

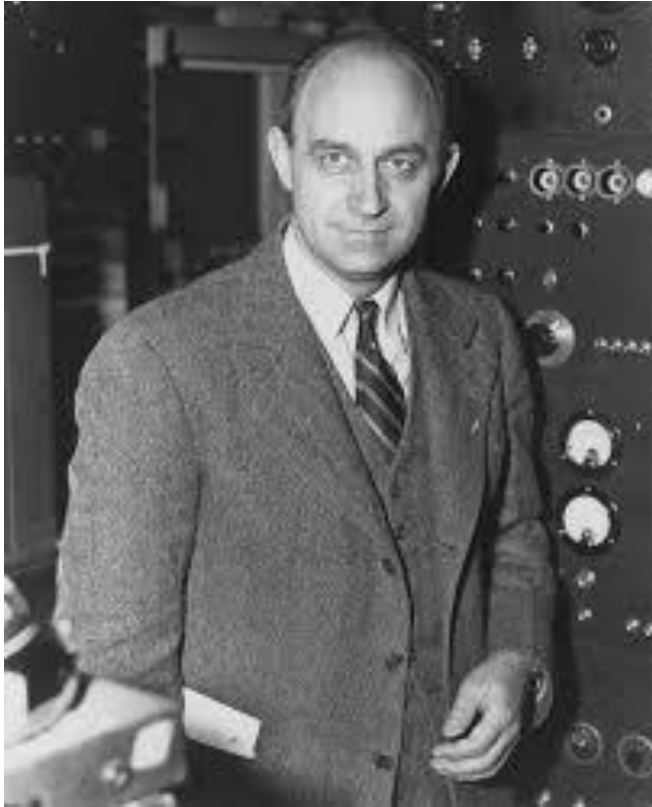
Knowledge



Name _____

Form _____





"Ignorance is never better than knowledge." - Enrico Fermi

(research 10 facts about Enrico Fermi)

Year 7 Knowledge Organiser: Term 2B

Instructions for using your Knowledge Organiser

The timetable on the next page tells you which subjects you should be studying on which days (it doesn't matter if you have that subject on that day or not, you should follow the timetable).

You are to use your exercise book to show the work you have done. Each evening you should start a new page and put the date clearly at the top.

You need to bring your KO and exercise book with you EVERY DAY to school. Your KO and exercise book will be checked regularly in form time.

You will also be tested in your lessons on knowledge from the organisers.



You must use the revision strategy **Look - Say - Cover - Write - Check** to learn the knowledge. You can also use your KOs and book in a number of different ways but you **should not just copy** from the Knowledge Organiser into your book.

Presentation

You should take pride in how you present your work:

- Each page should be clearly dated at the top right hand side with the **Subject** written in the middle e.g. English.
- Half way down the page a line should divide it in two with **Next Subject e.g. Maths** written above the dividing line.
- Each half of the page should be neatly filled with evidence of self-testing. There should be an appropriate amount of work.
- Failure to show pride in your presentation or wasting space on your page with large writing or starting a number of lines down will result in a **negative ATL**.



Year 7 Knowledge Organiser Homework Timetable

You are expected to **study the subjects shown on your timetable each day**. You need to **spend 20 minutes on each subject** and you will need to **evidence your work in your exercise book**.

WEEK A	Subject 1	Subject 2	Subject 3
MONDAY	English	Spanish	Geography
TUESDAY	Science	Maths	PD
WEDNESDAY	History	Music	Science
THURSDAY	RE	Maths	Food
FRIDAY	Computing	Technology	English

WEEK B	Subject 1	Subject 2	Subject 3
MONDAY	English	Drama	Geography
TUESDAY	Science	Maths	RE
WEDNESDAY	History	PE	Science
THURSDAY	RE	Maths	Spanish
FRIDAY	Computing	Art	English



Reading Log

"The more that you read, the more things you will know. The more that you learn, the more places you'll go"

Dr Seuss

Use this reading log to record the books you read and how long you have spent reading.

Week	MON	TUE	WED	THURS	FRI	SAT	SUN	Book(s) read (title and author)	Time spent reading	Parent comment/signature
Week 1										
Week 2										
Week 3										
Week 4										
Week 5										
Week 6										



Science Fiction narratives are stories that are written about advances in science and technology.

