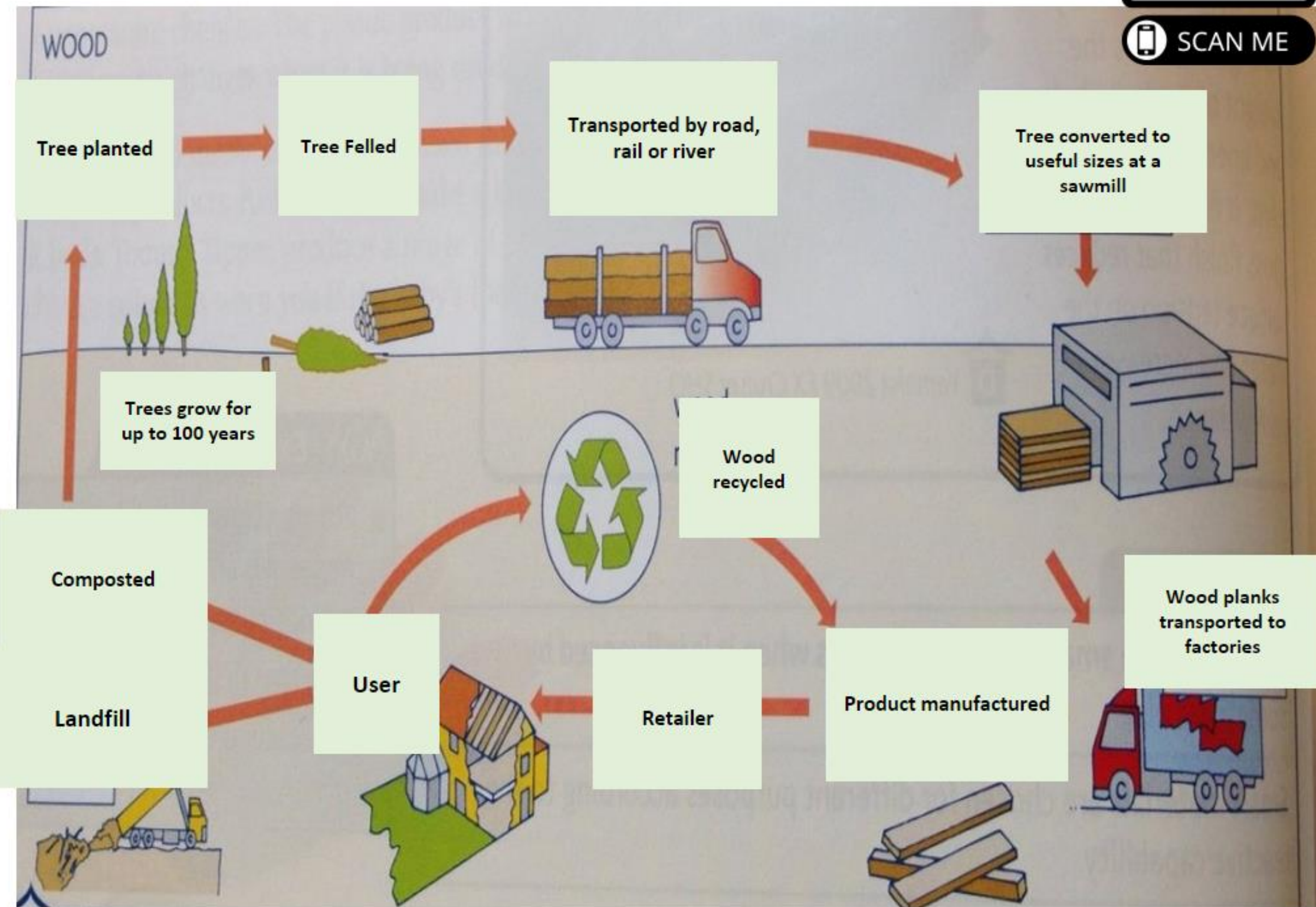
Each of these stages can use huge amounts of **energy**, causing **pollution**. One way to reduce the consumption of energy is to process materials and manufacture products close to the source of the material (forest).

