



# YEAR 7 KNOWLEDGE ORGANISER

LENT TERM 2020/21

Name:

Family Group:



LEARNING - LOVING - LIVING



PAGE NUMBER	SUBJECT	TOPIC
1-3	General information	Knowledge Organiser guidance, Retrieval activity ideas, The science of Learning- How to revise effectively
4-6	English	Animal Farm
7-8	Mathematics	Ratio and Proportion, Fractions, decimals and Percentages
9-16	Science	Light, Reproduction, The environment, Plant reproduction
17-20	Geography	Rivers, Development
21-22	History	Medieval Society, Tudor England
23-25	Religious Education	Christianity, Judaism
26-28	Physical Education	Basketball, Table Tennis, Wall Ball
29-31	Computer Science	Programming, Problem Solving
32-33	Drama	Foundations of Drama
34-36	Music	Reading Notation and Instrumental Skills, Strings
37	Art	Foundations of skills
38-39	Food and Nutrition	Introduction to food
40	Engineering	Engineering
41-42	French	French vocabulary
43	Spanish	Core language
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## GENERAL INFORMATION

The knowledge organiser is a book that sets out the **important, useful** and **powerful knowledge** of a single topic on one page.

When used effectively, Knowledge Organisers are useful in:

- Helping build a foundation of **factual knowledge**.
- Embedding **revision techniques** for now and future studies (A-Level, College, University)
- Allowing knowledge to become stored in **long term memory** which frees up working memory for more complex ideas. It also allows you to connect concepts together, even across subjects

## HOMEWORK EXPECTATIONS

EACH NIGHT you should spend *at least 1 hour* per night on homework.

3 subjects per night x 20 minutes per subject = 1 hour. Use the homework timetable as a guide to what subjects to complete each night.

**Complete all work in your exercise book** and make sure you bring your knowledge organiser to school EVERYDAY (in your coloured folder).

Every FRIDAY morning the week's worth of KNOWLEDGE ORGANISER homework will be checked in Family Group time and detentions issued for work not complete, or not up to standard.

## SUBJECT HOMEWORK

All students will also be assigned **ENGLISH** reading activities on [www.CommonLit.org](http://www.CommonLit.org) with each assignment taking 20-30 minutes to complete and **MATHS** activities with short explanatory videos on the online platform of <https://mathswatch.co.uk>.

It is also recommended to take advantage of FREE online revision tools such as [www.senecalearning.com](http://www.senecalearning.com) or the recently updated BBC BITESIZE.

It is also recommended that students regularly **READ** a variety of **fiction and non fiction books** of their choosing. This extra reading will develop and broaden general understanding and context in all subjects.

## MICROSOFT TEAMS

Remember to check TEAMS regularly for updates and additional home learning files including copies of your mastery booklets.

You can also ask your teachers questions on teams and view videos of 'how to use your knowledge organiser'.



## HOMEWORK TIMETABLE

Year 7	Subject 1	Subject 2	Subject 3
Monday	Maths	History	PE
Tuesday	English	Geography	ICT
Wednesday	Maths	RE	Music
Thursday	English	Science	Creative
Friday	Maths	Languages	Drama

## EQUIPMENT CHECKLIST

Pencil case	Knowledge Organiser	2 Black or Blue pens
2 pencils and Eraser	Green Pen	Pencil Sharpener
Mini whiteboard and pen	Calculator	Ruler
Maths geometry set	Class book	

## HOMEWORK CHECKLIST

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Half term					
Week 1	Week 2	Week 3	Week 4	Week 5	

Here are some activities that you can try at home with your knowledge organiser to help revise. There are even more strategies on page 3.

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# 4 Methods of Retrieval Practice

@ImpactWales

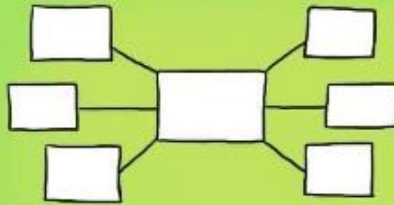
Before you start put away all your books & classroom materials.

## Retrieval Practice Examples

- \* Exit Tickets
- \* Starter quizzes
- \* Multiple choice quizzes
- \* Short answer tests
- \* Free write
- \* Think, pair, share
- \* Ranking & sorting
- \* Challenge grids

### BRAIN DUMP

Write, draw a picture, create a mind-map on everything you know about a topic.



Give yourself a time limit, say 3 minutes, then have a look at your books & add a few things you forgot.

### QUIZZING

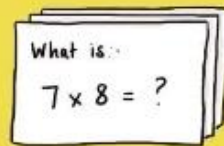
Create practice questions on a topic. Swap your questions with a partner & answer.

Question - What is a metaphor?

- A comparison using 'like, as, than'.
- A comparison where one thing is another.
- A comparison with a human attribute.

### FLASHCARDS

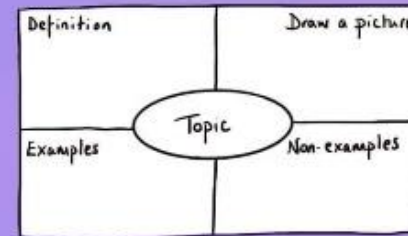
Create your own flashcards, question on one side answer on the other. Can you make links between the cards?



You need to repeat the Q&A process for flashcards you fail on more frequently & less frequently for those you answer correctly

### KNOWLEDGE ORGANISERS

Complete a knowledge organiser template for key information about a topic.



You can use knowledge organisers to learn new vocab & make links in between subjects or ideas.

After you have retrieved as much as you can go back to your books & check what you've missed. Next time focus on that missing information

### CONCRETE EXAMPLES

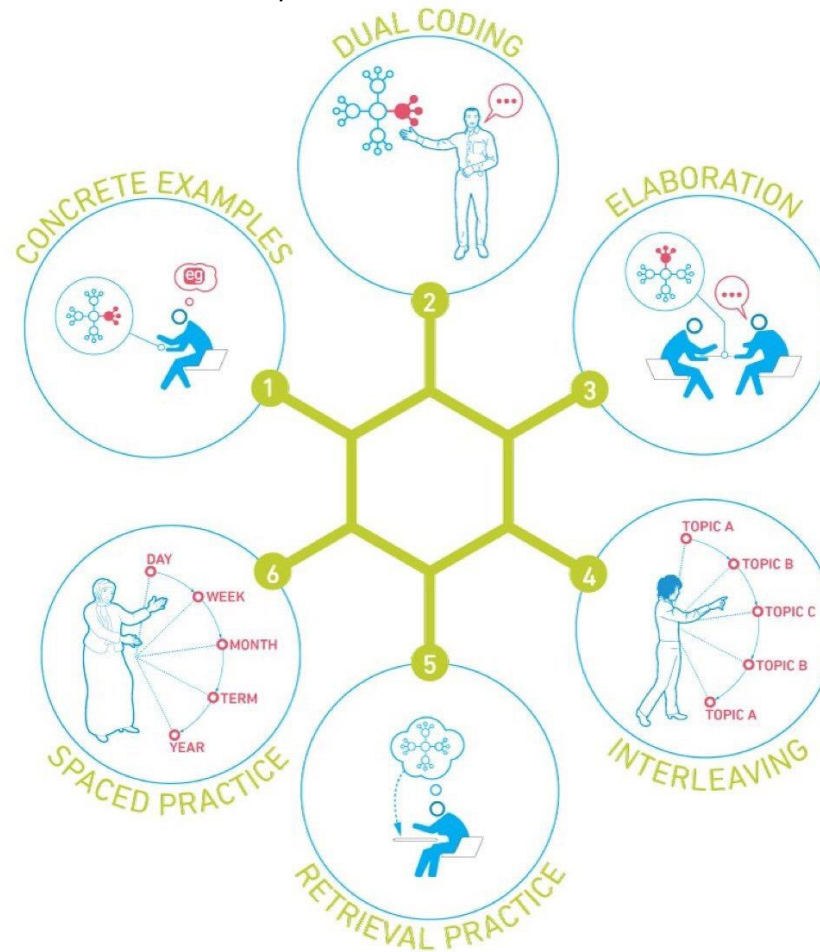
When you're studying, try to think about how you can turn ideas you're learning into concrete examples. Making a link between the idea you're studying and a real life example, concrete example, can help students understand abstract ideas and make it 'stick'.

### SPACED PRACTISE

Divide up your revision into short manageable chunks of time. When revising aim for 20 - 30 minutes per session. Five hours spread out over two weeks is better than the same five hours all at once. This is **spaced practice** and it is regarded as one of the most effective revision strategies.

### DUAL CODING

Dual coding is the process of combining visual and written materials. You can visually represent materials using methods such as info graphics, timelines, cartoon/comic strips, diagrams and graphic organisers. Combining images with words or explaining an image makes it more likely to 'stick'.



### RETRIEVAL PRACTICE

Through the act of retrieval, or calling information to mind, our memory for that information is strengthened and forgetting is less likely to occur. Retrieval practice ideas include: Read, cover, write, check, flashcards and brain dumps.

### ELABORATION

When talking about studying, elaboration involves explaining and describing ideas with many details. Elaboration also involves making connections among ideas you are trying to learn. Ask yourself questions about a topic to delve deeper. The more information you have about a specific topic the stronger your grasp and ability to recall.

### INTERLEAVING

Interleaving is a process where you combine multiple subjects and topics while you study in order to improve learning. Switch between ideas and make links between them during a study session. Interleaving has been shown to lead to better long-term retention

**Context - George Orwell**

<b>1. Pseudonym</b>	A fictional or made up name used to hide a writer’s identity
<b>2. Democratic socialism</b>	
<b>3. Dystopia</b>	An imagined state where everything is bad
<b>4. Eponymous</b>	Having the same name as the title
<b>5. Totalitarianism</b>	A system of government which demands complete obedience and control

**Context - Marxism**

<b>6. Karl Marx</b>	The founder of Marxism, an influential political ideology that was critical of capitalism.
<b>7. The Communist Manifesto</b>	Marx’s most famous work.
<b>8. Utopia</b>	A state where everything is perfect. Marx believed a utopian society would be classless and stateless.
<b>9. Proletariat</b>	Working class people
<b>11. Collectivisation</b>	Property is owned by the state rather than individually
<b>12. Communism</b>	Political system of collectivisation
<b>13. Capitalism</b>	Based on private ownership of the means of production and individual economic freedom

**Context – The Russian Revolution**

<b>14. 1917</b>	The year in which the revolution took place.
<b>15. USSR</b>	Following the revolution, Russia was renamed the Union of Soviet Socialist Republics
<b>16. Bolsheviks</b>	Revolutionary faction who seized power in 1917.
<b>17. Vladimir Lenin</b>	Leader of the Bolsheviks
<b>18. Red Terror</b>	The Red Terror was a period of political repression and mass killings carried out by Bolsheviks after the beginning of the Russian Civil War in 1918
<b>19. Constitution</b>	A nation or state’s fundamental set of laws

**Plot**

<b>Chapter 1</b>	The animals gather in the barn where Old Major delivers a speech arguing for rebellion.
<b>Chapter 2</b>	The rebellion happens after Mr Jones forgets to feed the animals.
<b>Chapter 3</b>	The pigs begin to emerge as leaders.
<b>Chapter 4</b>	A group of men try to seize the farm and The Battle of the Cowshed takes place.
<b>Chapter 5</b>	Snowball is expelled from the farm and work on the Windmill begins.
<b>Chapter 6</b>	The pigs begin trading and sleeping in beds. A storm destroys the windmill and this is blamed on Snowball
<b>Chapter 7</b>	Napoleon calls a meeting and several ‘traitors’ are executed.
<b>Chapter 8</b>	A group of men attack the farm and blow up the Windmill. Several animals die and Boxer is injured.
<b>Chapter 9</b>	Boxer is injured working and Napoleon calls for a vet. Boxer is taken away but Benjamin realizes he is being taken for slaughter. Boxer is never seen again.
<b>Chapter 10</b>	Years pass. The pigs begin walking on two legs, wearing clothes and the commandments are changed. In the final scene, the pigs meet with the farmers and play cards. The animals can not tell the difference between the pigs and the humans.

**Key Characters**

<b>Mr Jones</b>	The drunken owner of Animal Farm, represents the tyranny of man.
<b>Old Major</b>	Inspires the rebellion with his rhetoric. Possibly represents Lenin or Marx.
<b>Napoleon</b>	Establishes himself as a dictator. A representation of Stalin.
<b>Snowball</b>	An opponent to Napoleon who is devoted to animalism.
<b>Boxer</b>	Devoted and immensely strong. A representation of the working class.
<b>Squealer</b>	Mouthpiece of Napoleon. Uses propaganda to control the animals.
<b>Benjamin</b>	Stubborn, cynical and apathetic. A close friend to Boxer.
<b>Dogs and Sheep</b>	Instruments of fear and control, educated by Napoleon.

Key Vocabulary	Definition		
20. Tyranny (n)	Cruel and oppressive government or rule	35. Feudal (adj)	The dominant social system in which peasants were expected to live on their lord's land and provide labour and a share of produce.
21. Exploitation (n)	Benefit from a situation in a way considered unfair or underhand	36. Hegemony (n)	Leadership or dominance
22. Repression (n)	The act of using force to control somebody or something	37. Naivety (n)	Lack of experience, wisdom or judgment
23. Egalitarian (adj)	Believing that all are equal	38. Hypocritical (adj)	Pretending to believe something that they do not or in the opposite way to what is said and done.
24. Ubiquitous (adj)	Found or present everywhere	39. A Pyrrhic Victory	A victory that has such a devastating effect it may as well be a defeat.
25. Apathetic (adj)	Lack of interest, enthusiasm or concern	40. Omniscient (adj)	All knowing
26. Esteem (n)	Respect and admiration	41. Ominous (adj)	Suggesting something bad will happen
27. Stoic (adj)	Someone who can endure pain or hardship without complaining or showing their feelings.	42. Elitist (adj)	In favour of those considered superior to others
28. Propaganda (n)	Information, particularly misleading information, used to promote a particular political view.	43. Stratification (n)	The arrangement of something into specific groups
29. Altruistic (adj)	Showing a selfless concern for the wellbeing of others.	44. Idealism (n)	The unrealistic belief or pursuit of perfection
30. Inquisition (n)	A period of intense questioning	45. Intelligentsia (n)	Intellectual or highly educated section of society
31. Ideology (n)	A system of ideas and ideals	46. Bourgeoisie (n)	The materialistic and conventional middle class
32. Radical (adj)	Diverting from tradition	47. Epiplexis (n)	A series of rhetorical questions
33. Oppression (n)	Exercise of authority or power in an unjust manner	48. Tricolon (n)	Three things in a row
34. Liberate (v)	To free	49. Anaphora (n)	Repeating start of phrase, clause or sentence
<b>Stylistic Features and terms</b>			
50. Allegory (n)	A story or poem with a hidden meaning	54. Rhetoric (n)	Persuasive speaking or writing
51. Symbolism (n)	Using something to represent a larger, more abstract idea	55. Circular Narrative (n)	A narrative that ends in the way that it began
52. Omniscient narrator (n)	A narrator who is able to observe everything and who know the thoughts and actions of all the characters	56. Irony (n)	The opposite of what is expected, often humorous
53. Satire (n)	Writing that ridicules, often a political figure or society	57. Hypophora (n)	Asking a question then answering it straight away

<b>Key Vocabulary</b>	<b>Definition</b>		
<b>58. Bureaucracy (n)</b>	A system of government in which most important decisions are made by state officials, rather than by elected representatives	<b>73. Constitution (n)</b>	A nation or state's fundamental set of laws
<b>59. Dictator (n)</b>	A ruler (often cruel), with total power	<b>74. Axiom (n)</b>	A short statement expressing a general rule
<b>60. Dissenter (n)</b>	Someone who disagrees with those in power	<b>75. Irrefutable (adj)</b>	Impossible to deny or disprove
<b>61. Expulsion (n)</b>	The act of forcing someone to leave	<b>76. Frenzy (n)</b>	Uncontrolled excitement or wild behaviour.
<b>62. Manipulate (v)</b>	Control or influence (a person or situation) cleverly	<b>77. Hysterical (adj)</b>	Uncontrolled emotions
<b>63. Dubious (adj)</b>	Not to be relied on, doubtful	<b>78. Asylum (n)</b>	The protection granted by a state to someone who has left their home country as a political refugee.
<b>64. Passive (adj)</b>	Accepting or allowing what happens without active response or resistance	<b>79. Relentless (adj)</b>	Unceasing
<b>65. Proletariat (n)</b>	The working class	<b>80. Tumult (n)</b>	A loud, confused noise especially when caused by a mass of people.
<b>66. Corrupt (adj)</b>	Dishonest and immoral	<b>81. Mimicking (v)</b>	Imitating or copying
<b>67. Fascism (n)</b>	A society ruled by a dictator who is backed by the military	<b>82. Evade (v)</b>	Escape or avoid
<b>68. Etonian (n)</b>	A student of Eton College	<b>83. Complacent (adj)</b>	Showing smug or uncritical satisfaction with oneself or one's achievements.
<b>69. Socialism (n)</b>	A belief that we should all share in the profits of our labour	<b>84. Intrepid (adj)</b>	Fearless and adventurous
<b>70. Leftist (n)</b>	Someone who supports social equality	<b>85. Impassioned (adj)</b>	Filled with great emotion
<b>71. Libel</b>	The crime of writing bad things about people that are not true.	<b>86. Collaborate (v)</b>	To work jointly
<b>72. Atrocity (n)</b>	Extremely wicked or cruel act	<b>87. Audacious (adj)</b>	Showing a willingness to take bold risks



### Keywords



- Ratio:** a statement of how two numbers compare
- Equal Parts:** all parts in the same proportion, or a whole shared equally
- Proportion:** a statement that links two ratios
- Order:** to place a number in a determined sequence
- Part:** a section of a whole
- Equivalent:** of equal value
- Factors:** integers that multiply together to get the original value
- Scale:** the comparison of something drawn to its actual size.

### Direct Proportion

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



4 cans of pop = £2.40

4 cans of pop = £2.40

2 cans of pop = £1.20

12 cans of pop = £7.20

50 x

50 x

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

12 cans of pop = £7.20

50 x

50 x

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

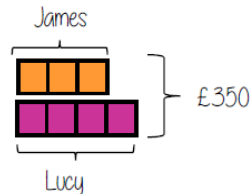
### Sharing a whole into a given ratio

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

Model the Question

James: Lucy

3 : 4



£350 ÷ 7 = £50

□ = one part = £50

Find the value of one part

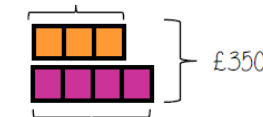
Whole: £350  
7 parts to share between (3 James, 4 Lucy)

Put back into the question

James: Lucy

(x 50) 3 : 4 (x 50)  
£150 : £200

James = 3 x £50 = £150

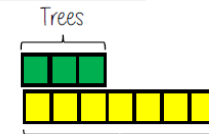


Lucy = 4 x £50 = £200

### Ratio as a fraction

Trees: Flowers

3 : 7

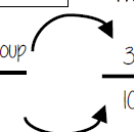


There are 3 parts for trees

Fraction of trees

Number of parts of in group

Total number of parts

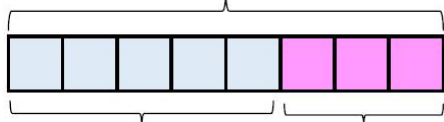


Tree parts 3 + Flower parts 7 = 10

### Representing a ratio

"For every 5 boys there are 3 girls"

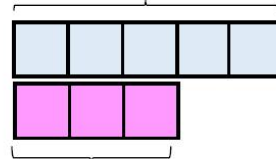
This is the "whole" — boys and girls together



This represents the 5 boys This represents the 3 girls

5:3

This represents the 5 boys Double Number Line



This represents the 3 girls

This is the "whole" — boys and girls together

### Order is Important

"For every dog there are 2 cats"



1:2

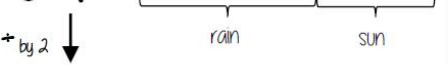
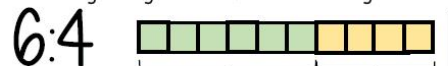
The ratio has to be written in the same order as the information is given

e.g. 2:1 would represent 2 dogs for every 1 cat ✗

### Simplifying a ratio

Cancel down the ratio to its lowest form

"For every 6 days of rain there are 4 days of sun"



3:2

"For every 3 days of rain there are 2 days of sun" — when this happens twice the ratio becomes 6:4

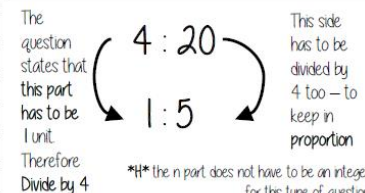
Find the biggest common factor that goes into all parts of the ratio

For 6 and 4 the biggest factor (number that multiplies into them is 2)

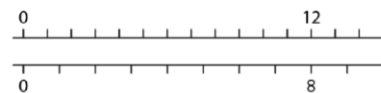
### Ratio 1:n (or n:1)

This is asking you to cancel down until the part indicated represents 1

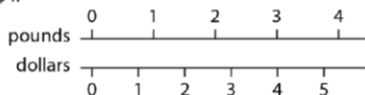
Show the ratio 4:20 in the ratio of 1:n



Ellie and her dad walk side by side along a straight path. The number of steps they take is represented here:



This double number line can be used to convert between pounds and dollars. £3 is equivalent to \$4.