Task 1. Overview

- They are often futuristic (set in the future), sometimes on faraway worlds and focus on topics such as inventions, space and robots.
- -Distant space travel and time travel are often possible in science fiction stories.
- -Science fiction stories often use imagination to predict what life may be like in the future. They are designed to entertain the reader, but also to give warnings and ideas about the future, e.g. how we handle time travel/ artificial intelligence, etc.
- -Science fiction differs from fantasy because science fiction contains things that are possible - it is just that the inventions and discoveries have not happened yet.

Content

Task 2: Setting

- The setting is the place where the story takes place.
- The setting is futuristic. It is normally a place that is imagined. Sometimes a utopian (perfect) future is shown, but often it is a dystopian future (a place with suffering and injustice) to give a warning to people today.
- e.g. Earth in the future, Mars, space, a faraway planet, the Moon.
- Try to immerse your readers in your setting, through using a range of descriptive techniques (top right) to appeal to the reader's five senses.

Task 2: Characters

- Protagonists are the main characters who the story is about. They are often the hero of the story. Heroes have lots of good qualities, e.g. kindness, bravery, confidence. However, they sometimes also have a flaw, e.g. recklessness, lack of fear
- Villains have bad features, e.g. sneakiness, meanness. Something may have happened to have turned them bad.
- Sidekicks help the hero through the adventure and are very loyal. Guides are characters who give the hero information to help them.

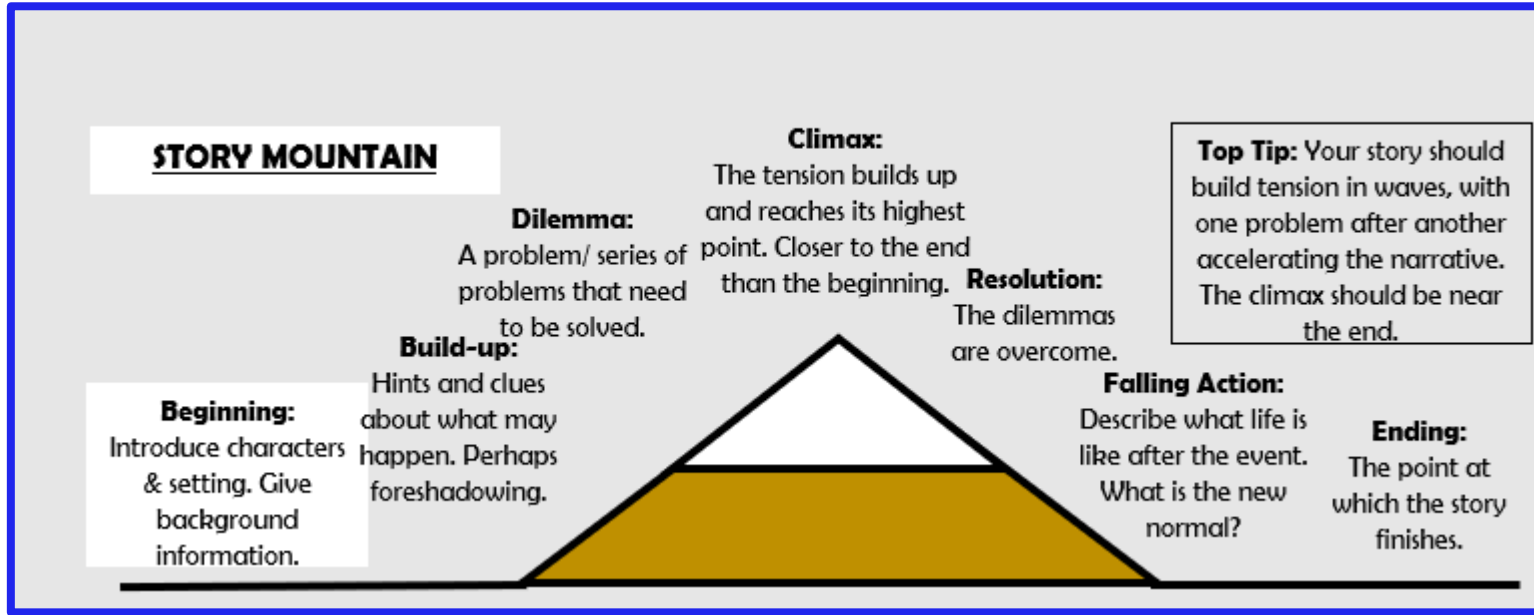
Task 3: Quest

There needs to be a reason for the science fiction to take place. This is called the quest or the mission. There needs to be a build-up as the quest becomes clear. The quest may be to save someone, or perhaps to find a special object. It may be forced by the actions of the villain, or it may be to eliminate/ improve the dystopian life. The quest means normally leads the hero on a journey away from home. On this journey, they face many different dangers before facing the villain or biggest danger. At the end of the quest, the characters often learn something about themselves, others, or the world. The story should utilise a clever mix between action, dialogue and description. Too much of any one of these features can make the story dull or repetitive.