## Technical Knowledge – Sustainability

### The Life Cycle of a Tree



SCAN ME



# RISK ASSESSMENTS - HAZARD - LEVEL OF RISK - CONTROL MEASURE

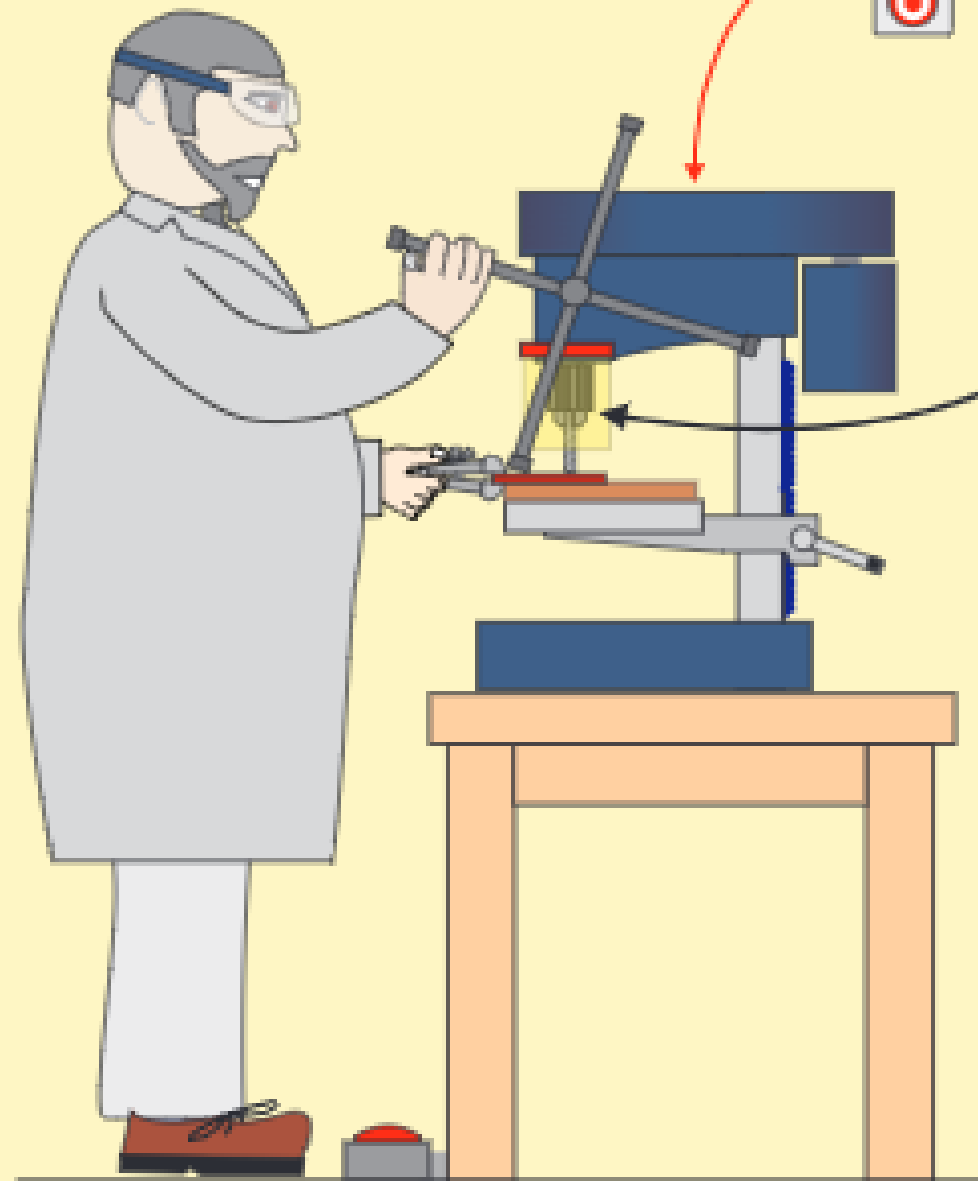
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For more information and exercises on Risk Assessments go to:

<http://www.technologystudent.com/prddes1/healthandsaf1.html>  
<http://www.technologystudent.com/prddes1/helf2.html>  
[http://www.technologystudent.com/prddes1/revcard\\_risk1.html](http://www.technologystudent.com/prddes1/revcard_risk1.html)



## HAZARD

Possibility of sharp, extremely hot steel 'swarf', flying at high speed, in the direction of the operator.