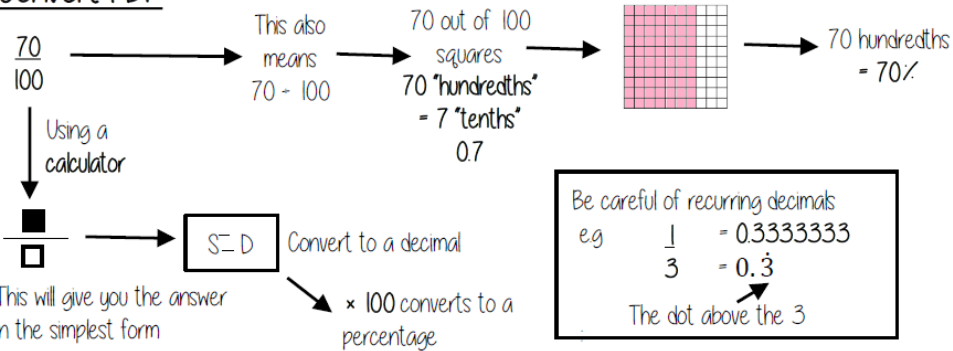


Double number lines can represent direct proportion relationships

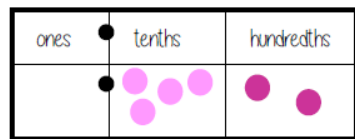
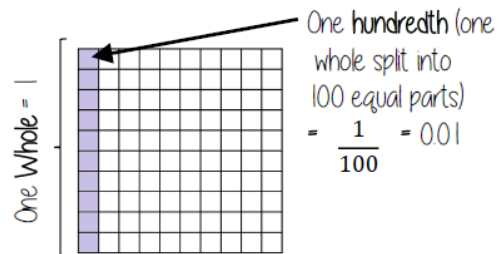
### Keywords

- Fraction:** how many parts of a whole we have
- Decimal:** a number with a decimal point used to separate ones, tenths, hundredths etc.
- Percentage:** a proportion of a whole represented as a number between 0 and 100
- Place value:** the numerical value that a digit has decided by its position in the number
- Placeholder:** a number that occupies a position to give value
- Interval:** a range between two numbers
- Tenth:** one whole split into 10 equal parts
- Hundredth:** one whole split into 100 equal parts
- Sector:** a part of a circle between two radius (often referred to as looking like a piece of pie)
- Recurring:** a decimal that repeats in a given pattern

### Convert FDP



### Tenths and hundredths

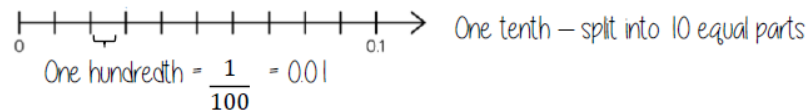
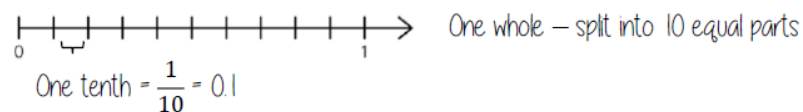


0 ones, 5 tenths and 2 hundredths

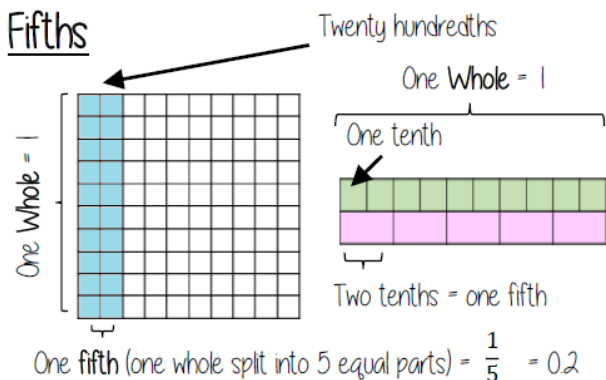
$$0 + 0.1 + 0.1 + 0.1 + 0.1 + 0.1 + 0.01 + 0.01 = 0 + 0.5 + 0.02 = 0.52$$

One tenth (one whole split into 10 equal parts) =  $\frac{1}{10} = 0.1$

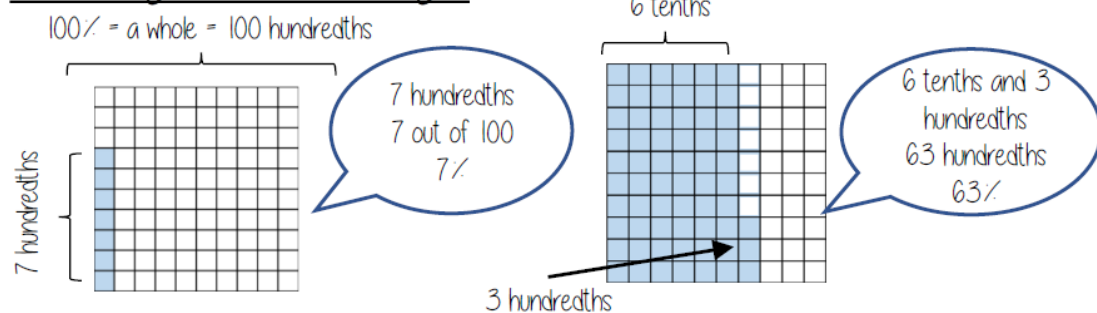
### On a number line



### Fifths



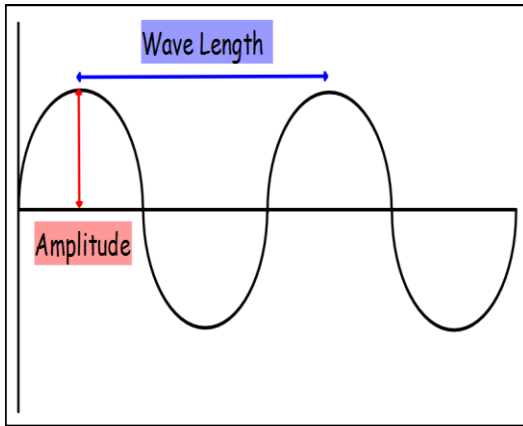
### Percentages on a hundred grid



**Luminous** - emits (gives out) light, like the Sun.

We can see objects because they reflect light, which then enters our eye.

**Light** is a type of **electromagnetic wave** and is therefore a **transverse wave**.



In transverse waves, oscillations occur **perpendicular** (at right angles) to the direction the wave travels.

**Wavelength** is the distance before the wave repeats – this is easiest to find by measuring the distance between peaks.

Light can pass through some materials:

**Transparent** – most light transmitted

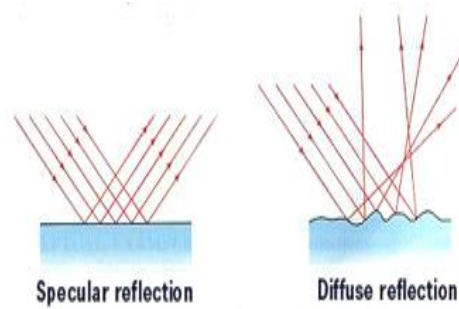
**Translucent** – some light transmitted

**Opaque** – no light transmitted

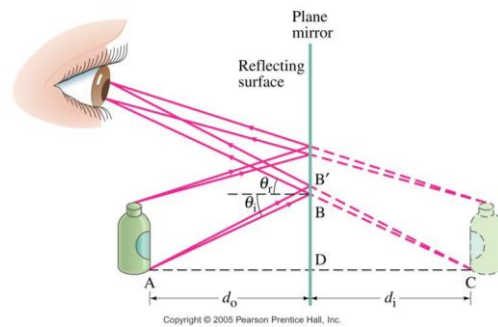
Light that is not transmitted is either **absorbed** or **reflected**.

If all the light is reflected in the same direction an image is formed – this is called **specular reflection**. This happens on smooth surfaces.

Rough surfaces cause **diffuse reflection** – the light scatters.



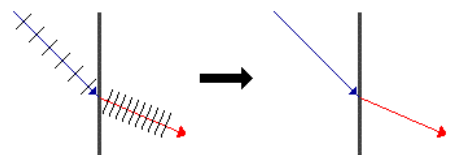
The ray model represents how light travels at different surfaces. Light always travels in straight lines.



Solid lines represent the actual path of light. Dotted lines represent where the light **appears** to have come from to the eye – virtual rays.

When light changes speed it changes direction – this is called **refraction**.

When the material light is travelling through changes, the speed it travels at will change based on the **optical density** of the material: more dense = slower light.



A ray will be used to depict the direction which a wavefront travels.

The **normal** is an imaginarily line at 90° to the surface. All angles are measured from the normal.

When light reflects, the angle of incidence is the same as the angle of reflection

When light refracts and slows down, it changes direction **towards** the normal.

When light speeds up, it changes direction **away** from the normal.

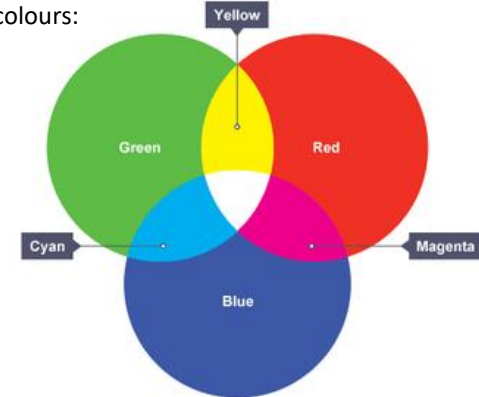
When light is absorbed, the energy is transferred into a different form – E.g. in photosynthesis, light energy is transferred into chemical energy in glucose. In solar panels, light is used to release electrons to form an electric current (electrical energy).

Light waves (and all EM waves) travel at the same speed in the same material.

Different wavelengths of light have different colours – red has the longest wavelengths, blue the shortest. Wavelengths longer than red form infrared radiation, shorter than blue, UV radiation.

White light is made up of all colours blended together.

White light can be split up into the colours of the spectrum using a prism. Different colours can be combined to make other colours:

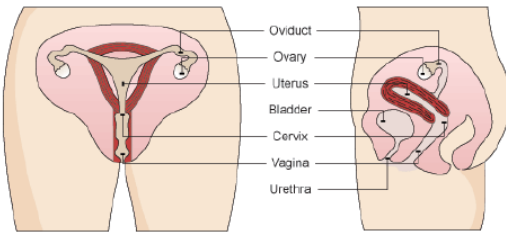


White materials reflect light of all colours.

Black materials reflect no light (black absorbs all light).

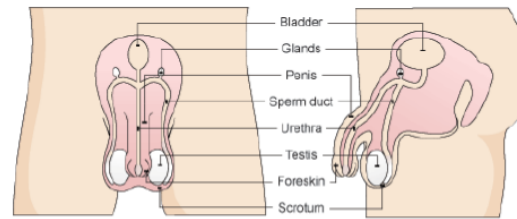
Coloured materials only reflect that colour and absorb the others. E.g. blue objects only reflect blue light. All other colours are absorbed.

**Female reproductive system**



Parts of Female Reproductive System	Functions of the part
Ovary	The organ where eggs (ova) are produced and where they mature ready for release each month
Oviduct	The small tube leading from each ovary to the uterus – the egg travels along here and fertilisation happens here
Uterus	The organ where an embryo grows into a foetus and eventually a baby
Uterus lining	The wall of the uterus
Cervix	A ring of tissue between the uterus and vagina; this helps keep a foetus in place in the uterus during pregnancy
Vagina	The organ that is entered by the penis during sexual intercourse; this is also part of the birth canal

**Male reproductive system**



Parts of Male Reproductive System	Functions of the part
Testes	The organ where sperm cells are made
Scrotum	The skin that holds the testes
Sperm ducts	The tubes that carry sperm from the testes to the urethra
Glands	These add liquids, including nutrients for the sperm, to the sperm cells from the testes to make semen
Urethra	The tube that carries either urine or semen out of the body through the penis
Penis	The organ that enters the vagina during sexual intercourse
Foreskin	The skin that protects the end of the penis

**Gestation**

After fertilisation of an ovum, a woman is pregnant. The embryo grows as cells divide and travels to the uterus. Ciliated cells in the oviduct help it to move to the uterus.

The embryo implants into the uterus wall, where it gets oxygen and nutrients from the mother's blood. As it grows bigger and cells become specialised, we call it a foetus. It grows a placenta and umbilical cord.

At the placenta, the foetus gets oxygen and nutrients from the mother's blood (but their blood does NOT mix). The foetus gets rid of waste like carbon dioxide into the mother's blood too.

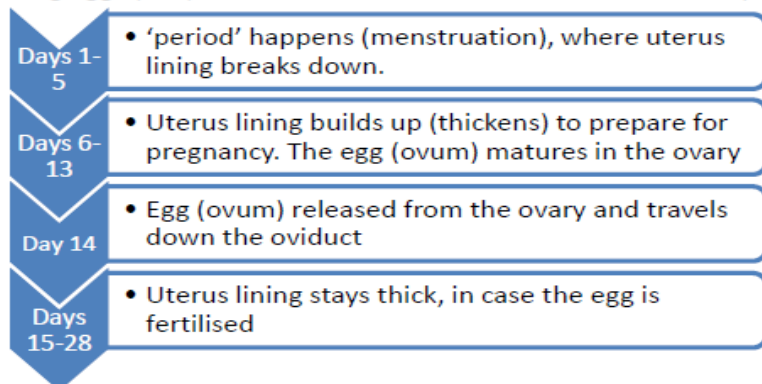
**Birth**

After about 40 weeks of pregnancy (for humans), the foetus is ready to be born.

- The muscles in the wall of the uterus contract (contractions)
- These contractions get stronger and faster – this is 'labour'
- After some time of labour, the amniotic sac breaks, which releases the fluid (the 'waters break')
- Contractions push the baby headfirst through the birth canal – through the cervix and out through the vagina

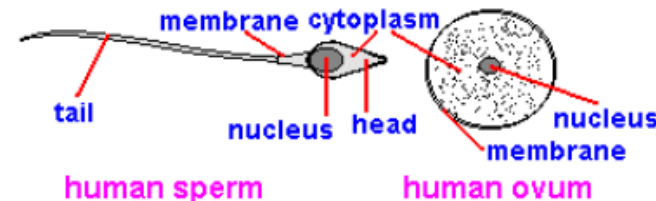
**The menstrual cycle**

The menstrual cycle prepares the female body for pregnancy by causing eggs (ova) to mature and be released. It lasts for 28 days.

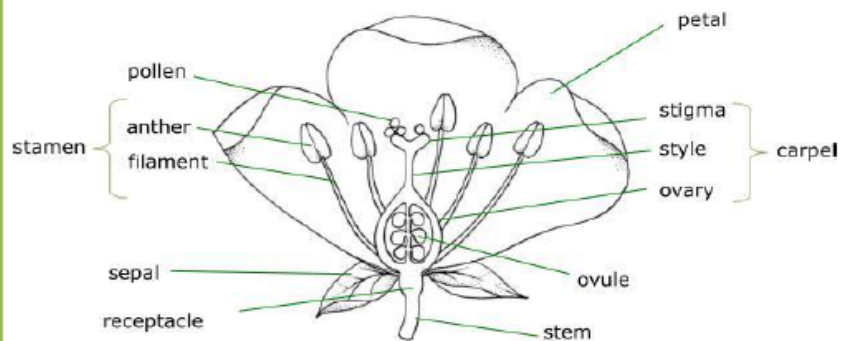


**Fertilisation**

Fertilisation is when a sperm cell and an ovum fuse. Sperm cells are released into the female reproductive system during sexual intercourse (ejaculation). Only one sperm cell breaks through the cell membrane and enters the ovum, and only the head enters. The nuclei fuse together, putting the mother and father's genetic information together. The fertilised ovum is now an embryo.



**Plant reproductive system**



Parts of plant Reproductive System	Functions of the part
Pollen	The male gamete (sex cell)
Stigma	Structure that the pollen sticks to
Style	Connects the stigma to the ovary
Ovary	Produces and stores ovules
Ovule	The female gamete (sex cell)
Anther	Produces the pollen
Filament	Holds the anther to the edge of the flower

**Seed dispersal**

The plant spreads the seeds out – this is called seed dispersal – so their offspring don't compete with them for light or soil nutrients.

Seeds can be dispersed in many ways:

- Animals – they eat the fruit and release the seeds in their waste
- Wind – for example sycamore seeds
- Water – for example coconuts

**Pollination**

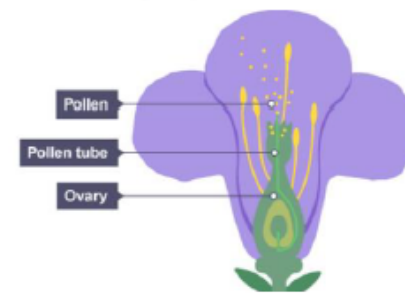
Pollination is the transfer of pollen from the anthers of one flower to the stigma of another flower (of the same species).

- In **wind pollination**, the wind carries the pollen from the anthers of one flower to the stigma of another
- In **insect pollination**, insects carry the pollen from anthers to stigmas. They go to flowers to get nectar for food (e.g. bees), and the pollen sticks to them so they carry it onwards.

**Fertilisation**

After pollination the pollen makes a pollen tube down the style to the ovary. The nucleus of the pollen cell travels down the tube to get to the ovum (egg cell) – when the cells join, this is fertilisation.

The cell made when the pollen and ovum fuse will become a seed, which can become a new plant. Plants then form fruits, often from the ovary walls.



Key terms	Definition
Physical change	A physical change means a change in the physical state of a substance for example whether it is a solid liquid or gas
Chemical change	A chemical change involves the breaking and forming of bonds. A new chemical (product) is formed afterwards
Conservation of mass	Matter involved in a physical or chemical change is the same before and after the change. Mass is the same before and after a physical change; the number of atoms in the reactants of a chemical reaction should stay the same after the chemical change

### Physical Change

In physical change, the matter's physical appearance is changed, but **no chemical bonds are broken or formed**.

For example, when water evaporates or boils from liquid water to gaseous steam, only the appearance of the water is changed – ice, water and steam all have the **chemical formula H<sub>2</sub>O**.

### Chemical Change

A chemical change involves the **formation of one or more new substances**. Different elements or compounds are present at the end of the chemical change.

We can observe reactions to see whether or not a chemical change has taken place, signs of chemical changes could be:

1. A colour change
2. Gas being made
3. An increase or decrease in mass
4. Formation of a new solid

Key terms	Definition
Chemical Bond	A chemical bond is a strong attraction between atoms.

Key terms	Definition
Metal Oxide	A compound where a metal is bonded to an oxygen.
Oxidation	A reaction where one of the reactants forms a bond with an oxygen atom
Decomposition	A reaction where one substance breaks down into 2 or more substances

### Conservation of Mass

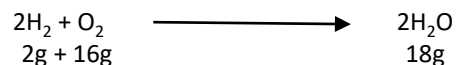
In both chemical and physical changes, mass is conserved. This means that the mass we start with must be the same as the mass we end with. **You cannot make or destroy atoms**.