Year 7 English Term 2B: Science Fiction

Task 4: Structure- How do I set my writing out?

Your adventure story should be organised into clear paragraphs that discuss a main subject. A new paragraph should be started when there is a change of time, place or subject. Paragraphs should be consistently shown by either an indent or leaving a line. Use connectives and other cohesive devices to link paragraphs.



Task 5: Vocabulary box

astronaut atmosphere
future intelligence universe
forcefield
advance transport hover
transmit destroy orbit
harm
mysteriously flawlessly
instantly anxiously
heroically
hostile grotesque
unfamiliar mystical
advanced modern
unknown faraway strange
mystical unfamiliar

Important Vocabulary

Science Fiction Direct Speech Characterisation Utopia/ Dystopia Tension Climax Foreshadowing Flashback Moral Message

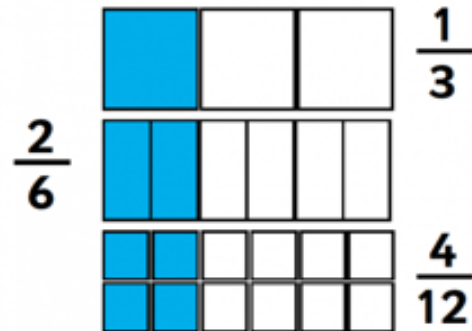


Equivalent Fractions

Equivalent Fractions can be found by using a Fraction wall like this:



Looking at the diagrams below, the shaded part is always the same size, but it is given using three different, but **Equivalent Fractions**



Adding and Subtracting Fractions

We can only add and subtract fractions when the denominators are the same

$$\frac{3}{5} + \frac{1}{5} = \frac{3+1}{5} = \frac{4}{5}$$

We can show this calculation in a diagram:



But what would we do if the denominators aren't the same?

- We use equivalent fractions to re-write the fractions we want to add or subtract
- Need to pick a sensible number for the denominator, that will work for the fractions in the question
- We do the operation on the fractions with matching denominators

For example:

$$\frac{3}{4} + \frac{1}{8}$$

We need to change $\frac{3}{4}$ into an equivalent fraction with a denominator of 8.