## LEVEL OF RISK

Medium level possibility, due to the physical properties of sheet steel.

## CONTROL MEASURE(S)

Fit Guard. Ensure guard is in position. Goggles supplied. Foot stop for any emergency. Staff training, so that drilling is controlled correctly by the operator and the risks are understood. Appropriate protective clothing provided.

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## HAZARD

*Possibility of sharp, extremely hot steel 'swarf', flying at high speed in the direction of the operator.*

## RISK - LEVEL

*Medium level possibility, due to the physical properties of sheet steel.*

## CONTROL MEASURE(S)

*Fit Guard. Ensure guard is in position. Goggles supplied. Foot stop for emergency. Staff training, so that drilling is controlled correctly by the operator and the risks are understood. Appropriate protective clothing provided.*

**⚠ DANGER**



**Keep hands clear of moving machinery**



**Harmful substance**



# RISK ASSESSMENT – Craft Knife, cutting mat, safety ruler

## HAZARDS – What is dangerous?

- The blade on the craft knife is dangerous.



## RISKS – What could go wrong?

- You could slip when using the craft knife and cut your skin or your clothes or other parts of your work.

## CONTROL MEASURES – What do you need to do to stay safe?

- Always use a safety ruler to guide the craft knife blade.
- Always use a cutting mat to prevent your work from slipping when you are cutting.
- Think carefully about the direction you are cutting in.
- Move other work away from the cutting mat surface.





## RISK ASSESSMENT – The Belt Sander.

### HAZARD What part of the tool is dangerous?

The rotating belt is dangerous

Too much dust is dangerous

### RISK What could go wrong when using it?

Could get something caught in the belt

Could breathe in too much dust

### CONTROL What you need to do to stay safe when using it?

PPE - Hair must be tied up, apron strings fastened behind your back, safety goggles on. Guard lowered to just above the height of the material

Dust extraction turned on

- ☐ Need to twist the red stop button in the direction of the arrow to release the safety catch before the belt sander will turn on.
- ☐ Belt rotates downwards on the front section.





# RISK ASSESSMENT – The Mitre saw

## HAZARDS – What is dangerous?

The blade is dangerous

## RISKS – What could go wrong?

You could cut your skin

Could catch tie, hair, apron in the blade

You could trap your finger in the frame



## CONTROL MEASURES – What do you need to do to stay safe?

Check blade is secure in the blade holder

Check saw is clamped to the table

Check safety zone before using

**The Mitre Saw** is used to cut materials such as wood or plastic. The protractor can be set to a range of cut angles.





## RISK ASSESSMENT – The Strip Heater

### HAZARDS – What is dangerous?

- The hot wire is dangerous
- Trailing wires are dangerous

### RISKS – What could go wrong?

- You could burn your skin
- You could burn your hair
- You could burn your clothing
- You could burn the power cable wire
- You could trip over the power cable wire

### CONTROL MEASURES – What do you need to do to stay safe?

- Hair tied up, apron on, sleeves up,
- Keep paper away from the hot wire
- Be aware of the trailing wire power supply
- Never leave material unsupervised on the hot wire
- Do not touch the hot part of the material



- ☐ The material is heated and softened by a hot wire allowing it to bend accurately along a straight line.
- ☐ It must be held at the required angle until cool and set.



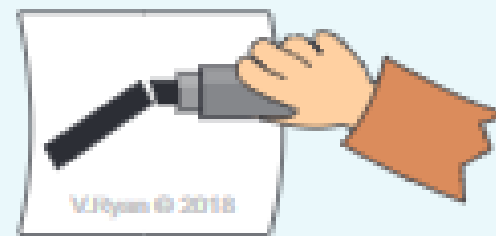
## COMMON PAPER AND BOARDS

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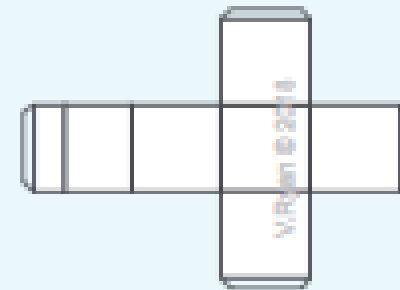
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**CARTRIDGE PAPER** - Used for general drawing. It is often good quality. This paper is used for design and technology projects and will take colour from pencils and felt pens, without too much bleeding to the opposite side of the paper. **120 to 160gsm.**