#### Example of physical change:

If you start with 10g of ice, this will melt to form 10g of water, which will evaporate to form 10g of steam.

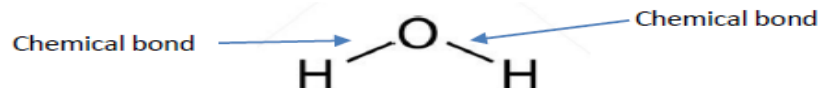
#### Example of chemical change:

If you start with 2 g of hydrogen and 16g of oxygen, you will make 2 + 16 = 18g of water



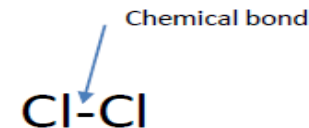
### Chemical bonds

A chemical bond is a strong attraction between atoms. Chemical bonds can only be broken in chemical reactions. Below shows a diagram of the bonding in water:



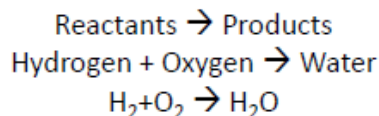
In water we say there is a chemical bond between the hydrogen and oxygen atoms. This chemical bond is strong and to break it requires energy.

Chemical bonds can also exist between atoms of the same element. For example a chlorine atom is always bonded to another chlorine atom.



### Word and Symbol equations

To represent chemical reactions we use word and symbol equations. These equations always have the reactants on the left and the products on the right:



### Chemical Formulae

To show how many atoms are bonded together in an element or a compound, scientists use chemical formulae.

A small number after an element symbol, tells you how many of that type of atom are in the substance.

For example:  $\text{Cl}_2$  This means that there are **2 chlorine atoms** chemically bonded together.

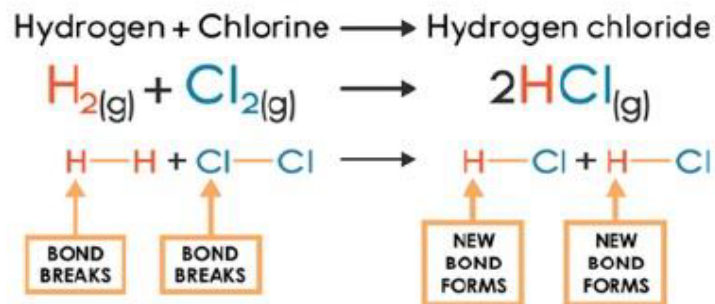
For example:  $\text{H}_2\text{O}$  This means there are **2 hydrogen atoms and 1 oxygen atom**, chemically bonded together.

For example  $\text{Fe}_2\text{O}_3$  This means that there are **2 Iron and 3 oxygen atoms**, chemically bonded together.

### Chemical reactions

In a chemical reaction we have reactants, these are the chemicals that you start with. In a chemical reaction we make **products**, this is what you will finish with.

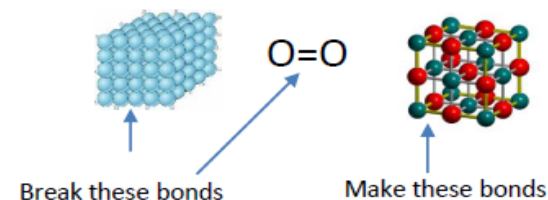
In a chemical reaction chemical bonds in the **reactant** particles are broken and new bonds in the **products** are made.



### The reaction of metals with oxygen

Metals react with oxygen to make **metal oxides**. For example magnesium reacts with oxygen to make **magnesium oxide**. This can also be written as a word equation:

Magnesium + Oxygen  $\rightarrow$  Magnesium Oxide



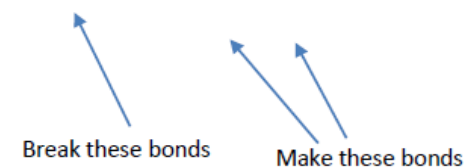
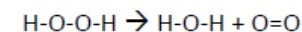
In this reaction the bonds between the magnesium atoms and the oxygen atoms are broken. Bonds are then formed between the magnesium and the oxygen atoms. We call these chemical reactions **oxidation reactions**, as the magnesium has gained an oxygen.

### Decomposition Reactions

In some chemical reactions 1 substance can break down to form 2 new substances. We call these reactions decomposition reactions.

An example of a **decomposition reaction** is when hydrogen peroxide (formula  $\text{H}_2\text{O}_2$ ) breaks down into water and oxygen.

Hydrogen peroxide  $\rightarrow$  Water + Oxygen



**Using Sound Waves**

We can hear sound waves due to the adaptations of our ears.

1. The **eardrum** vibrates thanks to a sound wave hitting it.
2. The eardrum vibrates tiny bones in the inner ear.
3. These bones cause the **cochlea** to vibrate, which in turn vibrates the **hair cells** inside.
4. These vibrations produce electrical impulses that travel along the **auditory nerve** to the brain, where we interpret the sound.

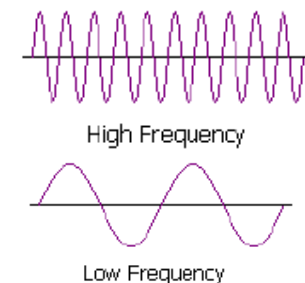
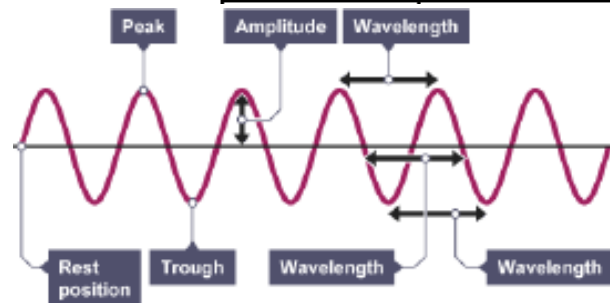
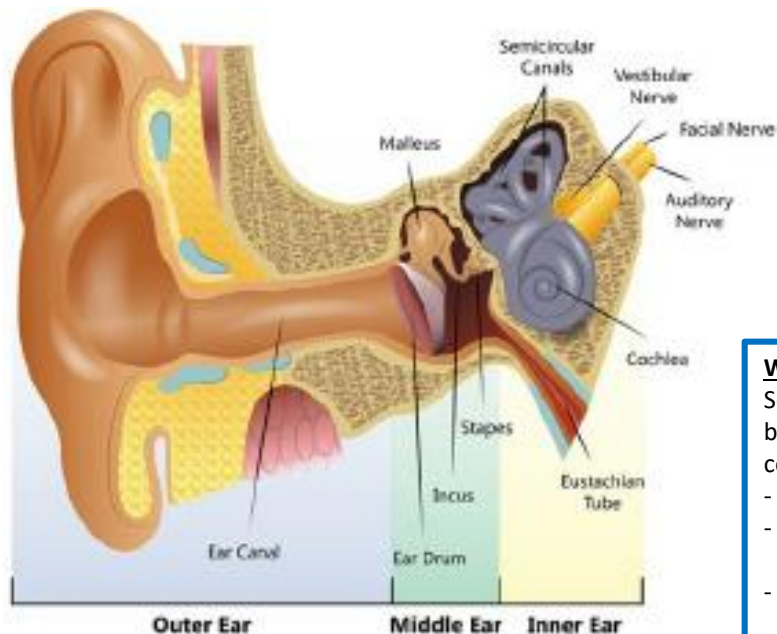
Sounds can be produced by **loudspeakers**, which are simply vibrating cones. The pattern and frequency of the vibrations (oscillations) determines the sound.

**Microphones** have a vibrating **diaphragm** inside, which transfers the sound wave into an electrical signal in a circuit.

Humans can hear sounds with frequencies from **20 Hz to 20 000 Hz**. Sound with frequencies higher than 20 000 Hz is called **ultrasound**. Ultrasound is very useful, for example:

- Prenatal scans of unborn children
- Ultrasonic cleaning of fragile objects
- Breaking up deposits called kidney stones to prevent harm.

Key Terms	Definitions
transmission	The travelling of a wave. We say a wave is 'transmitted' through a medium.
incident wave	A wave heading towards the boundary between media.
reflection	When a wave bounces back from a boundary between media at the same angle as which it hit the boundary.
absorption	When the energy a wave transfers goes into heating a material.
refraction	When a wave changes direction at the boundary between media due to a change in speed.
diffraction	The spreading out of a wave after it passes through a gap.
superposition	The adding up or cancelling out of waves that travel together.
ultrasound	Sound too high pitched (too high frequency) to hear
hertz (Hz)	The unit for frequency, meaning 'waves per second'



**Waves through matter**

Sound relies on transfer of energy through particles. One set of molecules start vibrating and bump into another set of molecules, which start vibrating and bump into another set, etc. This continues until the energy runs out.

- Speed of sound is fastest in solid, then liquids, then gases.
- This is due to density (how tightly packed the particles are): the closer together, the easier it is to pass energy from one particle to the next.
- Intensity of sound also differs: waves with the same amplitudes sound different in gas and water, so decibels in air will not be the same as decibels in water.

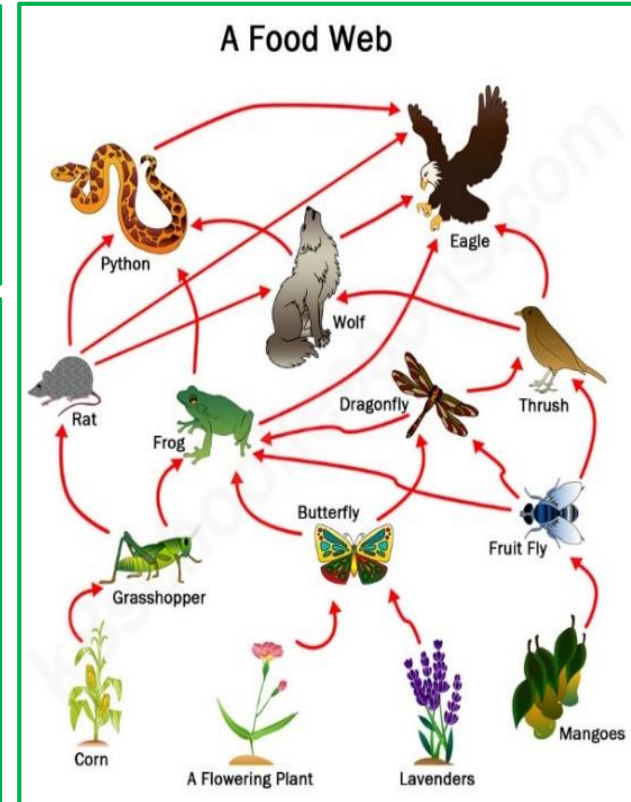


Key Terms	Definitions
Ecosystem	Interactions of a community with the non-living parts of the environment
Biodiversity	The range of species living in an ecosystem. Important due to needing a range of food sources so that organisms don't depend on just one source
Population	Number of individuals of one species living in an ecosystem
Habitat	Place where an organism lives
Food chain	The feeding relationship between organisms: an example of dependence. Each organism depends on another for its nutrients
Food web	A network of connecting food chains

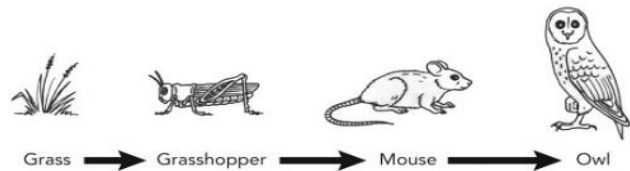
In a food web:

- Producers make their own food
- Primary consumers eat producers
- Secondary consumers (e.g. frog) eat primary consumers
- Tertiary consumers (e.g. Python) eat secondary consumers

Food webs give a representation of the dependencies within an ecosystem. If the amount of one organism changes (due to disease, habitat destruction etc.) it will have a knock on effect on other species numbers. For example, if a disease killed many frogs, there would be more grass hoppers and butterflies because they won't be eaten as often. There will also be more rats because they won't have as much competition for the grasshoppers.



**A Food Chain**



**Food Chains**

Food chains start with a **producer** (usually a plant) which captures energy from the Sun by **photosynthesis** and uses it to make glucose (sugar). Glucose is the source of energy for all organisms through **respiration**. The producer will use the energy from the glucose to grow. When the plant is eaten, some of the energy is left in the plant is transferred to the grasshopper, which will also use the energy for growth and also movement. When the mouse eats the grasshopper, some of energy is transfer to it to use. Changes in the amounts of organisms at each stage of the food chain will affect all the other organisms in the chain.

**Plant population** in an ecosystem is affected by:

- Rain
- Sun
- Minerals
- Space to grow

**Animal population** in an ecosystem is affected by:

- Food
- Habitats
- Mates
- Water
- Disease

Most animals eat different things and are involved in different food chains. These food chains can be put together to form a **food web**.

Organisms have an impact on their environment through their behaviour and the changes to the environment will affect their behaviour.

For example, cows will eat all the plant life. This will mean the topsoil gets washed away causing habitat loss for other organisms. It will also get washed into the water affecting water supply for all organisms. Predator-prey relationships have the largest impact on organisms.

**Human Impacts on the Environment**

- Deforestation
- Buildings and roads
- Dams and reservoirs
- Hunting

The growth of the human population also affects environments and the developed technology that comes with it.

- More land is needed for farming
- More factories mean more pollution
- Organisms are moved out of their natural environment and have big impacts in new ones (e.g. Japanese knot weed)
- Many organisms are now endangered

These impacts reduce **biodiversity** – the amount of different species in an environment and the amount of each species.

There are three levels of risk for an organism of extinction:

- Not threatened
- Vulnerable
- Endangered
- Critically endangered

We protect endangered species through **conservation**. This can involve:

- Observation of species
- Analysis of environment
- Captive breeding
- Habitat creation
- Pest control
- International agreements to protect species

There are often a range of people involved in monitoring the environment of endangered species and implementing protection.

As a consequence of the growing human population, more food needs to be grown. To help this, more **fertilisers** and **pesticides** are used to help grow more crops. These chemical can introduce toxins into the food chains.

Toxins can enter food chains from:

- Pesticides and herbicides
- Water run off from cities
- Soft mud absorbs toxins that plants then absorb
- Air pollution

These toxins will accumulate as they are passed up a food chain. Plants will absorb a little of the toxin, but herbivores will eat many plants. Organisms further up the food chain will accumulate the toxins gathered in those further down because there are less predators. This is called **bioaccumulation** and can lead to predators becoming extinct.

Key Term	Definition
Interdependence	The way organisms interact with each other. Also known as <b>sybiosis</b>
Commensalism	One organism benefits, the other doesn't
Mutualism	Both organisms benefit
Parasitism	One organism benefits at the cost of the other
Niche	Role of an organism in the ecosystem (e.g. predator, prey, decomposer)
Competition	Where two or more organisms compete for the same resource: the organisms better able to access the resource will thrive. Often the driving force of evolution
Specialism	Where an organism is specialised for accessing resources from one source

If the amount of prey increases, the predator numbers will all increase slightly afterwards.

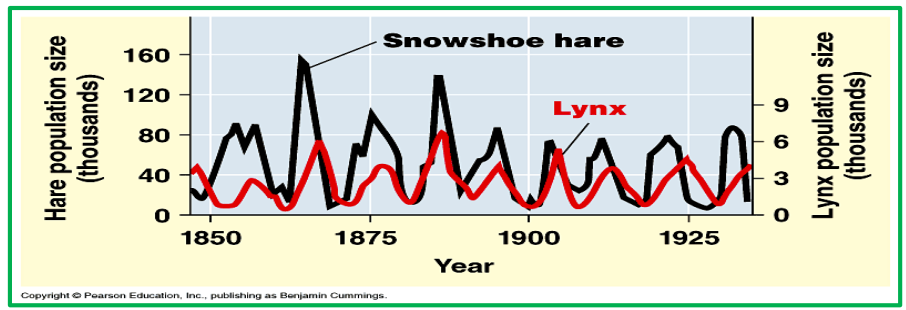
When the predator numbers increase, the prey numbers will decrease.

- There is more prey than predators
- The numbers of predators lags behind

Predators form an important part of food webs because:

- They keep the negative effects of prey in check
- They encourage prey to move around to give plants more time to grow

Predators are also useful as a control for pests for human crops, for example lady birds can be introduced as a control for greenfly.



<b>Hydrological Cycle</b> - the sequence of conditions through which water passes from vapor in the atmosphere through precipitation upon land or water surfaces and ultimately back into the atmosphere as a result of evaporation and transpiration.		
1	Tributaries	A river or stream flowing into a larger river.
2	Inputs / outputs	Water coming into the system vs water coming out of the system.
4	Precipitation	All forms of moisture that reach the earths surface for example rain, sleet, snow etc.
5	Storage	Water stored in the system in lakes, rivers, puddles etc.
6	Ground water storage	The storage of water underground in permeable rock strata.
7	Rock strata	Different layers of rock.
8	Water table	The level below which the ground is saturated with water.
9	Saturated	Holding as much water or moisture as can be absorbed.
10	Ground water flow	The deeper movement of water through underlying permeable rock strata below the water table.
11	Infiltration	The downward movement of water into the soil surface.
12	Percolation	The gravity flow of water within the soil.
13	Surface run off	The movement of water over the surface of the land, usually when the ground is saturated.
14	Geology	The science of the physical structure and substance of the earth, their history and the processes which act upon them.
15	Evaporation	The transformation of water droplet into water vapor by heating.
16	Transpiration	Evaporation from plant leaves.
17	Evapotranspiration	The loss of water from drainage basin into the atmosphere from leaves of plants and loss from evaporation.

<b>Erosion</b> – the wearing away of rock and soil found along the river bed and river bank		
18	Hydraulic action	The force of the river against the banks can cause air to be trapped in cracks and crevices. The pressure weakens the banks and gradually wears it away.
19	Abrasion	Rocks carried along by the river wear down the river bed and banks.
20	Attrition	Rocks being carried by the river smash together and break into smaller, smoother and rounder particles.
21	Solution	Soluble particles are dissolved into the river.
<b>Transportation</b> – the river picking up and carrying material as it flows downstream.		
22	Suspension	Fine, light material carried along in the water.
23	Saltation	Small pebbles and stones bounced along the river bed.
24	Traction	Large boulders and rocks are rolled along the river bed.
25	Deposition	When a river loses energy it drops its load or deposits some of the material it is carrying.
26	Velocity	Speed of the river measured in meters per second.