$$\frac{3}{4} = \frac{6}{8}$$

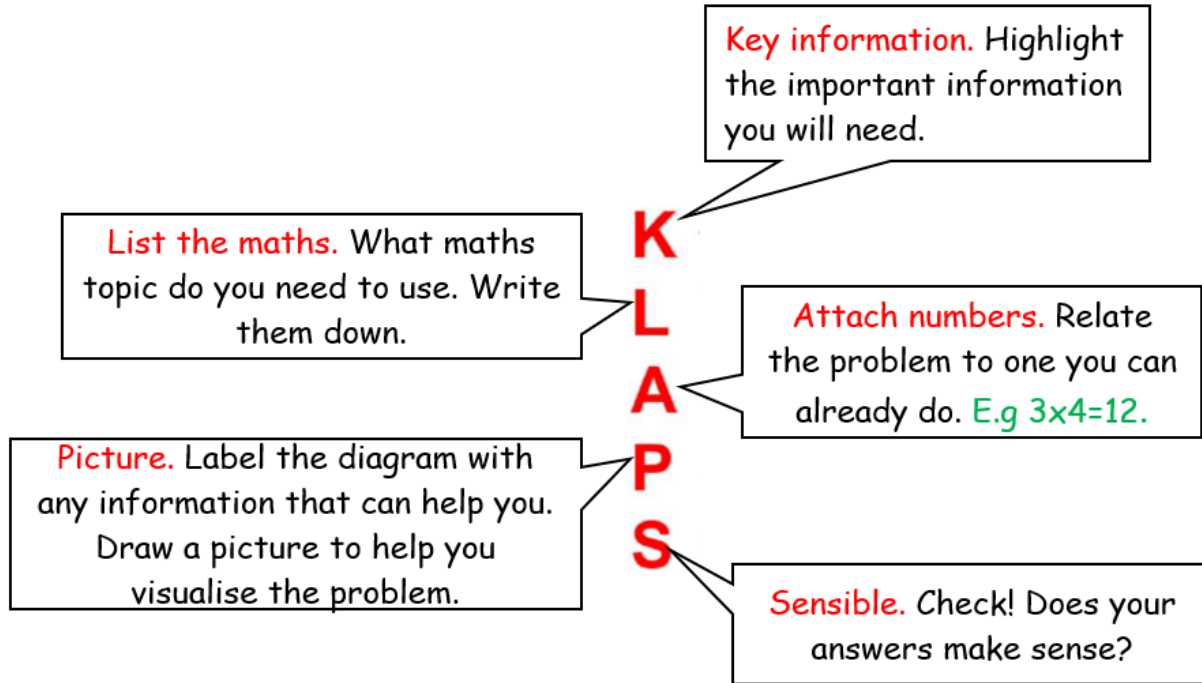
×2

Now we have:

$$\frac{6}{8} + \frac{1}{8} = \frac{7}{8}$$



TOPIC - Problem solving at St Cuthbert's.



Don't forget

Always show your working out
Never round half way through a question

Don't forget

Always show your working out
Never round half way through a question

Key Words

Take care with your spellings of these key words

Equivalent

Numerator

Denominator

Parts of a Fraction

$$\frac{3}{5}$$

← numerator
← denominator



Key Words

Take care with your spellings of these key words

Acute

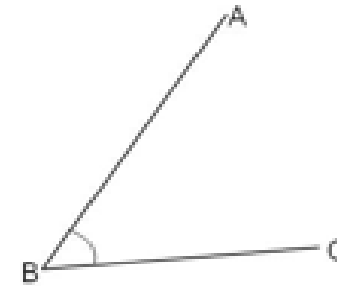
Obtuse

Reflect

Parallel

Perpendicular

Angle Notation



To write the marked angle, we could put:

\widehat{ABC}

or

$\angle ABC$

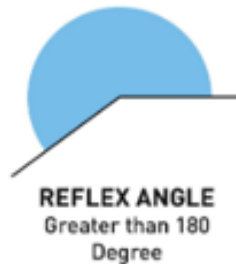
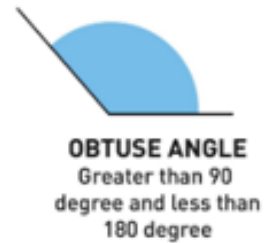


Parallel and Perpendicular Lines

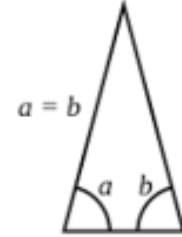
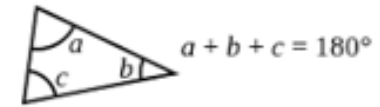
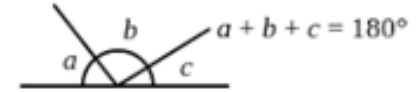
Parallel lines are lines in the same plane that never intersect. They are always the same distance apart.



Perpendicular lines are lines that meet at a right angle, that is, at an angle that measures 90° .



Angle Facts



- Angles on a straight line will add up to 180°
- Angles in a Triangle will add up to 180°
- In an Isosceles Triangle, two of the angles will be the same size



The Periodic Table

A list of all the known elements, arranged into groups (columns going down) and periods (rows going across).

Metals are to the left and non-metals to the right.

Elements in each group have similar properties.