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**CARDBOARD** - Thicker than paper as it is made up of a number of layers, glue or laminated together. The diagram opposite shows a net / development of a package.



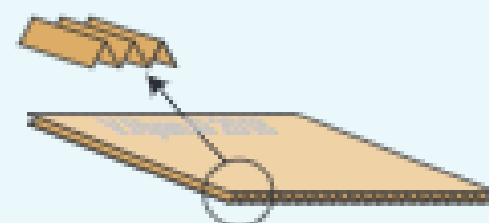
**DUPLEX BOARD** - Used for containers and can contain liquids, as it may have a water-proof liner on the inside. It can have a wax feel. This type of card is used by the food industry and consequently recycled card is not used in its manufacture. **200 to 500 gsm**



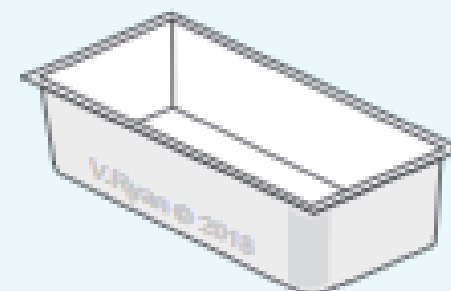
**SOLID WHITE BOARD** - This is normally top quality cardboard, made from quality bleached wood pulp. It is suitable for printing on to and consequently, it is used for hard backed books and general, expensive items. **200 to 500gsm**



**CORRUGATED BOARD** - Often used for packaging large items. These boxes (brown in colour), protect the contents from damage. Corrugated board is strong because it is composed of a top and bottom layer and in between there is a triangulated section. A triangular section is very strong, compared to its weight. **1000 to 5500gsm**

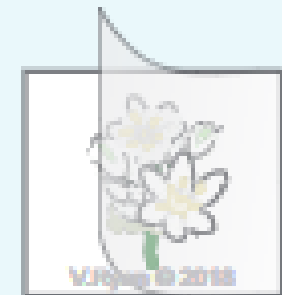


**FOIL LINED BOARD** - Good quality cardboard with an aluminium foil lining. This type of container is ideal for ready made meals or take away meals. The foil retains the heat helping to keep the food warm. **220 to 420gsm**

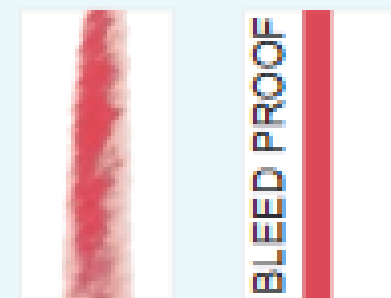


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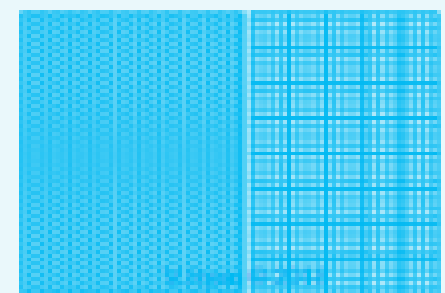
**TRACING PAPER** - Is used by pupils, students and designers. Allows the designer to copy an existing drawing / shape. Tracing paper can be useful, when there is a need to produce several drawings, that are based on the same outline. **40 to 130gsm**



**BLEED PROOF PAPER** - Does not allow felt pens/ink pens (water or spirit based), to spread or bleed through and across the surface. When a felt pen is used on the surface of cartridge paper, accuracy can be lost, as the ink is absorbed and spreads out, leaving an inaccurate line. Bleed proof paper, has a coating that prevents this happening. **70gsm**