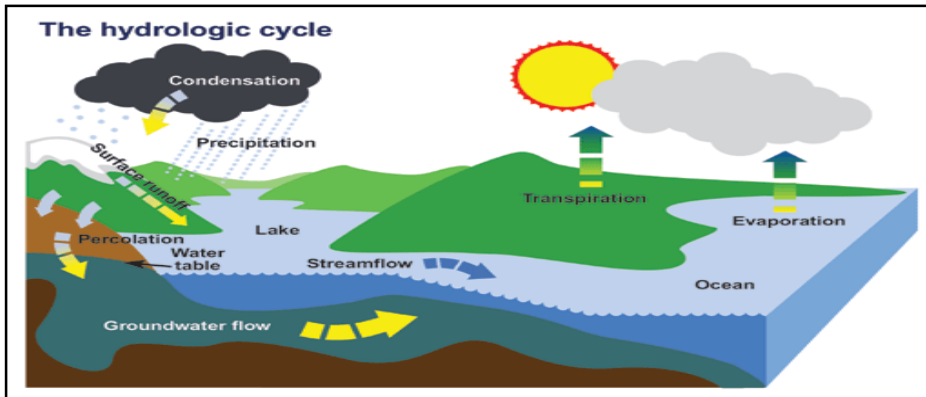


Diagram 1 - River erosion processes:

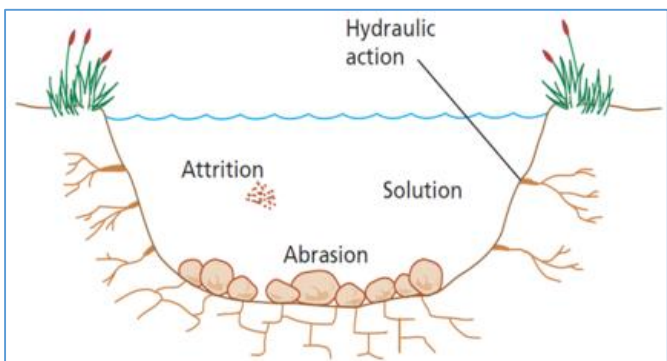


Diagram 3 - Formation of an oxbow lake:

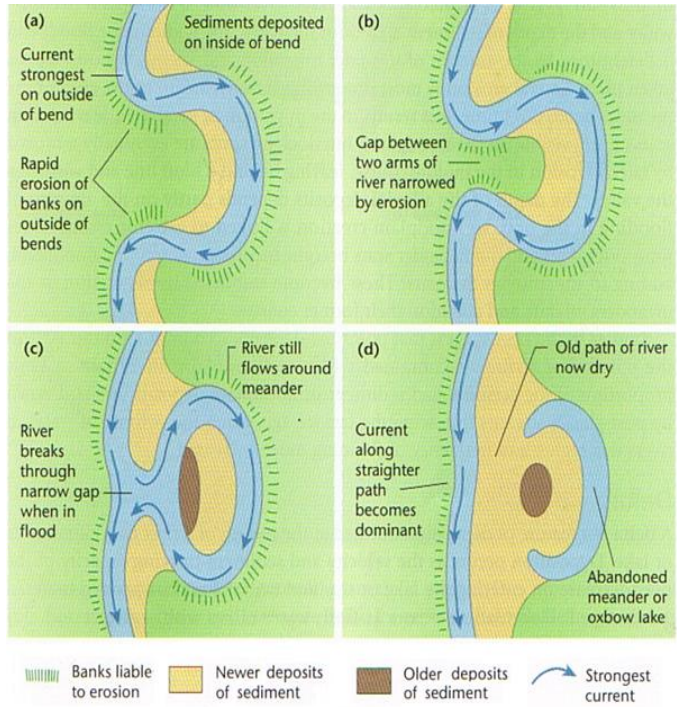


Diagram 2 - Long and cross profiles of a typical river:

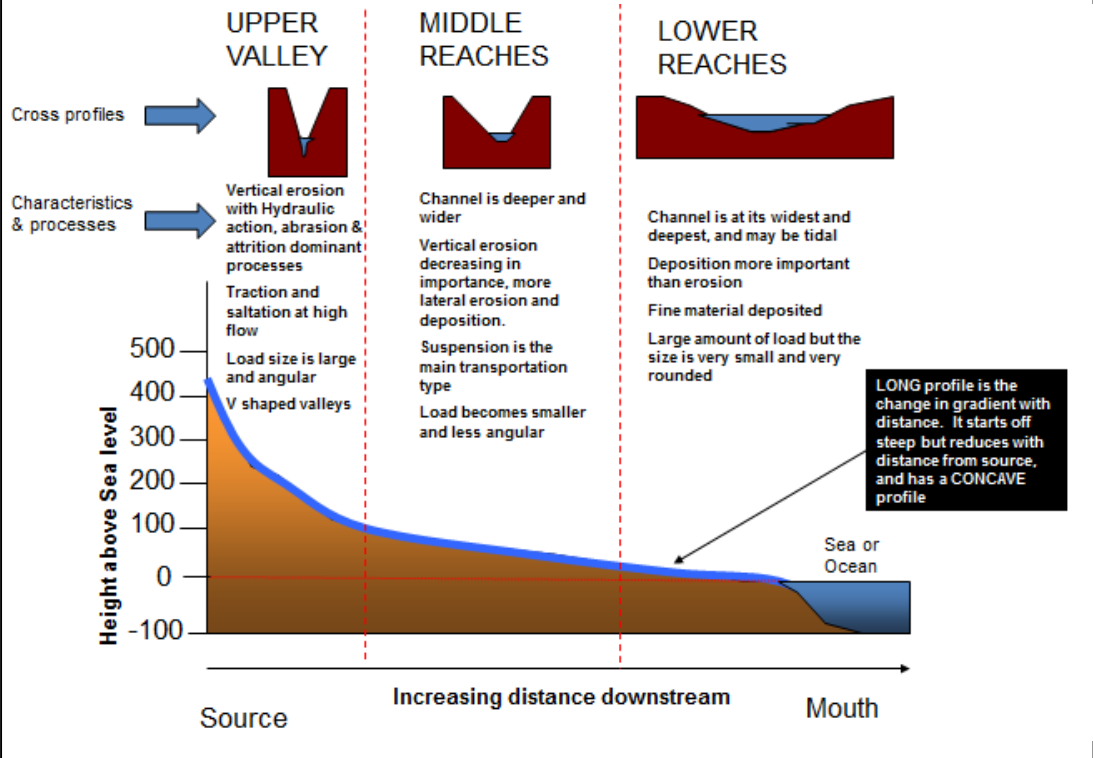
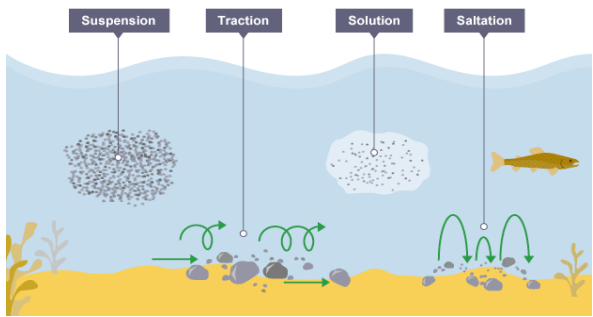


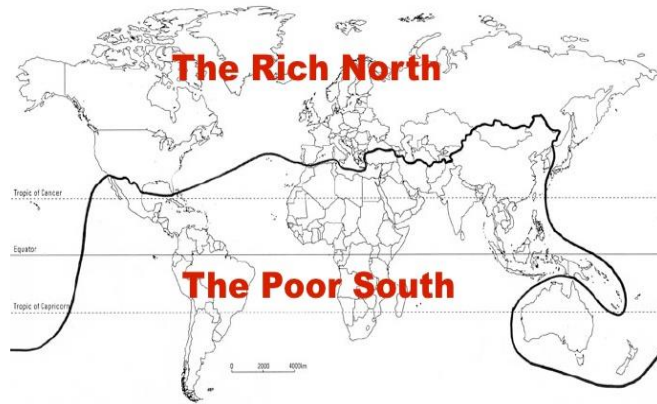
Diagram 4 - River transport processes:



1	Population density	How many people per 1km.
2	Densely populated	Highly populated region.
4	Sparsely populated	Few people in a region.
5	Distribution	Pattern of where things are located.
6	Oil / gas fields	Oil and gas are fossil fuels. Created from prehistoric plants and animals. Extracted from the ground and sea bed.
7	Oil / gas pipes	Pipes that transport oil.
8	Vessel	A ship
9	Piracy	The practice of attacking and robbing ships at sea.
10	Holistic approach	Takes into account a range of social, economic and environmental factors.
11	Composite	Made up of different factors.
12	Social	To do with people and society.
13	Economic	Anything connected to money.
14	Environmental	Anything connected to natural landscapes.
15	Life expectancy	The average amount of time a person lives to.
16	Fertility rate	The average number of children a woman will have in her lifetime.
17	Infant mortality	Average number of babies who will die before they are 1 year old per 1000 live births.

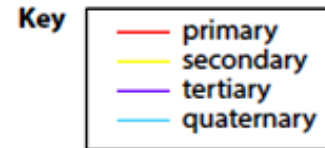
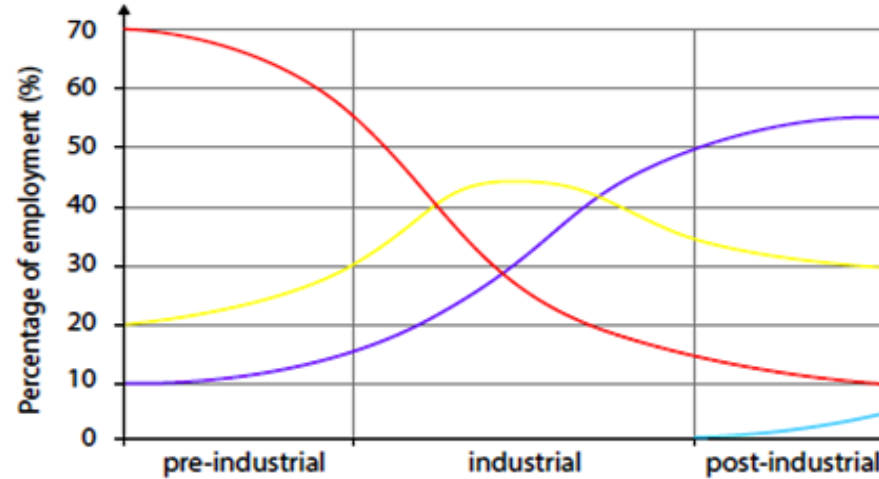
18	Primary	Raw materials taken from the ground or sea. Jobs include farmer, fisherman, miner.
19	Secondary	Raw materials manufactured into a different product. These are factory jobs.
20	Tertiary	Supplying a service. Jobs include shop assistant, teacher, doctor, bar staff.
21	Quaternary	Research and development. Inventing a new product. Jobs include scientists.
22	Industrialization	When a mainly agricultural economy becomes a mainly manufacturing economy.
22	Agriculture	Farming
23	Transnational Corporation (TNC)	A company that has operations in more than one country.
24	Megacity	City with a population of more than 10million people.
25	Push factors	Negative factors pushing people away from an area.
26	Pull factors	Positive factors attracting people to an area.
27	Informal sector	The government doesn't know you are working. 'employees' don not have a contract or pay tax. Very low wages, low skills and dangerous work.
28	Formal sector	The government knows you are working. You have a contract and pay taxes. Jobs are usually more highly skilled.
29	Natural increase	When the number of births outnumber the number of deaths.
30	Slums	Illegal settlements.
31	Gross domestic product (GDP)	Total value of goods and services produced by a country in a year.

Diagram 1 – Theories of development (The Brandt Line)



In 1980 the Brandt Report was published by Willie Brandt. He divided the world into two the Rich North (Europe, North America, Japan and Australia) and the Poor South (Africa, South America and Asia). However, since this was written much has changed and we now have “emerging countries” like Brazil, Mexico, India and China that are increasingly becoming more economically powerful.

Diagram 1 - Clark Fisher Model of Development



- Mid 1990s produced a theory of development.
- Low economy countries were dominated by the primary industries (farming and mining)
- Middle income countries were dominated by the secondary sector (manufacturing) and
- High income countries were dominated by tertiary and quaternary sector jobs i.e. banking, legal services and leisure.
- As society develops and receives investment people move away from subsistence farming and primary sector jobs.
- They use money to mechanise farming
- During the industrial period people begin to work in factories.
- With an improved education more people can then work in the tertiary sector and higher wage demands means factories move to emerging countries.

Table 1 - How does Nigeria compare to the UK?

Development indicator	Nigeria	UK
Total population	190 000 000	66 000 000
GDP per capita	\$1,968 US	\$39 720
Life expectancy	55.4 years	80.9 years
Literacy Rate	65.1%	99%
Infant mortality rate	201 per 1000	3 per 1000
Fertility rate	5.67	1.8
Average age	18.3 years	40 years

Key Terms		
1	Crusades	Religious wars fought over control of the Holy Lands.
2	Tyrant	A ruler who refuses to share their power, and governs in a cruel and oppressive way.
3	Excommunication	Expulsion from the Catholic Church by the Pope
4	Magna Carta	A series of promises, meaning 'the Great Charter', the Barons forced King John to sign in 1215.
5	Angevin Empire	Term to describe England and France under the rule of Richard and John.
6	Great Council	Assembly of church leaders and wealthy landowners who met with the king to discuss national affairs.
7	Physician	A term for a doctor
8	Four Humors	Theory about the cause of illness developed by Greek doctor Hippocrates. The four were: Phlegm, Yellow bile, Black Bile and Blood.
9	Black Death	A plague that devastated Europe in the fourteenth century.
10	Buboes	Onion shaped swellings that were usually the first symptom of the Black Death.
11	Miasma	Theory that disease was caused by a poisonous cloud of 'bad air'.
12	Bubonic plague	The most common type of plague, named after the buboes and caused by the spread of bacteria.
13	Pneumonic plague	A more deadly type of plague that attacked the lungs.
14	Bleeding	Draining excess blood from a patient that is considered poisonous to the body.
15	Lancing	Using a sharp tool to 'pop' a boil or bubo.
16	Flagellant	A religious sect that punished themselves for sins by whipping their bodies.
17	Revolt	To take violent action against an established government or ruler; rebel.
18	Peasants' Revolt	Major uprising across England in 1381. Yeomen - a new class in medieval England; commoners who farmed their own land.
19	Poll Tax	Everyone (rich and poor) paid the same amount
20	Hung, drawn quartered	Punishment for treason. Victims are hanged, cut down and body cut into 4 quarters and spread across the kingdom.

Key people		
1	<b>Richard I</b>	-Significant Christian leader and British King (known as Richard Lionheart). -Known for being a talented military leader, a sensible decision maker and skilled peacemaker.
2	<b>King John</b>	-Inherited the <u>Angevin Empire</u> (England and France) from Richard I (his brother). -His brother had left him problems in France to deal with and lots of Debt, by 1215 his Barons had had enough and declared a war on him.
3	<b>Richard II</b>	-King at 10years old (His uncle helped him rule). -After the Black Death he implemented a <u>Poll Tax</u> to raise money for a war with France, this was unpopular and led to the <u>Peasant's Revolt</u> .
4	<b>Wat Tyler</b>	-Leader of the peasant's revolt. He met with Richard II on 15 June 1381 and was killed in the meeting leading to the end of the peasants' revolt.
5	<b>Simon Sudbury</b>	Archbishop of Canterbury from 1375 until his death, and in the last year of his life Lord Chancellor of England . Killed in the Peasants' Revolt.

Key events		
1	The Black Death, 1348	A plague wipes through Europe and is introduced to England via Dorset. Approximately 1/3 of the population die from this disease and this allows for a change in the typically hierarchical feudal society in England.
2	The Peasants' Revolt , 1381	Having lost such a large section of the population during the Black Death, landowners found it very difficult to find enough peasants to work their land. Peasants knew they were in demand and began to demand higher wages. King Edward III tried to stop this with the <u>Statute of Laborers (a law)</u> which fixed peasant wages at the pre-Black death rate. The peasants' revolted and challenged feudal England.

Key Terms		
1	Catholic	A form of Christianity, followers of the Roman Catholic
2	Church of England	The Christian church in England. The king or queen is head of this church
3	Protestant	A member or follower of any of the Western Christian Churches that are separate from the Roman Catholic Church. They broke away from the Church during the Reformation.
4	Act of Supremacy	A law which made Henry head of the church in England
5	Heir	A person who is next in line to the throne
6	Reformation	Also called Protestant Reformation, the move of part of the church away from the authority of the Pope. Its greatest leaders undoubtedly were Martin Luther and John Calvin.
7	Dissolution of the Monasteries	The closure of English Monasteries by Henry VIII in 1536-1540. Monasteries were run by the catholic church and were homes for Monks and Nuns. They also provided hospital care and charity to the local people.
8	Heretic	A person with different religious beliefs to the country's government
9	Illegitimate	A monarch with parents were not married when they were born. This means they are unable to claim the throne.
10	Excommunicate	To exclude someone from the Catholic Church
11	Transubstantiation	A belief held by Catholics that, when a priest blesses the bread and wine during mass, they transform into the physical body and blood of Christ.
12	Annulment	Declaration that something is invalid.
13	Coffer	A strong box that is used to store money.
14	Counter-Reformation	Reforms to the doctrine and beliefs of the Catholic church in response to the Protestant reformation starting in 1545.
15	Regent	A person appointed to rule, normally while a monarch is abroad, too young or ill.

Key people		
1	Henry VII	First king of the Tudor dynasty, father of Henry VIII and victorious at the War of the Roses.
2	Henry VIII	King of England famed for having six wives. Ruled for 38 years and had 3 of his children rule England.
3	Mary I	First daughter of Henry VIII. Became queen after her brother Edward VI died. Nicknamed 'Bloody Mary' after burning protestants at the stake.
4	Elizabeth I	The youngest daughter of Henry VIII. Became a powerful queen of England who ruled for 45 years.
5	Edward VI	The son of Henry VIII. A sickly boy who ruled England from 9 years old, however was sickly and died young.
6	Catherine of Aragon	Henry's first wife. Divorced after she failed to produce a son/male heir to the throne.
7	Anne Boleyn	Henry's second wife, executed for treason. Mother of Elizabeth I.
8	Martin Luther	Former Monk who posted his 95 theses criticising the catholic church.

Key events – Henry's break with Rome and the Reformation	
1. Succession	Henry desperately needed an heir to ensure a peaceful and stable succession. By the late 1520s he no longer believed that his wife Catherine of Aragon could provide him with a son.
2. Love	Henry had fallen in love with one of his wife's ladies in waiting Anne Boleyn. Anne did not want an affair but marriage.
3. Power	Henry's ministers had been unable to get the Pope to agree to grant the divorce. This was humiliating. Henry believed that Kings should have power over the church in their own country.
4. Money	The Church was extremely wealthy because of tithes donations and the amount of land they owned. Henry was quite poor from his wars with France and needed money to fight future wars.
5. Religious beliefs	Some people criticised the Catholic Church for being corrupt. These were known as Protestants. Many of the supporters of Anne Boleyn were Protestant.





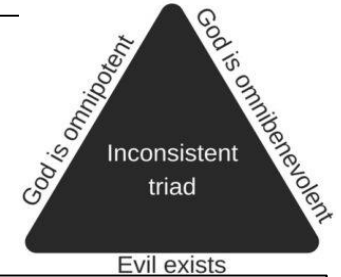
Vocabulary	
<b>Evil</b>	A cause of human suffering.
<b>Suffering</b>	Is the bearing or undergoing of pain or distress.
<b>Moral evil</b>	The acts of humans which are considered to be morally wrong
<b>Natural evil</b>	natural disasters, such as earthquakes or tsunamis.
<b>omnipotent</b>	The all-powerful, almighty and unlimited nature of God.
<b>Omnibenevolent</b>	All-loving and infinitely good – a characteristic often attributed to God.
<b>Free-will</b>	The ability to make choices voluntarily and independently. The belief that nothing is predetermined.
<b>Sin</b>	Any action or thought that goes against God
<b>Original sin</b>	The tendency to sin in all human beings, believed to be inherited from Adam, 'the first man'.
<b>Theodicy</b>	A religious explanation for the existence of both God and evil and suffering.
<b>Inconsistent triad</b>	Three ideas but only two of them can be true
<b>Reconciled</b>	The idea that people should make up after an argument and be restored in their relationship.
<b>Philosopher</b>	A person who studies wisdom.

The Greek philosopher **Epicurus (342-271 BCE)**

Epicurus claimed that if God cannot stop evil then he is not all-powerful (omnipotent). He then argued that if God can prevent evil but does not, then God is not good or all-loving. He linked these two points together, claiming that if God is all-powerful and good, then evil would not exist. Finally, human experience is that evil does exist. Therefore Epicurus concluded that God must not exist.

The inconsistent triad

The problem of evil can be regarded as an 'inconsistent triad' – in other words, three ideas but only two of them can be true. As there is clear evidence and experience of evil, either God is not all-powerful (i.e. He cannot stop evil) or God is not loving and good (i.e. He does not love us or care enough to stop evil).



Christians may give one or more of the following answers:

- God has given people **free will**. He has shown people how they should obey the **Ten Commandments** and follow Jesus' life and teaching. It is then up to human beings to decide whether or not to follow God's instructions.
- God has a plan for people's lives that they may not always understand. This may include evil and suffering but Christians should trust and have faith in God's plan.
- God wants people to follow the example of Jesus and help those who are suffering. God must have a reason for allowing evil and suffering but the reason is beyond human understanding.
- Christians also pray for those who suffer and try to help them.
- Evil and suffering in this life is a preparation for Heaven. Evil and suffering give people a chance to become better people and improve their souls. They believe that God will reward them in Heaven.