Periodic Table of the Elements

1																	18																												
1 H Hydrogen 1.008											13 B Boron 10.811	14 C Carbon 12.011	15 N Nitrogen 14.007	16 O Oxygen 15.999	17 F Fluorine 18.998	2 He Helium 4.003																													
3 Li Lithium 6.941	4 Be Beryllium 9.012											5 Al Aluminum 26.982	6 Si Silicon 28.086	7 P Phosphorus 30.974	8 S Sulfur 32.066	9 Cl Chlorine 35.453	10 Ne Neon 20.180																												
11 Na Sodium 22.990	12 Mg Magnesium 24.305	3	4	5	6	7	8	9	10	11	12	13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.066	17 Cl Chlorine 35.453	18 Ar Argon 39.948																												
19 K Potassium 39.098	20 Ca Calcium 40.078	21 Sc Scandium 44.956	22 Ti Titanium 47.88	23 V Vanadium 50.942	24 Cr Chromium 51.996	25 Mn Manganese 54.938	26 Fe Iron 55.845	27 Co Cobalt 58.933	28 Ni Nickel 58.693	29 Cu Copper 63.546	30 Zn Zinc 65.38	31 Ga Gallium 69.723	32 Ge Germanium 72.64	33 As Arsenic 74.922	34 Se Selenium 78.96	35 Br Bromine 79.904	36 Kr Krypton 83.80																												
37 Rb Rubidium 84.464	38 Sr Strontium 87.62	39 Y Yttrium 88.906	40 Zr Zirconium 91.224	41 Nb Niobium 92.906	42 Mo Molybdenum 95.94	43 Tc Technetium 98.907	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.905	46 Pd Palladium 106.42	47 Ag Silver 107.868	48 Cd Cadmium 112.411	49 In Indium 114.818	50 Sn Tin 118.71	51 Sb Antimony 121.760	52 Te Tellurium 127.6	53 I Iodine 126.904	54 Xe Xenon 131.29																												
55 Cs Cesium 132.905	56 Ba Barium 137.327	71 Lu Lutetium 174.967	72 Hf Hafnium 178.49	73 Ta Tantalum 180.948	74 W Tungsten 183.85	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.967	80 Hg Mercury 200.59	81 Tl Thallium 204.383	82 Pb Lead 207.2	83 Bi Bismuth 208.980	84 Po Polonium [209]	85 At Astatine 209	86 Rn Radon 222.018																												
87 Fr Francium 223.020	88 Ra Radium 226.025	103 Lr Lawrencium [262]	104 Rf Rutherfordium [261]	105 Db Dubnium [262]	106 Sg Seaborgium [266]	107 Bh Bohrium [264]	108 Hs Hassium [269]	109 Mt Meitnerium [268]	110 Ds Darmstadtium [289]	111 Rg Roentgenium [272]	112 Cn Copernicium [277]	113 Uut Ununtrium unknown	114 Fl Flerovium [289]	115 Uup Ununpentium unknown	116 Lv Livermorium [293]	117 Uus Ununseptium unknown	118 Uuo Ununoctium unknown																												
<table border="1"> <tr> <td>57 La Lanthanum 138.906</td> <td>58 Ce Cerium 140.115</td> <td>59 Pr Praseodymium 140.908</td> <td>60 Nd Neodymium 144.24</td> <td>61 Pm Promethium 144.913</td> <td>62 Sm Samarium 150.36</td> <td>63 Eu Europium 151.966</td> <td>64 Gd Gadolinium 157.25</td> <td>65 Tb Terbium 158.925</td> <td>66 Dy Dysprosium 162.50</td> <td>67 Ho Holmium 164.930</td> <td>68 Er Erbium 167.26</td> <td>69 Tm Thulium 168.934</td> <td>70 Yb Ytterbium 173.04</td> </tr> <tr> <td>89 Ac Actinium 227.028</td> <td>90 Th Thorium 232.038</td> <td>91 Pa Protactinium 231.036</td> <td>92 U Uranium 238.029</td> <td>93 Np Neptunium 237.048</td> <td>94 Pu Plutonium 244.064</td> <td>95 Am Americium 243.061</td> <td>96 Cm Curium 247.070</td> <td>97 Bk Berkelium 247.070</td> <td>98 Cf Californium 251.080</td> <td>99 Es Einsteinium [254]</td> <td>100 Fm Fermium 257.095</td> <td>101 Md Mendelevium 258.1</td> <td>102 No Nobelium 259.101</td> </tr> </table>																		57 La Lanthanum 138.906	58 Ce Cerium 140.115	59 Pr Praseodymium 140.908	60 Nd Neodymium 144.24	61 Pm Promethium 144.913	62 Sm Samarium 150.36	63 Eu Europium 151.966	64 Gd Gadolinium 157.25	65 Tb Terbium 158.925	66 Dy Dysprosium 162.50	67 Ho Holmium 164.930	68 Er Erbium 167.26	69 Tm Thulium 168.934	70 Yb Ytterbium 173.04	89 Ac Actinium 227.028	90 Th Thorium 232.038	91 Pa Protactinium 231.036	92 U Uranium 238.029	93 Np Neptunium 237.048	94 Pu Plutonium 244.064	95 Am Americium 243.061	96 Cm Curium 247.070	97 Bk Berkelium 247.070	98 Cf Californium 251.080	99 Es Einsteinium [254]	100 Fm Fermium 257.095	101 Md Mendelevium 258.1	102 No Nobelium 259.101
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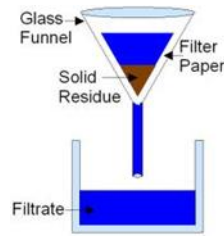
Evaporation



Salt water can be heated to evaporate the water, leaving pure salt.

Insoluble solids can be filtered out of a solution.