**GRID PAPER** - Is manufactured in a range of patterns, the most common being isometric and square grids. This type of layout helps when drawing in three dimensions (isometric) or drawing graphs and pictograms (graph paper). **Standard 80gsm**



**INK JET CARD** - A high quality paper, often used when a photograph is printed. The surface is normally gloss or matt, in texture. It is relatively expensive compared to cartridge or photocopying paper. **120 to 400gsm**



**LAYOUT PAPER** - Used by architects, designers and artists, to lay over the top of an existing drawing, in order to copy parts / aspects. When put together, the various layers appear as one. **40 to 60gsm**



**FOR DETAIL, INFORMATION AND EXERCISES ON GRAPHICS AND VISUAL COMMUNICATION GO TO:**  
[http://www.technologystudent.com/despro\\_flash/graphics\\_main1.html](http://www.technologystudent.com/despro_flash/graphics_main1.html)  
<http://www.technologystudent.com/designpro/drawdex.htm>



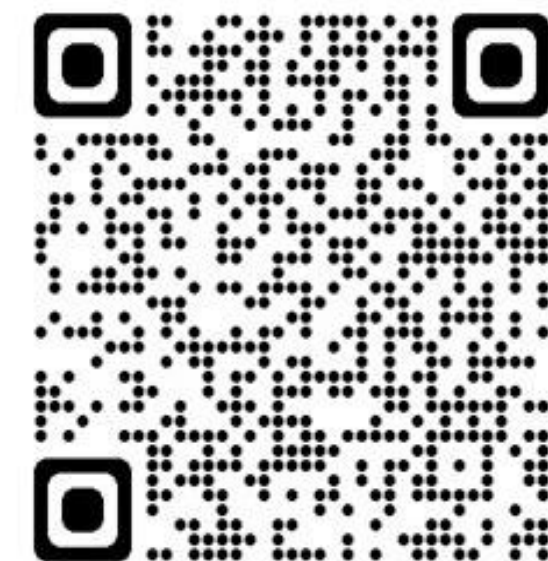
# Felt Artist year 8



Lucy Sparrow



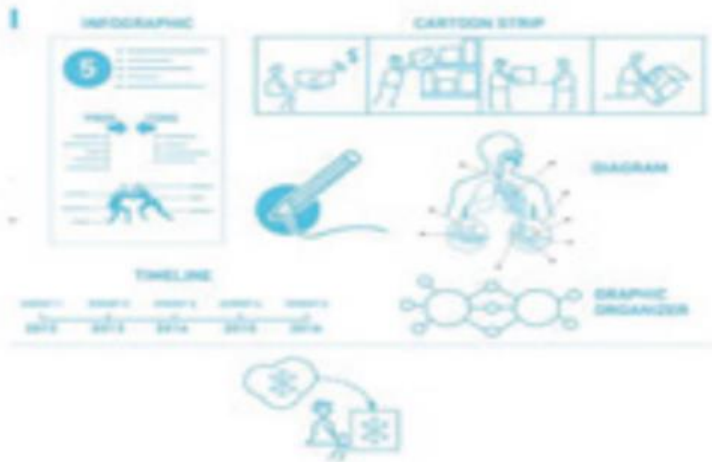
Holly Levelle





# HOW TO SELF TEST

## WITH KNOWLEDGE ORGANISERS



### Graphic Organisers

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

Work your way up from drawing what you know from memory. By presenting your work in a different format the information is more likely to transfer to your long-term memory.



## HOW TO USE GRAPHIC ORGANISERS



### Look, Cover, Write, Check

This strategy is commonly used by primary schools, it is a proven effective method of practising the spelling of key terminology found in your knowledge organiser.

Start by carefully looking at the keyword you need to spell, cover it up, write it down, check it against your knowledge organiser and correct it if necessary. Make sure to practise the words you get incorrect several times as practice makes perfect!



## USING 'LOOK, COVER, WRITE, CHECK'



### Keyword Mnemonics

Make up a sentence where each word begins with the same letter as the word you need to remember.