**Irenaeus' soul-making theodicy**

Irenaeus stated that God made humans imperfect and is therefore partly responsible for the existence of evil. To make humans perfect would take away their freedom to live in accordance with God's will. By creating imperfect humans, individuals are given the chance to develop and grow through a soul-making process into "children of God". Irenaeus stated that eventually good will overcome evil and suffering.

**Augustine's soul-deciding theodicy**

Augustine believed that all humans were created perfect and that they were given **free will**. However humans use that free will to turn away from God and choose to sin. God foretold that this fall would happen and therefore sent his son, Jesus Christ, so that humanity may be **reconciled** with God. Augustine's **theodicy** bases the origin of evil and suffering on humanity and takes that responsibility away from God.

**Job**

In the Old Testament there is a book call Job about a man named Job who was described as being 'a good man, careful of not doing anything evil', and was faithful to God. Job had a wife and many children, along with land and animals. Satan was given permission by God to test Job's faith. Job lost many people and things, but still remained faithful to God. Job also became poor in health but still remained faithful to God. Even though others told job to turn his back on God, he did not. Job passed the test by remaining faithful to God. He was then rewarded by God, Job was blessed with double the things he had lost.

Christians believe the story of Job teaches that often humans go through suffering as a test of their faith.

Judaism - History and Belief	
<b>synagogue</b>	The place where Jews meet. It literally means 'assembly'. The leader of a synagogue is called a <b>rabbi</b> .
<b>Tanakh</b>	The Jewish holy book. It contains the <b>Torah</b> (law) which is the most important holy text for Jews. It also contains the nevi'im (prophets) and Ketuvim (writings). It was written in <b>Hebrew</b> .
<b>covenant</b>	An agreement or promise between God and people.
<b>patriarchs</b>	The three founding fathers believed to be physical & spiritual ancestors of all Jews (Abraham, Isaac and Jacob).
<b>Promised Land</b>	An area of land given to the Israelites by God in the Torah.
<b>The Temple</b>	The building in Jerusalem where Jews worshipped before synagogues. It was destroyed by the Babylonians in 586 BCE and rebuilt after Jews returned from the Babylonian exile. The Romans destroyed the Second Temple in 66 CE. <b>The Western Wall</b> is all that remains today and is a popular pilgrimage site.
<b>Ark of the Covenant</b>	The box that housed the two tablets of stone on which the original Ten Commandments were written. It was kept in the <b>Holy of Holies</b> in the first Temple, but went missing during the Babylonian exile.
<b>Messiah</b>	A word used to refer to a future king descended from King David who would return Jews to Israel, bring peace, build the Third Temple and have a son who would be his heir. Some Jews are still waiting for the Messiah to come.
<b>yad</b>	A pointer used to read the Torah in the synagogue.
<b>Mitzvot</b>	Jewish laws (there are 613 in total); the singular is mitzvah.
<b>Talmud</b>	A collection of teachings from rabbis giving more information about the Torah.
<b>kashrut</b>	Jewish food laws.
<b>kosher</b>	Food that is acceptable for Jews to eat according to kashrut; the word literally means 'fit'.
<b>trefah</b>	Food that Jews are forbidden to eat.
<b>Ark</b>	A cupboard in a synagogue where the handwritten Torah scrolls are stored.
<b>Ner tamid</b>	A symbolic light in front of, or above the Ark; it means everlasting light.
<b>bimah</b>	The platform in the synagogue where the Torah scrolls are read from.
<b>The Shema</b>	The most important prayer in Judaism. Often found in a small box attached to doorposts in Jewish homes known as a <b>mezuzah</b> .
<b>kippah</b>	A head covering worn during prayer.
<b>tallit</b>	A shawl with 613 tassels worn during prayer to symbolise being wrapped in God's will.
<b>tefillin</b>	Two boxes worn during prayer, which contain verses from the Torah.

Judaism in the Modern World	
<b>Shabbat/Sabbath</b>	A day of rest once a week. It literally means 'ceasing'.
<b>Pesach/Passover</b>	A festival when Jews remember the Angel of Death passing over the houses of the Israelites and freedom from slavery.
<b>Seder Meal</b>	A symbolic meal shared by families during Pesach/Passover.
<b>Rosh Hashanah</b>	The first day of the Jewish new year; 'Day of Judgement'.
<b>shofar</b>	A ram's horn blown on Rosh Hashanah to remind Jews that God will judge their actions.
<b>Yom Kippur</b>	Day of Atonement; the holiest day of the year where Jews confess their wrongdoing.
<b>circumcision</b>	The removal of a baby boy's foreskin after eight days as a sign of God's covenant with Abraham.
<b>mohel</b>	Someone who is medically and religiously qualified to perform a circumcision.
<b>Bar Mitzvah</b>	A ceremony for boys at the age of 13; it literally means 'son of the commandments'.
<b>Bat Mitzvah</b>	A ceremony for girls at the age of 12 or 13; it literally means 'daughter of the commandments'.
<b>Seven blessings</b>	Blessings recited by the rabbi and congregation at a wedding ceremony.
<b>Pikuach Nefesh</b>	The principle that nearly any religious law can be broken in order to preserve human life.
<b>persecution</b>	Discrimination against people because of their beliefs.
<b>anti-Semitism</b>	Persecution of Jewish people.
<b>Holocaust</b>	The killing of six million Jews by Nazi Germany. Jews sometimes call this the Shoah, meaning calamity or catastrophe.
<b>Free will</b>	The ability to choose how to act.
<b>Hester panim</b>	The idea of Orthodox rabbi Eliezer Berkovitz that God 'hid his face' during the Holocaust because he could not interfere with free will.
<b>Israelis</b>	People who live in Israel and are mainly Jewish.
<b>Palestinians</b>	People who live in an around the state of Israel and are mainly Muslims.
<b>Zionism</b>	A Jewish movement that originally aimed to establish, and now aims to continue, the Jewish state of Israel.



**Box 3:**

**One God:**

- The Jewish belief about God can be put very simply. There is only one God.
- He created the world and He sees and knows everything.
- God gave them his laws for two reasons:
  1. So that they would know how to worship Him;
  2. So that they would be able to show other people how to live in a kind and caring way.
- Jews believe that this relationship with God will continue only so long as they remain faithful to Judaism.

**Box 4: Groups within Judaism**

<b>Orthodox Jews (includes Hasidic Jews)</b>	<b>Conservative Jews</b>	<b>Reform Jews &amp; Liberal Jews</b>	<b>Secular Jews</b>
Jews who believe in maintaining the traditional beliefs and practices of Judaism and the laws given by God.	Jews who preserve rituals and traditions but are more flexible in interpreting Jewish laws than Orthodox Jews.	Two different groups within Judaism who share the beliefs that Judaism can change or modernise over time.	Jews who are born into the religion, but do not believe in God.

**Box 5:**

**The Messiah:**

1. Jews look forward to the coming of the Messiah, God’s messenger of peace.
2. Then everyone will obey God’s commandments.
3. When this happens, the world will be at peace.
4. Christians believe that Jesus was the Messiah. But Jews look at the world today and say that they are still waiting.
5. They are waiting for a human being who will be so special that he will bring everyone together.
6. There are different ideas of what the Messiah might be like, and some Jews see this as a spiritual force that will improve the world, rather than a special man.

**Box 6:**

**Source of Wisdom and authority 1 – part 1: (Encouragement)**

(Psalm 23.1-6)

1. The LORD is my shepherd, I lack nothing.
2. He makes me lie down in green pastures, he leads me beside quiet waters,
3. he refreshes my soul. He guides me along the right paths for his name’s sake.

**Box 7:**

**Source of Wisdom and authority 1 – part 2: (Encouragement)**

(Psalm 23.1-6)

4. Even though I walk through the darkest valley, I will fear no evil, for you are with me; your rod and your staff, they comfort me.
5. You prepare a table before me in the presence of my enemies. You anoint my head with oil; my cup overflows.
6. Surely your goodness and love will follow me all the days of my life, and I will dwell in the house of the LORD forever.

**Box 8:**

**Source of Wisdom and authority 2: (Recited at difficult times)**

(Psalm 22.1-2)

1. My God, my God, why have you forsaken me? Why are you so far from saving me, so far from my cries of anguish?
2. My God, I cry out by day, but you do not answer, by night, but I find no rest.

**Box 9:**

**Source of Wisdom and authority 3: (Wisdom)**

(Proverbs 4.5-7)

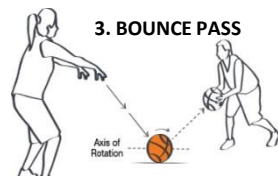
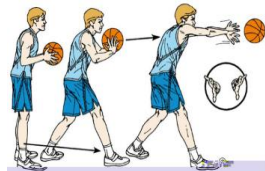
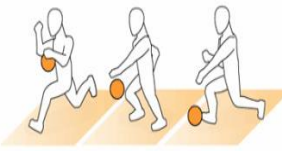
5. Get wisdom, get understanding; do not forget my words or turn away from them.
6. Do not forsake wisdom, and she will protect you; love her, and she will watch over you.
7. The beginning of wisdom is this: Get wisdom. Though it cost all you have, get understanding.




Key skills:	Rules, techniques, tactics:
<p><b>1. How do you dribble?</b> Head up, spread fingertips over ball, bounce at waist height.</p>	<p><b>12. How many players are on the court during a game?</b> A game is played between 2 teams with 5 players on the court.</p>
<p><b>2. How do you perform a chest pass?</b> W shape behind ball, chest height, follow through.</p>	<p><b>13. What is the aim?</b> Players are aiming to score as many points in the time allocated by shooting through the hoop.</p>
<p><b>3. How do you perform a bounce pass?</b> As a chest pass but ball will bounce before player.</p>	<p><b>14. Can you move with the ball?</b> Players cannot travel with the ball or perform a double dribble (dribbling, picking up the ball, continuing to dribble). Players cannot hold the ball for longer than 5 seconds.</p>
<p><b>4. How do you demonstrate a set shot?</b> knees bent, strong hand on bottom of ball, other hand supporting, extend elbow to 90 degrees towards net.</p>	<p><b>15. What happens of the ball goes out of court or if a point is scored?</b> If the ball goes out of court then a side line ball is taken by the opposite team. If a point is scored the ball goes to the opposition from the backline.</p>
<p><b>5. How do you demonstrate a lay up?</b> Strong hand on the bottom of ball, other hand supporting. Right right hand dribble, step right, jump left, aim for top corner of black box.</p>	<p><b>16. What happens after the ball has crossed the mid line of the court in an offensive situation?</b> Once the offense (attacking team) has brought the ball across the mid line of the court, they cannot go back across the line during possession.</p>
<p><b>6. How do you perform a jump shot?</b> Landing on alternate feet, first foot to land is static and pivots, ball must be released as jump is executed.</p>	<p><b>17. What is a foul given for?</b> Hitting, holding or pushing an opponent.</p>
<p><b>7. How do you man to man defend?</b> Knees bent, straight back, arms out, follow player (watch their belly button). <b>What is zone marking?</b> A strategy of team defense often used around the key. Prevents attacking players getting into the zone.</p>	<p><b>18. What happens if the shooter is fouled?</b> 1 – 3 free throws can be awarded worth 1 point each.</p>
<p><b>8. What is rebounding?</b> Regaining possession after a shot has been missed.</p>	<p><b>19. How long does a basketball game last?</b> A game is made up of 4 quarters of 12 minutes so a total of 48 minutes. However regulation time is stopped for many aspects of gameplay including fouls, ball out of bounds and timeouts so a game can be up to 2 and a half hours!</p>
<p><b>9. What is the offence?</b> The team with the ball are the offending team and are aiming to shoot at the basket and score. only chance that the team has a shot at the basket and scoring.</p>	<p><b>20. How is basketball scored?</b> <u>3 points</u> are awarded if the ball is successfully shot through the hoop from behind the 3 point arc (see court diagram). <u>2 points</u> are awarded if the ball is successfully shot within the 3 point arc. <u>1 point</u> is awarded if a foul is committed and they score their penalty shot. A player is given one point for every successful foul shot.</p>
<p><b>10. What is the defense?</b> Preventing an opportunity for the opposition to score.</p>	
<p><b>11. What is an assist?</b> Helping a teammate to score.</p>	

1. DRIBBLING

2. CHEST PASS

3. BOUNCE PASS



BASIC RULES	BASIC STROKE TECHNIQUES
<p><b>1. What is the aim of table tennis?</b> The aim of table tennis is to score more points than your opponent by volleying the ball across the net and landing on the table.</p>	<p><b>7. The Backhand Push</b> Stand close to the table, front ways on to the table, hit the ball at the top of the bounce, 50% of stroke action before hitting it, and 50% of stroke action after you have hit it (so its not too powerful)</p> 
<p><b>2. When is a point won?</b> A point is won by you if your opponent is unable to return the ball to your side of the table (e.g. they miss the ball, they hit the ball but it misses your side of the table, or the ball hits the net), or if they hit the ball before it bounces on their side of the table.</p>	<p><b>8. The Forehand Drive</b> Stand close to the table, sideways on, facing the line of play. Using a medium stroke, racket arm should move slightly upwards in direction that the ball is going to travel. During the stroke your upper body should rotate 45 degrees to the right then turn back to face the ball, moving from right foot to your left.</p> 
<p><b>3. How is table tennis scored?</b> The winner of a game is the first to 11 points. There must be a gap of at least two points between opponents at the end of the game though, so if the score is 10-10, the game goes in to extra play until one of the players has gained a lead of 2 points. The point goes to the player who successfully ends a rally, regardless of who has served. A match can consist of the number of games you like, just make sure you agree this in advance!</p>	<p><b>9. The Serve</b> Table tennis serve is the most important stroke in the game because it provides the only situation in which you have total control over how and where you play the ball.</p> <ul style="list-style-type: none"> <li>- On your backhand side, position yourself at the side of the table, hold the racket at an open angle (like backhand push).</li> <li>- Balance the ball in the palm of your free hand and project the ball upwards, as near vertically as possible, so that it rises at least 6inches after leaving your hand.</li> <li>- Allow the ball to drop and then hit the ball with your racket – so that it bounces your side of the table then goes over the net and bounces on your opponent’s side.</li> </ul> 
<p><b>4. What is the ready position?</b> Neutral starting position, slightly bent arm, racket in front of you so you can just reach the end of the table, feet shoulder width apart and knees bent, racket in a neutral position so you can play either a backhand or forehand.</p>	
<p><b>5. What is the correct racket grip?</b> Shake hands or western grip – v shape formed with thumb and forefinger, should be firm grip but not too tight – imagine the bat is just an extension of your hand and forearm.</p>	
<p><b>6. What happens if the ball hits the net?</b> The ball must pass ‘cleanly’ over the net. If the ball ‘clips’ the net and goes over it is a ‘let’ and the point is retaken. If the ball hits the net and doesn’t go over the point goes to the other player / team. There are no second serves.</p>	
BASIC TACTICS AND STRATEGIES	
<p><b>10. What shot do I play when?</b> If the ball is played short (just over the net) return the ball with a defensive shot (the push). If the ball is played long (to the baseline on your side of the table) return the ball with an attacking shot such (the drive).</p>	<p><b>11. Vary your shots used</b> - Try not to use the same shot every time you return the ball because then this becomes predictable to your opponent. <b>12. Vary the placement</b> – Try to hit the ball into different spaces on the opponents side of the table so they have to move more – aiming for the backline, corners, sidelines and just over the net is the best place to aim.</p>

BASIC RULES	BASIC TACTICS AND STRATEGIES
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**1. What is the aim of wallball?** Wallball is a simple activity played by hitting a ball against a wall with your hands. The aim of wallball is to score more points than your opponent by hitting a ball against a wall and landing inside the correct area on the floor.

**2. When is a point won?** A point is won by you if your opponent is unable to return the ball to the wall (e.g. they miss the ball, they hit the ball but it misses the wall, or the ball hits the floor before the wall).

**3. How is wallball scored?** The winner of a game is the first to 11, 15 or 21 points or played a timed game (commonly 15/20 minutes). There must be a gap of at least two points between opponents at the end of the game though, so if the score is 10-10, the game goes in to extra play until one of the players has gained a lead of 2 points. The point goes to the player who successfully ends a rally, regardless of who has served.  
A match can consist of the number of games you like, just make sure you agree this in advance!

**4. What is the ready position?** Neutral starting position, feet shoulder width apart and knees bent, both arms in a neutral position so you can play either.

**5. What is the correct equipment needed to play wallball?** It is recommended to use an official wallball when playing the sport, however, any ball that can be struck safely with the hand can be used e.g. tennis ball, soft play ball, etc. Wallball gloves are optional and usually the player will decide if needed or not. Goggles are required for official tournaments.

**6. Do we need a referee to play wallball?** Wallball is a self-contained game and players are also expected to be referees, giving them experience of controlling a game, making decisions and taking ownership of their actions. It is recommended that the loser referees the next match.

**7. How do we start the game?**  
The game will start by one of the players serving against the wall and the ball must return beyond the service line and inside the court.

**BASIC TACTICS AND STRATEGIES**

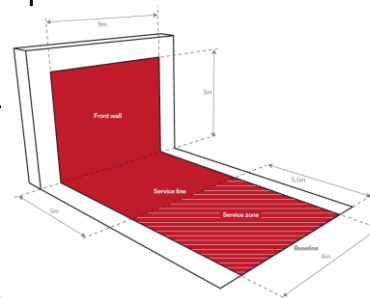
**8. The Target Serve**  
Most professional players believe that a well-controlled serve is the most important shot in the game. Services that rebound and bounce low near the short lines makes it even more difficult for the retriever, specially if he/she does not know which the direction the serve is being aimed.



**9. What are the pass shots?**  
The pass shot is just what the name implies, a shot that is hit past the opponent. Control the passing angles is very important in order to move the opponent out of the advantageous front court position. These shots are usually classified as “cross court” and “down the line” passes.

**10. Important tactics to win games:**

- a) Always serve first if you win the toss at the beginning of the game
- b) Serve deep to push your opponent back
- c) Dominate the centre of the court
- d) Hit to the player weaker hand
- e) Kill the ball, by hitting it low at the wall



1	Bubble sort	Understand what an algorithm is, what algorithms are used for and be able to interpret algorithms (flowcharts, pseudo code, written descriptions, program code)
2	Merge Sort	Understand how to create an algorithm to solve a particular problem, making use of programming constructs (sequence, selection, iteration) and using appropriate conventions (flowchart, pseudo code, written description, draft program code)
3	Linear search	Understand the purpose of a given algorithm and how an algorithm works
4	Binary search	Understand how to determine the correct output of an algorithm for a given set of data

**Purpose of sorting and searching:** We often need to find one particular item of **data** amongst many hundreds, thousands, millions or more. For example, you might need to find someone’s phone number on your phone, or a particular business’s address in the UK.  
 Sorting and searching are two of the most frequently needed tasks in program design. Our programs will search and sort data, these are methods show the process works things out.

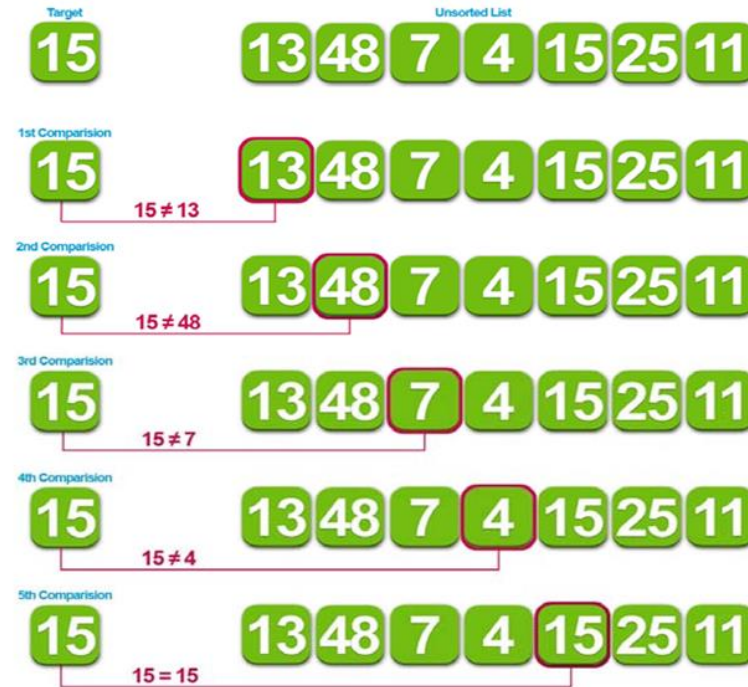
Binary search is a 'divide and conquer' **algorithm** which requires the initial **array** to be sorted before searching. It is called binary because it splits the array into two halves as part of the algorithm. Initially, a binary search will look at the item in the middle of the array and compare it to the search terms.