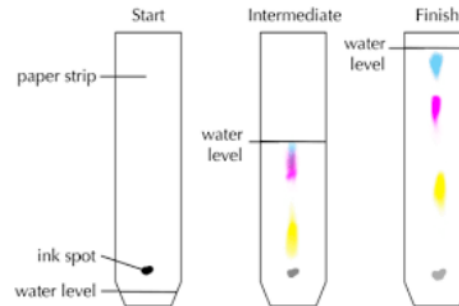
Filtration



Chromatography

A spot of mixture is placed at the bottom of the chromatography paper which is then placed into a solvent, e.g. water.

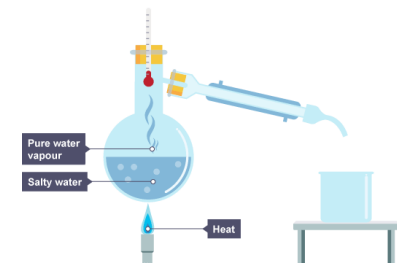
The solvent moves up the paper carrying the components of the mixture. As these move at different rates they separate out.



Distillation

Separating liquid mixtures where each part has different boiling points (crude oil), or separating liquids from dissolved solids (water from sea water).

The mixture is heated until the water evaporates. Water vapour rises, then cools and condenses into a separate container.



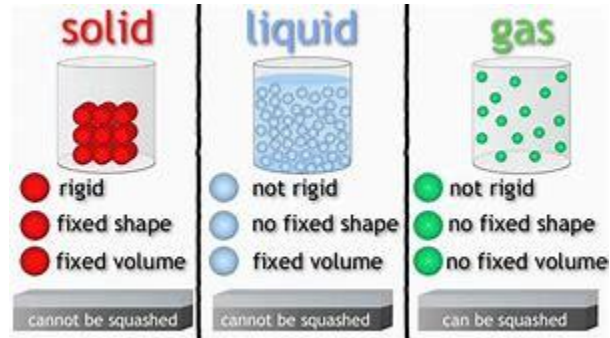
Key Word	Definition
Element	Made of one type of atom. This can be a single atom or a molecule, e.g. oxygen.
Compound	Two or more different atoms chemically joined together to form a molecule, e.g. carbon dioxide.
Mixture	Two or more atoms or molecules, not chemically joined, e.g. air, seawater.
Physical change	Reversible changes in which no new products are formed, e.g. state changes.
Chemical change	Non-reversible changes where new products are formed, e.g. combustion.
Pure	A material made up of only one type of particle (element or compound).
Impure	A material made of more than one type of particle (mixtures).
Evaporation	A change of state from liquid to gas.
Distillation	A process for separating liquid solutions. The solvent is heated and the evaporated gas collected and cooled so it condenses.
Filtration	A mixture is poured through a mesh, separating insoluble solids from the solution.
Chromatography	Used to separate mixtures of coloured compounds.
Solute	The substance that dissolves into the solvent.
Solvent	For example water, it dissolves the solute.
Solution	The solute dissolved into the solvent.
Solubility	How easy it is for a substance to dissolve.
Saturated solution	A solution in which no more solute can dissolve.



Year 7 Science - Term 2B

Particle Theory

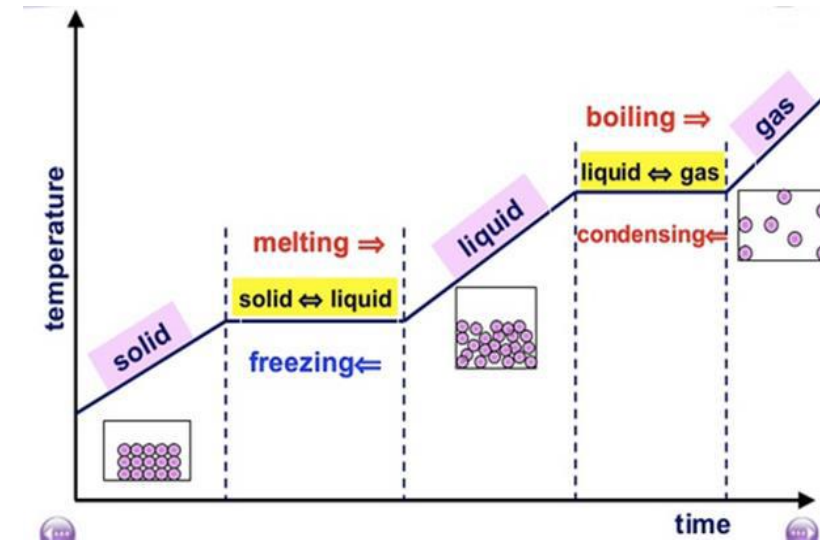
All matter is made up of particles, which are found in three states of matter. Each state has a different arrangement of particles which move in different ways.