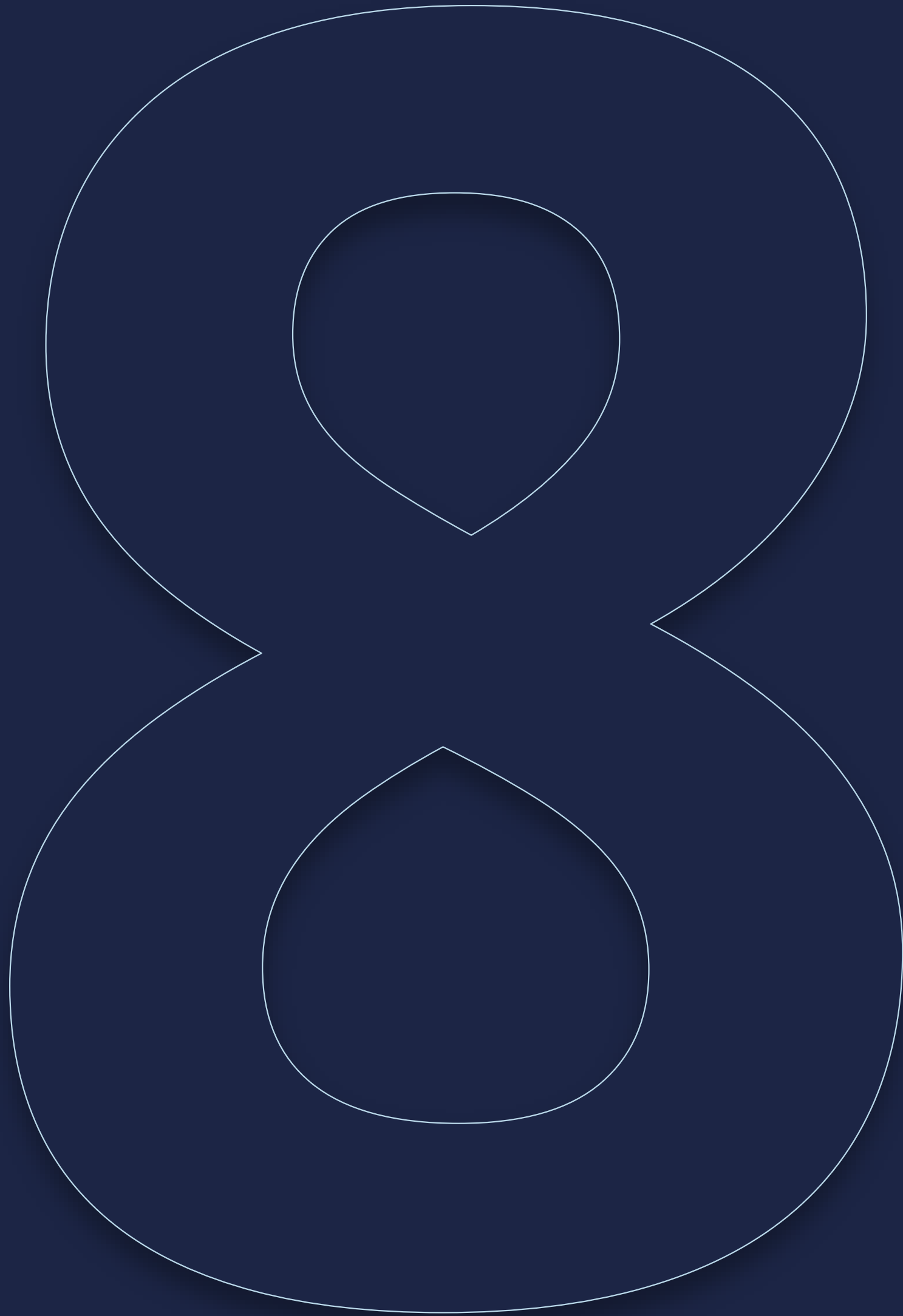
E.g.: Colours of the rainbow: 'Richard Of York Gave Battle In Vain' (Red, Orange, Yellow, Green, Blue, Indigo, Violet)

E.g.: The order of the planets: 'My Very Enthusiastic Mother Just Served Us Noodles' (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune)



## HOW TO USE MNEMONICS FOR REVISION





The Brooksbank School  
Together Learning Trust