Figure 2 - Binary search example



<https://www.geeksforgeeks.org/binary-search/>

Figure 1 - Linear search example



<https://medium.com/karuna-sehgal/an-simplified-explanation-of-linear-search-5056942ba965>

**Linear search:** Think of it as a way of finding your way in a phonebook. A Linear Search is starting at the beginning, reading every name until you find what you’re looking for.

<https://www.geeksforgeeks.org/bubble-sort/>

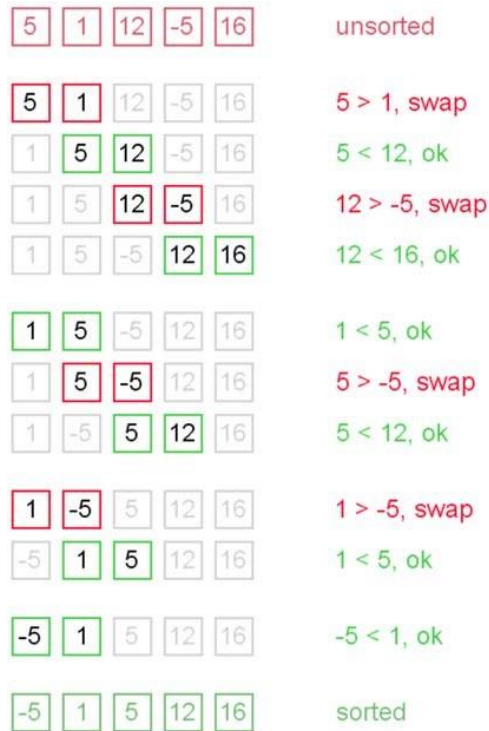


Figure 1: bubble sort

**Bubble sort** Works by repeatedly going through the list to be sorted, comparing each pair of adjacent elements. If the elements are in the wrong order they are swapped, else they are left in position.

<https://www.geeksforgeeks.org/insertion-sort/>

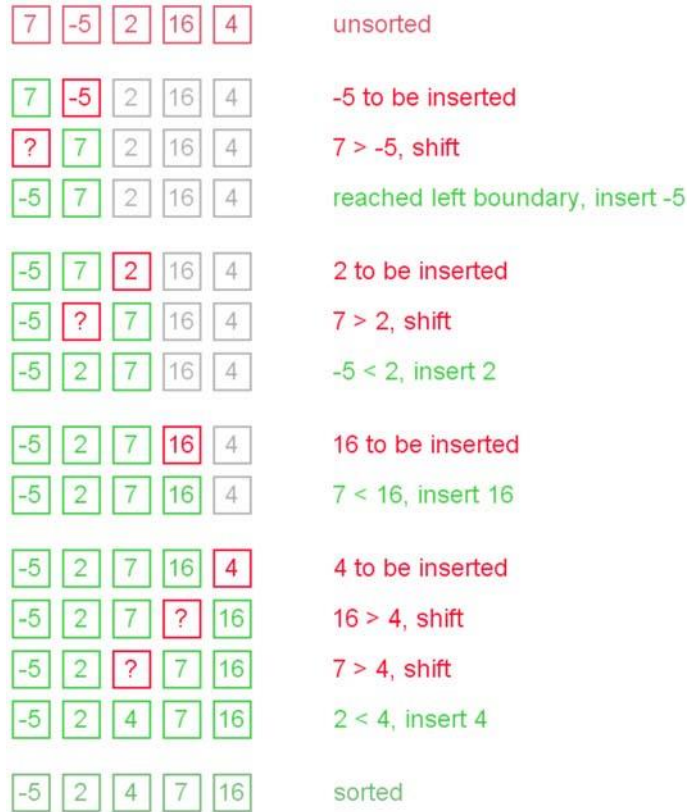


Figure 2: insertion sort

**Insertion sort** Sorts data one element at a time. The algorithm takes one data item from the list and places it in the correct location in the list. This process is repeated until there are no more unsorted items in the list. More efficient than bubble sort.

<https://www.geeksforgeeks.org/merge-sort/>

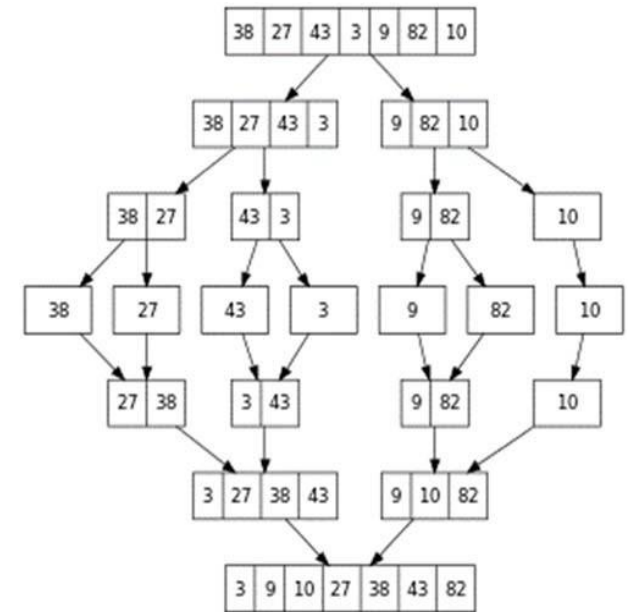


Figure 1: merge sort

**Merge sort** This is a two-stage sort. Firstly the list is split in half into sub lists repeatedly. The algorithm stops splitting the lists when each list has only 1 element in it. The second stage involves repeatedly merging the lists in order until there is only one sub list remaining.



1	Programming	Use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions
---	-------------	---

```

when green flag clicked
  clear
  pen up
  go to x: 0 y: 0
  pen down
  set pen color to 5
  repeat 50
    repeat 4
      turn 90 degrees
      move 100 steps
    move 10 steps
    turn 80 degrees
  repeat 10
    change pen color by 10
    turn 90 degrees
    move 70 steps
    
```

<b>Green Flag</b>	Sometimes simply called the 'flag,' this is what starts most projects' scripts running	
<b>Costumes</b>	Images that are used to represent a sprite on the stage	
<b>Script</b>	A collection of code blocks that outlines the programming logic that influences the operation of a sprite	
<b>Red Stop Sign</b>	The button that usually stops a project	
<b>X_ Y_</b>	The coordinates on the stage where you want the sprite to move to	

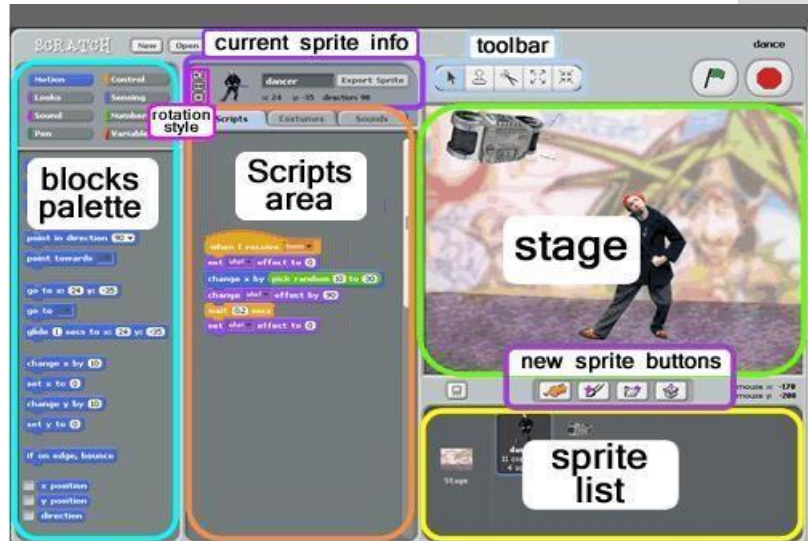
Computing projects might include developing a simple computer game using a visual, interactive programming language such as Scratch.

Scratch provides access to over 100 code blocks. These code blocks are organized into eight categories and are made available on the blocks palette. Each of these categories of code blocks is described in the following list:

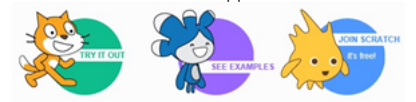
- **Motion.** Code blocks that control sprite placement, direction, rotation, and movement.
- **Looks.** Code blocks that affect sprite and background appearance and provide the ability to display text.
- **Sound.** Code blocks that control the playback and volume of musical notes and audio files.
- **Pen.** Code blocks that can be used to draw using different colours and pen sizes.
- **Control.** Code blocks that trigger script execution based on predefined events, repeatedly execute programming logic using loops, and perform conditional logic.
- **Sensing.** Code blocks that can be used to determine the location of the mouse-pointer, its distance from other sprites, and whether a sprite is touching another sprite.
- **Operators.** Code blocks that perform logical comparisons, rounding, and other arithmetic operations.
- **Variables.** Code blocks that can be used to store data used by applications when they execute.

```

when green flag clicked
  say Hello!
  forever
    move 10 steps
    turn 15 degrees
  
```

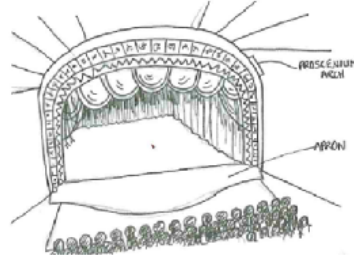


Did you know that Scratch is freely available and accessed from <https://scratch.mit.edu> where you will find lots of ideas and support ... do take a look



**Staging Configurations and Stage Positions**

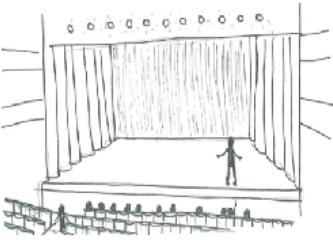
**Proscenium Arch**



Proscenium Arch is a common form of theatre. The proscenium is the frame around the stage. The area in front of the arch is called an **apron**.

- **Advantages:** Backdrops and large scenery can be used without blocking sightlines. There may be **fly space** and **wing space** to store scenery. The frame around the stage adds to the effect of a fourth wall.
- **Disadvantages:** Audience members may feel distant from the stage. **Audience interaction** is more difficult. It can feel very formal and rigid.

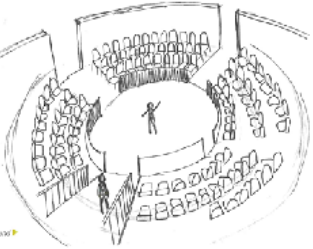
**End on Staging**



End on Staging is similar to a Proscenium stage as the audience sit on one side of the stage directly facing it. However it doesn't have the large proscenium frame.

- **Advantages:** The audience all have a similar view. Stage pictures are easy to create. Large backdrops or projections onto a **cyclorama** may be used.
- **Disadvantages:** Audience members in the back rows may feel distant from the stage. It may not have **wing** or **fly** areas.

**Theatre in the Round**



Theatre in the Round is a staging configuration when the audience are seated in a circle all around the stage.

- **Advantages:** Intimate space for a performance. It engages the audience because the actors enter and exit the stage through the audience. There is also no 'forth wall'
- **Disadvantages:** One cannot use **backdrops** or **flats**. Stage furniture needs to be small so as not to obstruct **sightlines**. Actors have to be carefully **blocked** so that they do not always have their back to one section of the audience.

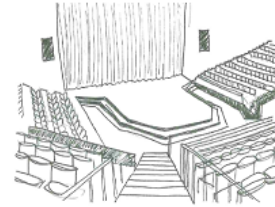
**Promenade Theatre**



Promenade Theatre is where the audience stand or follow the actors through a performance. This can happen in a theatre, but more often happens in a **site specific** show.

- **Advantage:** It is an interactive and exciting type of theatre where the audience feel involved.
- **Disadvantage:** Audience may get tired standing and walking. Actors or crew need to be skilled at moving the audience around. There can be health and safety risks.

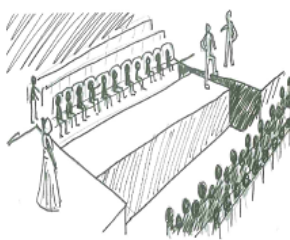
**Thrust Staging**



In a Thrust Stage, there is audience on three sides of the stage. This is one of the oldest theatre types of stage.

- **Advantage:** As there is no audience on one side of the stage, **backdrops**, **flats**, **cycloramas** or large **scenery** can be used. The audience may feel closer to the action as there are three front rows (one on each of the stages three sides).
- **Disadvantage:** **Sight lines** for those on extreme sides may be limited. The audience on the right and left have each other in view. **Box sets** (three sides of the room are constructed) cannot be used as this would block audience views.

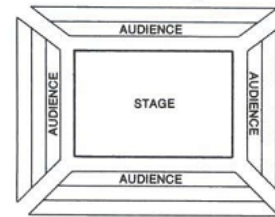
**Traverse Staging**



On a Traverse Stage the acting area is a long central space with audience seated on either side facing each other. Like a catwalk.

- **Advantages:** Audience feel very close to the stage. They can see the reaction of the other side who are facing them which can work well for interaction. Sometimes extreme ends of the stage can be used to create extra acting space.
- **Disadvantages:** Big **scenery**, **backdrops** and **sets** block **sightlines**. The long and thin acting area makes **blocking** difficult. Does not have **wing** or **fly** areas.

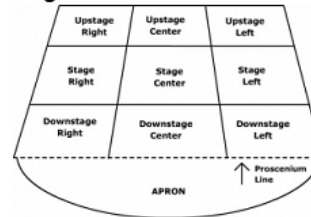
**Arena Staging**



Arena Staging is a similar configuration to Theatre in the Round. The audience sit on all sides of the stage, however they tend to sit in straight lighes. This type of staging is often used in sporting venues.

- **Advantages:** Intimate space for a performance. It engages the audience because the actors enter and exit the stage through the audience. There is also no 'forth wall'
- **Disadvantages:** One cannot use **backdrops** or **flats**. Stage furniture needs to be small so as not to obstruct **sightlines**. Actors have to be carefully **blocked** so that they do not always have their back to one section of the audience.






**Stage Positions**





In order to discuss theatre, you need to be able to explain quickly and simply where you want something to occur. To do this, theatre makers divide the stage up into a grid.

**Points to Remember**

- Some stages are **raked** which means they are higher at the back. Therefore **upstage** is at the back and **downstage** at the front.
- The direction of stage is always seen from the perspective of the actor. This can be confusing as you will need to swap your left and right if looking at the stage from an audience perspective.

Characterisation	
<p>The act of changing voice, body language, movement, gesture etc. when in role is called characterisation. All people are different. The actor must use their skills to portray a character consistently throughout their performance. When creating characters, you need to consider <b>voice, body language, facial expression and gesture.</b></p>	
Characterisation: Voice	Characterisation: Body Language
<p><b>Volume:</b> Loud to quiet  <b>Crescendo:</b> Increasing volume  <b>Pitch:</b> Deep or squeaky  <b>Pace/Tempo:</b> Fast or slow  <b>Rhythm:</b> Fluctuations in pace  <b>Pause:</b> Breaks in speech  <b>Inflection:</b> Emphasis on a word  <b>Articulation:</b> Emphasis on letters.  <b>Tone:</b> Emotion  <b>Clarity:</b> Clearly say words  <b>Accent:</b> A way of speaking that denotes where you are from  <b>Silence:</b> The absence of sound  <b>Echo:</b> Repeated layered sound</p> 	<p><b>Movement:</b> e.g. rushing in or stamping their foot excitedly.  <b>Stance:</b> How the character stands.  <b>Gait:</b> The way the character walks.  <b>Posture:</b> How the character stands or sits e.g. slouch or straight.  <b>Proxemics:</b> The space between the characters creates meaning. e.g. <b>distance</b> may mean enemies and <b>contact</b> may mean intimacy  <b>Levels:</b> Suggest status e.g. a dominant character may be higher up  <b>Use of space:</b> demand a lot of space or hide in a small corner.  <b>Stillness:</b> When the actors remain motionless  <b>Energy:</b> high energy to deliberately sluggish  <b>Eye Focus:</b> Where the actors eyes are focused  <b>Head position:</b> Up, down, to the side, tilted  <b>Connection:</b> Contact between the performers.  <b>Gesture:</b> A movement that expresses meaning(see below)</p>  
Characterisation: Facial Expression	Characterisation: Gesture
<p>Does your character move their face a lot? What does their facial expression say about their character? Do they have a very expressive face or do they try not to give much of themselves away?</p> <p>Performing in a large theatre auditorium might mean that many of the audience are a long way away. It's the actors' job to communicate their role to fit the space effectively. Facial expressions, like body language, may be <b>heightened</b> or <b>exaggerated</b> so that the character's intentions are clear for all.</p> 	<p>A gesture is a movement expresses meaning. For example, the wagging admonitory finger accompanying words like 'I have told you time and time again that this behaviour is unacceptable' is probably among the most familiar of all gestures. They tend to work as emphasis.</p> <p>However, gestures can also amplify a question, such as pointing in a particular direction as you say 'Do you mean this way?' They can also convey a mood, such as a shrug of the shoulders to convey indifference.</p> 

Rehearsal Techniques
<p>These are exercises that the actors engage in BEFORE they perform live to an audience. They help the actors to understand their <b>characters</b> and realise their <b>intentions</b>. They also help to develop the plot and structure of a <b>devised</b> play.</p> <p><b>Understand your character</b>                  The rehearsal techniques below help the actor to deepen their understanding of the character they are playing and become more familiar with their intentions.</p> <ul style="list-style-type: none"> <li> <b>Hot-Seating</b>                      An actor sits in the hot-seat and is questioned in <b>role</b>. They spontaneously answer questions.                      </li> <li> <b>Role on the Wall</b>                      Draw an outline of your character. Annotate it to reflect the character's thoughts, feelings, fears, circumstances etc.                      </li> <li> <b>Inner Thoughts</b>                      Whilst rehearsing a scene, one person will shout "Freeze, inner thoughts". The actor should freeze and spontaneously say out loud what the <b>character</b> is thinking.                 </li> <li> <b>Conscience Corridor</b>                      Performers make two lines facing each other. The <b>protagonist</b> poses a question such as "Should I put Grandad in a basket and leave him by the side of the road"? Actors on each side of the corridor give reasons for and against.                 </li> </ul> <p><b>Improve how you play your character</b>                  These rehearsal techniques improve how you perform physically on stage.</p> <ul style="list-style-type: none"> <li> <b>Bigger Bigger Bigger</b>                      Rehearse one scene several times increasing the energy in gesture/movement, exaggeration of facial expression and volume                 </li> <li> <b>Non-Verbal Body Language</b>                      Perform a scene without speaking. Create meaning through mime.                 </li> </ul>

Foundation Skills
<p>Foundation skills are the drama strategies that can be used to help improve the way that you reveal your <b>plot</b> to your <b>audience</b>. Always remember, it's not just the story you tell that is important, but also how you tell it!</p> <p><b>Role Play</b>                  Pretending to be somebody else.</p> <p><b>Improvisation</b>                  Performing a scene spontaneously without rehearsal.</p> <p><b>Marking the Moment</b>                  This is a way of highlighting the most important moment in a scene in order to draw the audience's attention to its significance.</p> <p><b>Still Image</b>                  This is a frozen picture which communicates meaning. It's sometimes called a <b>freeze frame</b> or <b>tableau</b>.</p> <p><b>Narration</b>                  A narrator is like a storyteller informing the audience about the plot.</p> <p><b>Thoughts in the Head</b>                  This is when a character steps out of a scene to address the audience about how they're feeling.</p> <p><b>Alter Ego</b>                  Allowing the audience to hear/see the positive and negative thoughts of a character. It is sometimes called <b>Angels and Devils</b>.</p> <p><b>Chorus</b>                  A group on stage say the same words and gestures.</p> <p><b>Flashback</b>                  A performance of a scene from the past.</p> <p><b>Soundscape</b>                  Performers make sounds to create an atmosphere.</p> <p><b>Slow Motion</b>                  Acting as if time has slowed down. Often used to highlight an important movement.</p> <p><b>Mime</b>                  Telling a story through movement. Creating characters and objects without spoken word.</p> <p><b>Diaries &amp; Letters</b>                  Allowing the audience to hear or see the content of a diary or letter on stage.</p>

Please turn over to learn about staging and stage positions.