In solids, particles are arranged in a regular pattern and are held together by strong bonds. They vibrate in a fixed position.

In liquids, particles are arranged randomly but are still touching each other. Particles can slide past each other and move around.

In gases, particles are far apart and are arranged randomly. Particles carry a lot of energy and they move in different directions at high speed.



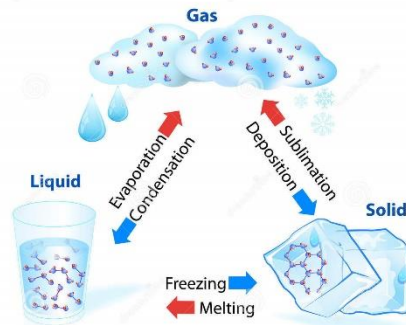
Year 7 Science - Term 2B

Changes of State

When particles gain or lose energy the substance changes state.

Gaining energy causes particles to move faster and further apart, overcoming the forces between the particles.

Losing energy causes particles to move slower and closer together.



Diffusion

The movement of particles from a high concentration to a low concentration, in liquids and gases. For example oxygen diffuses from our blood into our cells.

Energy Transfer Graph

The graph shows how the temperature of a substance changes as heat is applied.

When the line is sloped the temperature of the substance is increasing.

When the line is flat the temperature stays the same even though heat energy is being applied. This is because the energy is being used to make the particles change state.

During the change of state the temperature will stay the same until the state change is complete, e.g. all liquid has turned into gas.



Year 7 Religious Education - Term 2B: Desert to Garden

We know that sometimes it is hard to explain things; the answer or explanation is complicated, or even impossible to understand. We know that it is difficult to talk about what we mean by 'God', and it is difficult to understand the Trinity - they are mysteries. This term we are going to investigate the **'Paschal Mystery'**; this is the mystery of how Jesus' death and resurrection was able to bring salvation to the world

Section 1:

Through the Church Catholics can receive sacraments, which give them the spiritual strength they need to live a good and selfless life, like Jesus did. At the heart of catholic life is the most important sacrament - the Eucharist. There are different names for this sacrament and each name tells us something about its importance; we will investigate some of these different names.

The Eucharist is a re-enactment of the Last Supper which was itself a Passover meal - we will explore the importance of both of these events for Catholics today.

Section 2:

Catholics believe that through the Eucharist we can experience the real presence of Jesus, and share in Jesus' sacrifice on the cross.

We will find out about Blessed Carlo Acutis (one of our year saints) and how Eucharist impacted his life.

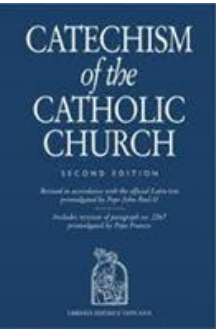



The Catholic Church teaches that the Eucharist is the greatest gift of all, allowing people to have a close connection with God, and also with each other. United by this sacrament Catholics believe they will be saved from death and will have eternal life with God.

The dismissal at the end of mass is an instruction to carry Jesus out into the world, and live in the way Jesus taught.

Go!



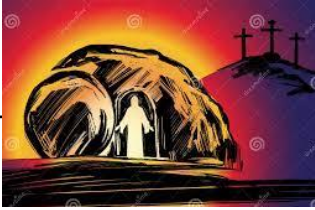


St Cuthbert's Catholic High School
Live life in all its fullness

Sources of Wisdom and Authority (SOWAA)	
(1)	 <p>Eucharist is 'the source and summit of the Christian life'</p>
(2)	<p>The Paschal mystery of Christ's cross and resurrection stands at the centre of the good news that the apostles and the Church following them, are to proclaim to the world'</p>
(3)	<p>'The seven sacraments touch all of the stages and all of the important moments of Christian life'</p>
(4)	<p>'There takes place a change of the whole substance of the bread.....and of the wine.....'</p> 
(5)	<p>'this is my body which is given for you. Do this in remembrance of me' Luke's Gospel</p>
(6)	<p>'Take the blood and put it on the doorposts.... It is the Lord's Passover. I will pass through the land of Egypt that night and I will strike all the firstborn.... When I see the blood (on the houses) I will Passover....this day shall be for you a memorial day, and you shall keep it as a feast to the Lord'</p> <p>Exodus 12</p> 
(7)	<p>"The Eucharist is my highway to heaven." Blessed Carlo Acutis</p> 