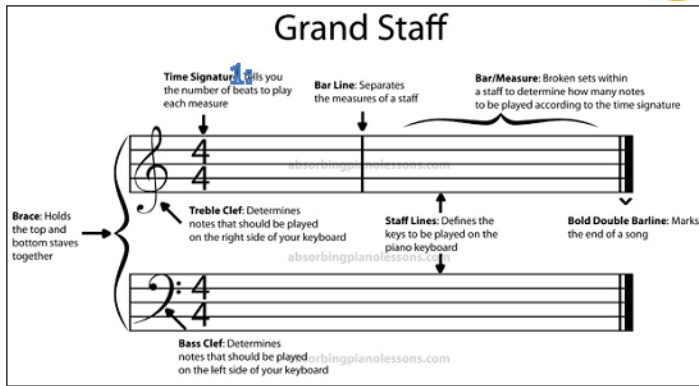


**KEYWORDS**

- 1-Pitch:** how high or low a note is.
- 2-Notation:** any system used to visually represent music played with instruments or sung through the use of written, printed, or otherwise-produced symbols.
- 3-Stave:** a set of five horizontal lines and four spaces that each represent a different musical pitch.
- 4-Grand Staff:** two staves are joined by a brace, or is intended to be played at once by a single performer (usually a keyboard instrument or harp). Typically, the upper stave uses a treble clef and the lower stave has a bass clef.
- 5-Treble Clef:** A symbol indicating that the second line from the bottom of a staff represents the pitch of G above middle C. Also called G clef.
- 6-Alto Clef:** the clef that establishes F a fifth below middle C on the fourth line of the staff. Also called C clef – typically used by the Viola.
- 7-Bass Clef:** the clef that establishes F a fifth below middle C on the fourth line of the staff. Also called F clef.
- 8-Ledger line:** used in notation to notate pitches above or below the lines and spaces of the regular stave.
- 9-Octave:** an interval whose higher note has a sound-wave frequency of vibration twice that of its lower note; the octave is an interval of eight notes.
- 10-Accidental:** a note of a pitch that is not a member of the scale indicated by the key signature. The sharp (#), flat (b), and natural (□) symbols mark such notes— those symbols are also called accidentals.
- 11-Sharp (#):** an accidental that indicates a slight increase in pitch.
- 12-Flat (b):** an accidental that indicates a slight decrease in pitch.
- 13-Natural (□):** an accidental, which cancels previous accidentals and represents the unaltered pitch of a note.
- 14-Bar:** Each bar usually has the same number of beats in it. Music that feels like 1-2-3-4 will be divided into bars with four beats worth of music in each bar.
- 15-Barline:** The bar line is a vertical line written in the music which separates the bars.
- 16-Time Signature:** to specify how many beats are to be contained in each bar and which note value is equivalent to one beat.
- 17-Semibreve:** a note, which lasts for 4 beats.
- 18-Minim:** a note, which lasts for 2 beats.
- 19-Crotchet:** a note, which lasts for 1 beat.
- 20-Quaver:** a note, which lasts for 1/2 a beat. It is commonly 'beamed' to another quaver to equal 1 whole beat.
- 21-Semiquaver:** a note, which lasts for 1/4 of a beat. It is commonly 'beamed' to another 3 semiquavers to equal 1 whole beat.
- 22-Rest:** an interval of silence in a piece of music, marked by a symbol that corresponds to a particular note value.

**- KEY QUESTIONS -**

- Q1:** What is the mnemonic for the lines on each clef?  
 Every **G**ood **B**oy **D**eserves **F**ootball (Treble clef)  
 Fat **A**lley **C**ats **E**at **G**arbage (Alto clef)  
 Good **B**oys **D**o **F**ine **A**lways (Bass clef)
- Q2:** What is the mnemonic for the spaces on each clef?  
**F**ACE in the space (Treble clef)  
**G**reen **B**irds **D**o **F**ly (Alto clef)  
**A**ll **C**ows **E**at **G**rass (Bass clef)



**Understanding Sharps & Flats**

SHARP	#	= RAISES 1/2 TONE
FLAT	b	= LOWERS 1/2 TONE
NATURAL	□	= CANCELS OUT PREVIOUS # OR b

**2: Accidentals:** symbols applied to notes which change the normal pitch of that note:

**3: PITCH - The notes on the staff**

Treble Clef Mnemonics  
**FACE** in the space  
 Every Good Boy Deserves Football

Alto Clef Mnemonics  
 Green Birds Do Fly  
 Fat Alley Cats Eat Garbage

Bass Clef Mnemonics  
 All Cows Eat Grass  
 Good Boys Do Fine Always

**4: Durations:** the lengths of the notes you play. These are combined to create rhythms.

Note	Name	Beats	Rest	Note	Name	Beats	Rest
	Semibreve, Whole Note	4 beats			Dotted Semibreve, Dotted Whole Note	6 beats	
	Minim, Half Note	2 beats			Dotted Minim, Dotted Half Note	3 beats	
	Crotchet, Quarter Note	1 beat			Dotted Crotchet, Dotted Quarter Note	1 1/2 beats	
	Quaver, Eighth Note	1/2 beat			Dotted Quaver, Dotted Eighth Note	3/4 beat	
	Semiquaver, Sixteenth Note	1/4 beat			Dotted Semiquaver, Dotted Sixteenth Note	3/8 beat	

## Strings (Violin, Viola, Cello, Double Bass)

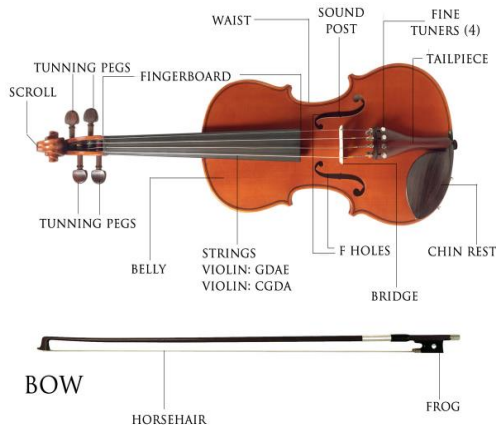
To play a string instrument, your left hand presses down on the strings to change the pitch while your right hand moves the bow or plucks the strings.

### How to Practice

IDENTIFY THE PROBLEM AREAS: **Practice the parts you can't play (not the parts you can) first:**

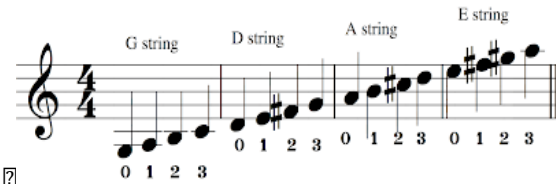
- Use a metronome
- Play it slowly, then speed it up
- Try the part in different rhythms so that you get the pitches accurate
- Aim to play it correctly **three time in a row** – if you make a mistake, start again!

### VIOLIN/VIOLA

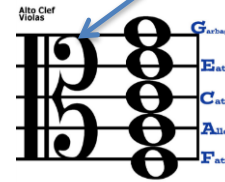


#### Basic notes on the Violin

A violinandviola.co.uk Helpful Handout

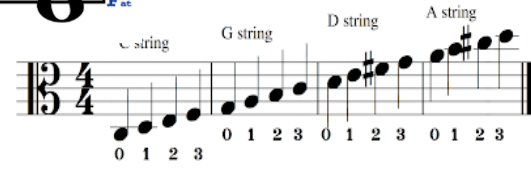


**\*Violas use a different 'clef' to most instruments: The ALTO clef**  
- Middle C is on the middle line! -



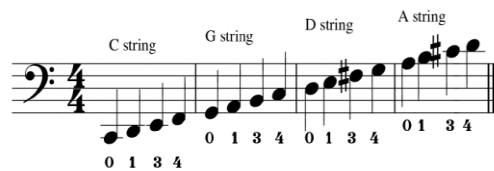
#### Basic notes on the Viola

A violinandviola.co.uk Helpful Handout



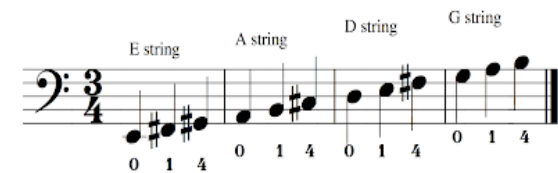
#### Basic notes on the Cello

A violinandviola.co.uk Helpful Handout



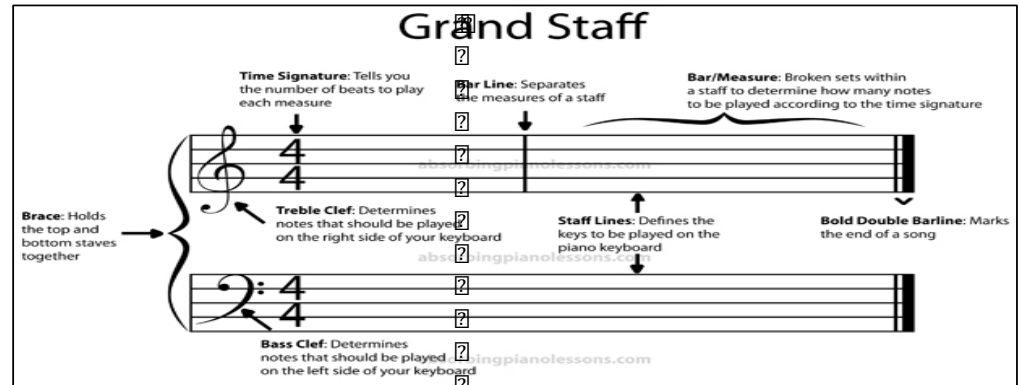
#### Basic notes on the Double Bass

A violinandviola.co.uk Helpful Handout



**KEYWORDS**

- 1- Time Signature:** to specify how many beats are to be contained in each bar and which note value is equivalent to one beat.
- 2- Bar:** Each bar usually has the same number of beats in it. Music that feels like 1-2-3-4 will be divided into bars with four beats worth of music in each bar.
- 3- Barline:** The bar line is a vertical line written in the music which separates the **bars**.
- 4- Rest:** an interval of silence in a piece of music, marked by a symbol that corresponds to a particular note value.
- 5- Melody:** the main tune of a song.
- 6- Phrase:** a short musical passage; a musical sentence.
- 7- Pentatonic:** 5-notes. A pentatonic scale is a series of 5-notes used to create a piece.
- 8- Call and Response:** 2 phrases that occur in different parts one after another. Often a solo part then repeated by a chorus (African music).
- 9- Question and Answer:** 2 phrases that occur one after another, the second in direct response, and complimentary to the first.
- 10- Ostinato:** a persistent phrase or motif repeated over several bars or more.
- 11- Dorian mode:** a medieval **mode** whose scale pattern is that of playing d to d on the white keys of a piano (T-s-T-T-T-s-T).
- 12- Drone:** an accompaniment where a note is continuously heard/played throughout a piece
- 13- Harmony:** parts that play together simultaneously create harmony. Often accompanying or secondary parts to a melody.
- 14- Dictation:** the ability to hear a piece of music and quickly write it down.



Note	Name	Beats	Rest	Note	Name	Beats	Rest
	Semibreve, Whole Note	4 beats			Dotted Semibreve, Dotted Whole Note	6 beats	
	Minim, Half Note	2 beats			Dotted Minim, Dotted Half Note	3 beats	
	Crotchet, Quarter Note	1 beat			Dotted Crotchet, Dotted Quarter Note	1½ beats	
	Quaver, Eighth Note	1/2 beat			Dotted Quaver, Dotted Eighth Note	¾ beat	
	Semiquaver, Sixteenth Note	1/4 beat			Dotted Semiquaver, Dotted Sixteenth Note	¾ beat	

Oh Suzana in C major pentatonic

- 5 characteristics of a good melody**
- A Good Melody...
1. Starts and ends on the same note (C)
  2. Moves mainly by step
  3. Has a smooth contour/shape
  4. Has 2 or 4 bar phrases
  5. Uses similar short motifs to give it a clear character

Annotate the melody above to identify its use of the 5 characteristics of a good melody.

### A. Key Terms

Keyword	Description
1. Line	Line is the path left by a moving point. For example, a pencil or a brush dipped in paint. A line can be horizontal, diagonal or curved and can also change length.
2. Shape	A shape is an area enclosed by a line. It could be just an outline or it could be shaded in. Shapes can be geometric or irregular.
3. Form	Form is a three dimensional shape, such as a cube, sphere or cone. Sculpture and 3D design are about creating forms.
4. Colour	Red, yellow and blue are primary colours, which means they can't be mixed using any other colours. In theory, all other colours can be mixed from these three colours.
5. Tertiary Colours	Tertiary colours are created by mixing a primary colour and the secondary colour next to it on the colour wheel.
6. Complimentary Colours	Complimentary colours are colours that are opposite each other on the colour wheel. When complimentary colours are used together they create contrast. Adding a colour's complimentary colour will usually make a darker shade. This is often preferable to adding black.
7. Pattern	A design that is created by repeating lines, shapes, tones or colours. The design used to create a pattern is often referred to as a motif. Motifs can be simple shapes or complex arrangements

Keyword	Description
8. Apply	To use knowledge, skills and understanding and to employ appropriate techniques when developing and progressing ideas.
9. Develop	To take forward, change, improve or build on an idea, theme or starting point.
10. Investigate	To enquire into, examine in depth, and/or analyse the relevance of a chosen subject and associated sources.
11. Realise	To achieve, attain and/or accomplish your intentions.

### C. Art Styles



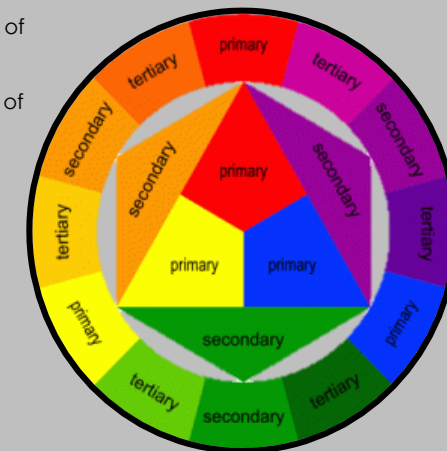
- 16. Ndebele art originates from the Ndebele tribe in South Africa
- 17. Traditionally Ndebele women would paint their houses in this style to celebrate events in their family
- 18. Traditionally locally available materials such as clay and dung were used.
- 19. Today acrylic paint is used
- 20. Esther Mahlangu is a famous Ndebele Artist
- 21. Esther Mahlangu was born in 1935 and is still alive.

### C. Colour Theory

Key terms 4 – 6 refer to the colour wheel.

- 13. Warm colours are colours on the red side of the wheel. These are red and include orange, yellow and browns.
- 14. Cool colours are colours on the blue side of the wheel. These are blue and include green, purple and most greys.

12. This is called a **Colour Wheel**.



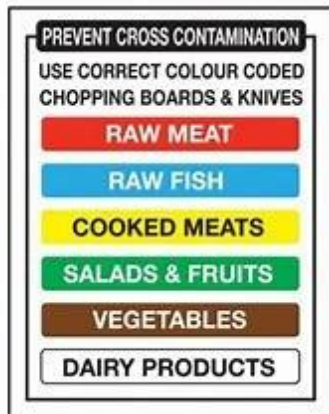
Primary	Secondary
red + yellow	=orange
red + blue	=purple
blue + yellow	=green

**Key words: Food hygiene and safety**

1. **Bacteria** – single celled organisms. Some can be harmful to humans.
2. **Pathogenic** – harmful or causing disease
3. **Equipment** – the tools used in practical lessons
4. **Personal hygiene** – routines that should be followed by people handling food to avoid contaminating food. E.g. Contaminated hands will spread bacteria around a kitchen very quickly, so having good personal hygiene is important
5. **Food hygiene** – routines that should be followed to avoid potential health hazards in food.
6. **The four C's** - Essential for maintaining food safety. They are **Cross contamination, Cleaning, Chilling, Cooking**,
7. **Cross contamination**– transferring bacteria that should not be in food from one place to another. E.g. bacteria on unwashed hands will contaminate food.
8. **Potential** – The possibility of something happening in the future
9. **Hazard** - anything that can cause harm or danger
10. **Recipe** – A plan used to inform the cook or chef how to make a 'dish'.
11. **Ingredients** – the raw food used to make a recipe
12. **Food poisoning** – An illness caused by eating contaminated food.

Key routines for Food Hygiene and Safety in the food room			
Personal Hygiene		Safety rules	
	Why?		Why?
P1. Wash hands in hot soapy water	To kill bacteria on your hands to stop contamination	S1. Use oven gloves	To stop injury – burns from baking trays
P2. Tie long hair back	To prevent hair going into the products you cook	S2. Wash up in hot soapy water	To stop cross contamination and kill bacteria
P3. Wear an apron	To protect your uniform and to prevent bacteria from your clothes contaminating your food	S3. Bags, blazers and coats on hooks at all times	To prevent injury – tripping up or falling over
P4. Roll sleeves up	To prevent bacteria contaminating your food	S4. Pan handles in 'safe' position	To prevent a fire and injuring from burns
P5. Remove jewellery	To prevent contamination of food by bacteria that live on jewellery.	S5 Chairs under the desk or stacked	To prevent injury – tripping up or falling over

Keywords : Knife skills, equipment and safety			
Skills		Equipment	
	How?		Function?
SK1. Claw grip	Fingers are held in a claw shape to hold food steady while slicing or cutting.	E1. vegetable Knife	A small knife mainly used for slicing and dicing
SK2. Bridge hold	Use thumb and forefinger and grip either side of the ingredient. Use knife under bridge to cut.	E2. Cooks knife	A large knife with a deep blade used for cutting chopping, slicing and dicing
		E3. Vegetable peeler	Peeling the skin from fruit or vegetables
		E4. Palette knife	Spreading icing, lifting food



### Understand the 4 C's Concept

- C – Good Hygiene practice prevents Cross Contamination
- C – Effective Cleaning removes harmful bacteria and stops them spreading
- C – Effective Chilling prevents harmful bacteria multiplying
- C – Thorough Cooking kills bacteria

- 8 guidelines for a healthy diet**
1. Base your meals on **starchy carbohydrates**
  2. Eat lots of fruit and vegetables ( **5-7 portions per day**)
  3. Eat plenty of fish
  4. Cut down on **sugar and saturated fats**
  5. Have no **more than 6gs of salt** a day
  6. Be active and be a healthy weight
  7. Drink **6-8 glasses of water** a day
  8. Don't skip breakfast

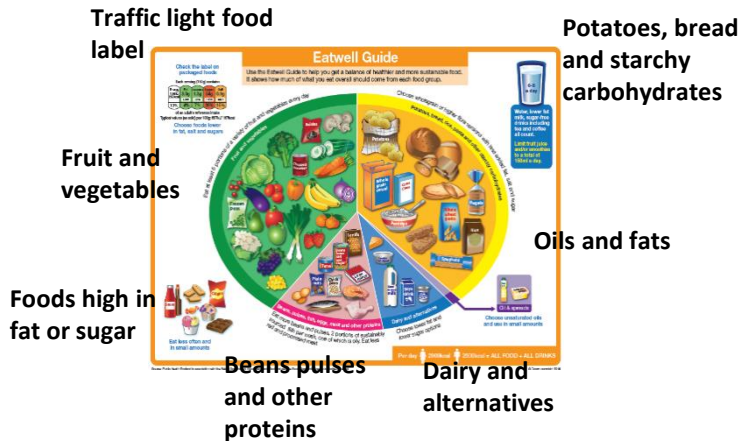


**Key words: fruits and vegetables, eat well**

- 1. fruit & vegetables** – are parts of a wide variety of cultivated plants eaten for their flavour and because they provide essential vitamins, minerals and fibre.
- 2. vegetables** – harmful or causing disease
- 3. 5-a-day campaign** – a government campaign to encourage us to eat five servings of vegetables/fruit per day
- 4. The Eat well Guide** – shows how eating different foods can make a healthy balanced diet.
- 5. diet** – the foods you choose to eat
- 6. balanced diet** – a diet that contains all the nutrients in the correct amounts
- 7. healthy diet**– a diet that is low in fat, salt and sugar, and high in fibre
- 8. traffic light food label** – a colour coded food label which helps you to choose healthy foods.

Preparing fruit and vegetable skills	
Skills	How?
SK3. Mash	Using a masher or fork to make food soft
SK4. shred	To slice into long thin strips.
SK5. grate	To make coarse or fine shreds by rubbing over one side of a grater
SK6. peel	To remove the very thin layer of skin of fruit and vegetables
SK7. pipe	To press a soft food through a piping bag fitted with a shaped nozzle to make the food into an interesting shape.
SK8. blend	To mix two or more ingredients together; this can be done by hand or special equipment.
SK9: Juice	To squeeze the juice from fruit or vegetables

Using equipment	
Equipment	Function?
E5. Wooden spoon	Mixing food together, stirring food on the hob.
E6. balloon whisk	Whisking; adding air to a mixture.
E7. cooling rack	Cooling food
E8. chopping board	Chopping and cutting food.
E9. saucepan	Boiling or simmering foods..
E10. sieve	Adding air to mixtures; removing lumps
E11: mixing bowl	Mixing food
E12. colander	Draining liquid



**8 guidelines for a healthy diet**

1. Base your meals on **starchy carbohydrates**
2. Eat lots of fruit and vegetables (**5-7 portions per day**)
3. Eat plenty of fish
4. Cut down on **sugar** and **saturated fats**
5. Have no **more than 6gs of salt** a day
6. Be active and be a healthy weight
7. Drink **6-8 glasses of water** a day
8. Don't skip breakfast

Equipment used to weigh and measure			
Equipment	Function?	Equipment	Function?
Kitchen scales	Weighing ingredients	Measuring cups	Some American/Australian recipes use cups for dried ingredients
Measuring jug	Measuring liquids, the side is usually marked with millilitres (ml)	Measuring spoons	Measure an accurate teaspoon or tablespoon. One teaspoon is 5ml; one tablespoon is 15ml

Materials And Keywords

**Manufactured**— made by machine.



**Ball bearing**—A circular hard steel ball.



**Acrylic plastic**— Flat plastic that resembles glass.



**Plywood**— A sandwich of thin pieces of wood.



**Miter**—A 45° cut in any material.



**Steel**— metal with hardness, elasticity, and strength.



**Wood fibres**— small particles of wood - often glued together to make manufactured board.



Types Of Wood

**Softwood**—noun The wood from a conifer (such as pine, fir, or spruce) as distinguished from that of broadleaved trees.

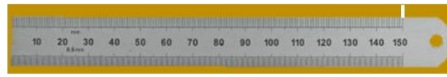


**Hardwood**—noun The hard, compact wood or timber of various trees, as the oak, cherry, maple, or mahogany.



Properties and characteristics of materials

	Absorbency	To be able to soak up liquid easily.
	Strength	The capacity of an object or substance to withstand great force or pressure.
	Elasticity	The ability of an object or material to resume its normal shape after being stretched or compressed; stretchiness.
	Plasticity	The quality of being easily shaped or molded.
	Malleability	To be able to be hammered or pressed into shape without breaking or cracking.
	Density	The quantity of mass per unit volume of a substance
	Effectiveness	The degree to which something is successful in producing a desired result; success.
	Durability	The ability to withstand wear, pressure, or damage.



1. Measure the wood carefully with a steel rule. Draw a line with a sharp pencil.

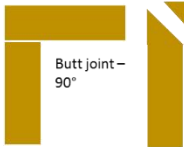


2. You must use a tri square to draw a 90° line on the wood

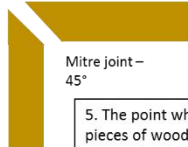


3. You must cut in a waste part of the wood. Draw TWO lines (black) and cut in the middle (white).

4. Cut the wood using a bench hook and tenon saw

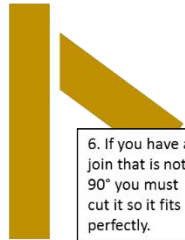


Butt joint— 90°



Mitre joint— 45°

5. The point where two pieces of wood meet is called a joint.



6. If you have a joint that is not 90° you must cut it so it fits perfectly.

Tools And Equipment

Coping saw – cutting curves



Tenon Saw – cutting straight



Bench hook – holding wood



Glass paper – file filing



Hand file – rapid filing



Pillar drill – making holes



Steel rule – accurate measure



Disc sander – rapid sanding



Understand the making Process

1	Preparation	Drawing, CAD, sketches, plans.
2	Marking Out	Pencil, scribe, steel rule, tri square, marking gauge, calipers, centre punch.
3	Modification	Saw, jigsaw, scroll saw, laser cutter, pliers, hammer, drill, file, glass paper.
4	Joining	Riveting gun, spanner, screwdriver, hot glue, gun , soldering iron, nail gun.
5	Finishing	Hand sander, glass paper, disc sander, buffing wheel, polish, spray paint, varnish.

Health & Safety Legislation

Health and Safety at work Act	Personal Protective Equipment	Manual Handling Operations	Control of Substances Hazardous to Health	Reporting of Injuries RIDDOR
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1	Salut! Quoi de neuf? Comment ça va?	Hi! What's up? How is it going?
2	Moi, ça va très bien parce que je suis en <u>sixième</u> .	Me, it's going very well because I am in <u>sixth</u> . (=year 7)
3	Je m'appelle Sébastien mais on m'appelle 'Seb'.	I am called Sébastien <b>but</b> people call me 'Seb'.
4	J'ai dix ans mais je vais bientôt avoir onze ans	I (have ) ten year old <b>but</b> I am going soon to (have) eleven years old
5	parce que la date de mon anniversaire est le treize janvier,	<b>because</b> the date of my birthday is on the thirteen January,
6	donc, je suis Capricorne. C'est le meilleur des signes astrologiques!	<b>therefore</b> I am Capricorn. It is the best of astrological signs!
7	Je suis assez grand, mince et très athlétique, mais	I am quite tall, slim and very athletic, <b>but</b>
8	Quand j'étais en primaire, j'étais rikiki et maigre... comme monsieur GENE!	<b>when I was in primary</b> , I was teeny weeny and skinny... like MR GENE!
9	J'ai les yeux marron et j'ai les cheveux noirs et courts.	I have the eyes brown and I have the hair black and short.
10	Avant, j'étais extrêmement paresseux, un peu violent et égoïste,	<b>Before</b> , I was extremely lazy, a bit violent and egotistic,
11	parce que j'étais un enfant gâté!	<b>because</b> I was a spoiled child!
12	Maintenant, je pense que je suis plus intelligent, compréhensif et sincère,	<b>Now</b> , I think that I am more intelligent, understanding and sincere, even though, I am sometimes mean with my friends.
13	bien que je sois parfois méchant avec mes amis.	
14	En primaire, j'aimais bien les 'hand spinners', le football et 'les Pimaskes'	<b>In primary</b> , I used to like (the) fidget spinners, football and 'Pimasks',
15	mais maintenant, j'adore ma Playstation, mon téléphone et la musique pop,	<b>but now</b> , I love my PlayStation, my phone and the music pop,
16	cependant, je déteste vraiment le racisme, les virus et les jouets débilés.	<b>however</b> , I really hate (the) racism, (the) viruses and (the) silly toys.
17	J'habite dans le North de Paris, à Saint-Denis, en France avec ma famille,	I live in the North of Paris, in Saint-Denis, in France with my family,
18	mais, je viens de Guadeloupe dans la Caraïbe.	<b>but</b> , I come from Guadeloupe in the Caribbean.
19	Dans ma famille, il y a quatre personnes, mes parents, ma soeur et moi.	In my family, there are four people, my parents, my sister and me.
20	J'aime ma famille parce qu'on s'entend bien généralement.	I love my family <b>because</b> we get on well <b>generally</b> .
21	Ma soeur s'appelle Chloé, mais je préfère l'appeler Coco.	My little sister is called Chloé, <b>but</b> I prefer to call her Coco
24	Elle a huit ans mais elle va bientôt avoir neuf ans en mars prochain.	She (has) eight years old, <b>but</b> she is soon going to (have) nine years old <b>next</b> march.
25	Chloé est assez enrobée, mais elle n'est pas très forte,	Chloé is quite chubby, <b>but</b> she is not very strong,
26	elle a les cheveux longs et châtain et les yeux bruns.	she has the hair long and light brown and the eyes brown.
27	Je l'aime parce qu'elle est marrante, généreuse et attentionnée.	<b>I love her because</b> she is funny, generous and caring.
28	Mais, quand elle avait quatre ans... oh mon Dieu!	<b>but when she (had) four years old, oh my God!</b>
29	elle était un vrai cauchemard!	<b>she was a real nightmare!</b>
30	J'ai aussi un animal domestique, c'est un chien et	I also have a pet, it is a dog <b>and</b>
31	il s'appelle Stromae, comme le chanteur!	he is called Stromae, like the singer!
32	Il est beige et marron, très gros et il mange beaucoup.	He is beige and brown, very fat and he eats a lot.
33	Ma soeur pense qu'il est Il est moche... comme un pou!	My sister thinks that he is 'as ugly as a headlice'.
34	Et toi ? Comment es-tu ?	And you? What are you like?
35	A bientôt!	See you later!

## Semana 1

### ¿Qué estudias? What do you study?

Estudio...	I study...	informática	ICT
ciencias	science	inglés	English
dibujo	art	matemáticas	maths
educación física	PE	música	music
español	Spanish	religión	RE
francés	French	teatro	drama
geografía	geography	tecnología	technology
historia	history		

## Semana 2

### ¿Cuál es tu día favorito? What is your favourite day?

Mi día favorito es el lunes/ el martes.	My favourite day is Monday/Tuesday.	Porque...	Because...
Los lunes/martes estudio...	On Mondays/Tuesdays I study...	por la mañana	in the morning
¿Por qué?	Why?	por la tarde	in the afternoon
		estudiamos	we study
		no estudio	I don't study

## Semana 3

### Opiniones Opinions

¿Te gusta el dibujo?	Do you like art?	aburrido/a	boring
Sí, me gusta (mucho) el dibujo.	Yes, I like art (a lot).	difícil	difficult
No, no me gusta (nada) el dibujo.	No, I don't like art (at all).	divertido/a	funny
¿Te gustan las ciencias?	Do you like science?	fácil	easy
Sí, me encantan las ciencias.	Yes, I love science.	importante	important
		interesante	interesting
		práctico/a	practical
		útil	useful

## Semana 4

### Los profesores Teachers

El profesor/La profesora es...	The teacher is...	raro/a	odd
paciente	patient	severo/a	strict

### ¿Qué hay en tu insti? What is there in your school?

En mi insti hay...	In my school, there is...	una clase de informática	an ICT room
un campo de fútbol	a football field	una piscina	a swimming pool
un comedor	a dining hall	unos laboratorios	some laboratories
un gimnasio	a gymnasium	unas clases	some classrooms
un patio	a playground	No hay piscina.	There isn't a swimming pool.
una biblioteca	a library		

## Semana 5

### ¿Cómo es tu insti? What's your school like?

Es...	It's...	grande	big
antiguo/a	old	horrible	horrible
bonito/a	nice	moderno/a	modern
bueno/a	good	pequeño/a	small
feo/a	ugly		

### ¿Qué haces durante el recreo? What do you do during break?

Como...	I eat...	Bebo...	I drink...
un bocadillo	a sandwich	agua	water
unos caramelos	some sweets	un refresco	a fizzy drink
chicle	chewing gum	un zumo	a juice
una chocolatina	a chocolate bar	Leo mis SMS.	I read my text messages.
fruta	fruit	Escribo SMS.	I write text messages.
unas patatas fritas	some crisps	Nunca hago los deberes.	I never do homework.

## Semana 6

### Expresiones de tiempo Time expressions

normalmente	normally	primero	first
a veces	sometimes	luego	then

### Palabras muy frecuentes High-frequency words

algo	something	¿Por qué?	Why?
donde	where	porque	because
hay	there is/there are	también	also, too
o	or	tampoco	nor/neither
pero	but	y	and

### Pronouns

yo – I  
 tú – you  
 él/ella – he/she  
 Usted – you  
 (polite, sing.)  
 nosotros – we  
 vosotros – you  
 (fam. pl.)  
 ellos/ellas – they  
 Ustedes – you  
 (polite, pl.)

### Opinions

Pienso que – I think that  
 Creo que – I believe that  
 Me parece que – it seems that..

### Time words

ahora – now  
 antes – before  
 después – after  
 hoy – today  
 ayer – yesterday  
 mañana – tomorrow  
 otra vez - again  
 siempre – always  
 a menudo – often  
 a veces – sometimes  
 nunca – never  
 la semana pasada – last week  
 la semana que viene – next week

**tener – to have**

tengo	I have
tienes	you have
tiene	he/she/you have (pol.sing)
tenemos	we have
tenéis	you have (fam.pl.)
tienen	they/you have (pol.pl.)

**ser – to be**

soy	I am
eres	you are
es	he/she is/you are (pol.sing)
somos	we are
sois	you are (fam.pl.)
son	they/you are (pol.pl.)

**estar – to be**

estoy	I am
estás	you are
está	he/she is/you are (pol.sing)
estamos	we are
estáis	you are (fam.pl.)
están	they/you are (pol.pl.)

**Asking questions**

¿Por qué? – why?  
 ¿Qué? – what?  
 ¿Cuándo? – when?  
 ¿Dónde? – where?  
 ¿Quién? – who?  
 ¿Cuánto(s)? – how much/many?  
 ¿Cómo? – how?

**Referring to things**

una cosa – a thing  
 esto – this  
 eso – that  
 algo (más) – something (else)  
 otro – (an)other  
 mucho – a lot  
 (un) poco – (a) little  
 muy – very  
 todo – all/everything

**Referring to places**

aquí – here  
 allí - there

**Making links**

y – and  
 o – or  
 también – also  
 pero – but  
 porque – because  
 con – with  
 sin - without

**Sentence building**

puedo/puede		I can/he, she can
quiero/quiere		I want to/he, she wants to...
tengo que/tiene que		I have to/he has to...
voy a/va a	+ verb	I'm going to/he is going to...
(no) me (le) gusta		I (don't) like to/he doesn't like to
me (le) encanta		I love to/he loves to...
me (le) gustaría		I/he/she would like to...

**Define:**  
**Bullying**

Bullying is the repeated and intentional behaviours which cause harm to another person, either physically, emotionally or psychologically.

**Define:**  
**Banter**






Banter is the playful exchange of teasing remarks and jokes between friends where all are in on the jokes and enjoy the exchange.

**Define:**  
**By-Stander**

A person who doesn't actively engage in the bullying but watches and doesn't do anything to prevent it.

**Define:**  
**Bully**

A person who engages in bullying type behaviour towards one or more people.

Types of Bullying	
 <p>Physical</p>	<p>The victim is physically and violently assaulted by the bully. This can include being beaten up, pushed and shoved or the physical taking of items from the victim. This sort of bullying is against the law and should be reported to the police.</p>
 <p>Verbal</p>	<p>This can include name calling, snide comments and the spreading of rumours; it can also constitute harassment in some cases which is illegal and should be reported to the police.</p>
 <p>Emotional</p>	<p>Psychological and emotional bullying is difficult to see, but can include the ostracization of the victim from a particular group, tormenting and humiliating the victim.</p>
 <p>Cyber</p>	<p>Cyberbullying is the use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature, but can also include setting up of malicious websites or posting personal and embarrassing images and videos without the persons permission.</p>
 <p>Specific</p>	<p>This the term used to describe bullying based on an specific aspect of the victims identity such as homophobic, transphobic, Bi-phobic bullying but can also include racist bullying and bullying based on religion. All of these types of bullying are illegal.</p>

**Dealing with Bullying**

Remember that it is the victim that determines if they believe the behaviour is bullying not the bully.

- **Tell someone** – don't keep it to yourself, find a trusted adult who you can talk to.
- Don't retaliate, try and ignore them if you can.
- Try not to react in front of the bully.
- Stay with trusted friends who will support you.

**Dealing with Cyber Bullying**

Cyber Bullying can be harder to handle as it anonymous and can impact all aspects of your life.

- **Tell someone** – don't keep it to yourself, find a trusted adult who you can talk to.
- Report the bullying to the website and block the user.
- Do not Retaliate
- Screenshot evidence of the bullying.

**Who Can you turn to for help and Support**

Parents or trusted family members	Teachers or school Staff
The Police	Friends
NSPCC	Helpline: 0808 800 5000 (24 hours, every day) <a href="https://www.nspcc.org.uk">nspcc.org.uk</a>
Childline	Helpline: 0800 1111 (24 hours, every day) <a href="https://www.childline.org.uk">https://www.childline.org.uk</a>
National Bullying Helpline	<a href="https://www.nationalbullyinghelpline.co.uk/">https://www.nationalbullyinghelpline.co.uk/</a>



**Define: Rehabilitation**

Drug users are sent to specialist clinics to help them break their addiction and often the causes of it as well.

**Define: Possession**

Being caught with a small amount of drugs that could reasonably be used by one person.

**Define: intent to Supply**

Being stopped whilst holding drugs and the police have reasonable suspicions that you will share with others or sell.

**Define: Supply**

Being caught selling drugs or medicines to other people.

**Define: Trafficking**

Taking illegal substances from one country to another.

Class	Examples	Sentence for Possession	Sentence for Dealing
<b>Class A</b>	Ecstasy, LSD, heroin, cocaine, crack, magic mushrooms, amphetamines (if prepared for injection).	Up to seven years in prison or an unlimited fine or both.	Up to life in prison or an unlimited fine or both.
<b>Class B</b>	Amphetamines, Methylphenidate (Ritalin),	Up to five years in prison or an unlimited fine or both.	Up to 14 years in prison or an unlimited fine or both.
<b>Class C</b>	Tranquilizers, Cannabis, some painkillers, Gamma hydroxybutyrate (GHB), Ketamine.	Up to two years in prison or an unlimited fine or both.	Up to 14 years in prison or an unlimited fine or both.
<b>Temporary Class</b>	The government can ban new drugs for 1 year under a 'temporary banning order' while they decide how the drugs should be classified.	None, but police can take away a suspected temporary class drug	Up to 14 years in prison, an unlimited fine or both

These are the maximum sentences that could be imposed but there are a number of factors which will determine the sentence given if someone is charged and convicted of a drug offence. In most cases a first-time possession offence will lead to a caution and confiscation. A caution is not a criminal conviction, but it could be used as evidence of bad character if you go to court for another crime.

**Prescription Medications**

The law surrounding the selling of or sharing of prescription medications is ambiguous and is often linked to the type of drug/medicine that is being sold.

If the medicine is on the controlled substance list (e.g. morphine, amphetamines and benzodiazepines) then the person supplying can be subject to the punishments which are for that class of drugs.

It is extremely dangerous to share prescription drugs because of the possible side effects and impacts of other medications that are being taken.

**Consequences of having a drug conviction**

Employment	Having a criminal record for a drug conviction can prevent you from getting jobs in certain fields such as education, working with vulnerable adults, Health professions and legal professions.
Travel	A conviction for a drug offence can prevent travel to certain countries such as the USA and Australia
Education	A criminal record may stop you from enrolling on a course at the university of your choice, as many universities will ask you to declare any criminal convictions on your application and consider this separately from your academic achievements. The nature of the offence, the time that has elapsed since the offence was committed and the potential impact on fellow students and staff will all be considered. Some universities and educational facilities will refuse applications on the grounds of the crime committed.