Big Questions:



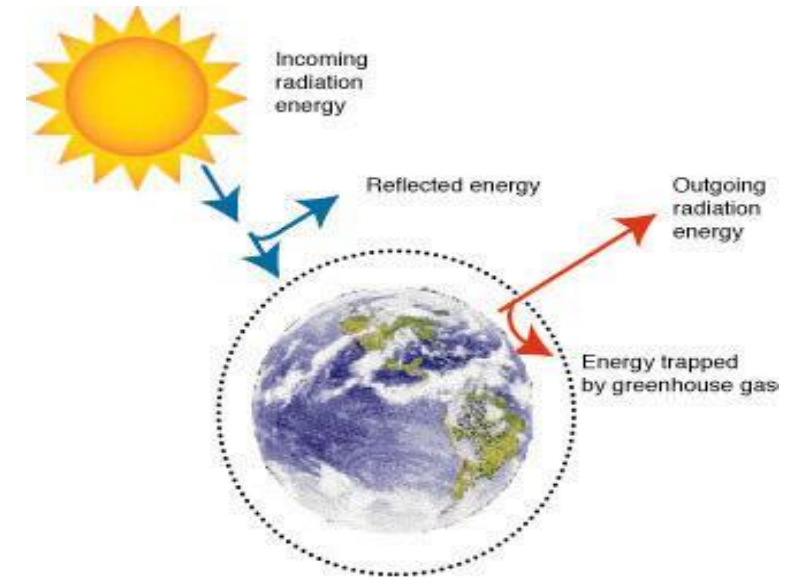
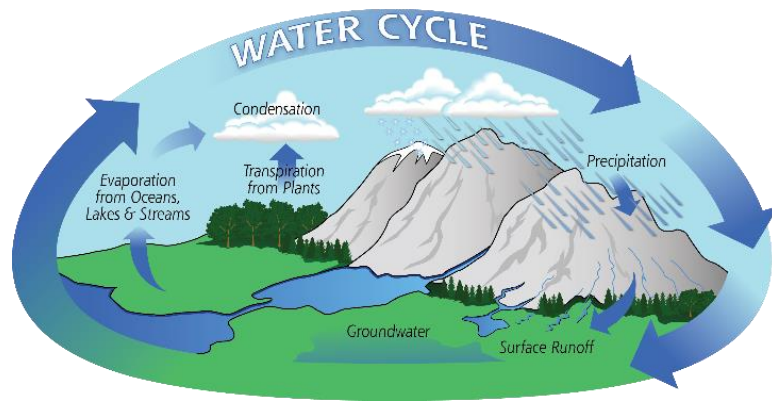
- What is the Paschal Mystery?
- What are the sacraments and why are they important to Christians?
- How can Jesus be present in the world today?
- How are we supposed to understand things that are a mystery?

Key words	Definition
Paschal Mystery	 <p>The belief that Jesus' death and resurrection brings salvation to every human being</p>
Resurrection	
Salvation	Being saved from sin, so we can have eternal life with God
Sacrament	 <p>Visible Signs of Gods grace (his love for us, that he gives us even if we don't deserve it!) - through the sacraments we can begin to understand God's love for us</p>
Passover	
Eucharist	 <p>The sacrament in which Catholics receive the body and blood of Christ, through bread and wine; literally means 'thanksgiving'</p>
Holy Communion / Lord's Supper / Mass / Breaking of Bread	
Transubstantiation	Different names for the Eucharist; each name teaches us something different about the Eucharist
Blessed sacrament	Catholics believe that the bread and wine become the body and blood of Jesus when it is consecrated or blessed
	The body and blood of Christ, in the Eucharist

Complete the learning homework for each week; work in your yellow book		March 11th	Section 2
Feb 26th	Key words and definitions	March 18th	SOWAA 1 - 4 (all from Catechism)
March 4th	Section 1	March 25th	SOWAA 5 - 7



Year 7 Geography- Term 2B: Climate change and hazardous weather



Air mass: A large body of air that has similar temperature, pressure and moisture properties.

Anticyclone: High pressure system in which air descends to give calm conditions and clear skies. Associated with summer heatwaves and winter frosts and fogs.

Atmosphere: The envelope of air surrounding the Earth and bound to it by gravity.

Climate: Long-term weather averages (over at least a year)

Climate Change: Climate change refers to any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among others, that occur over several decades or longer.

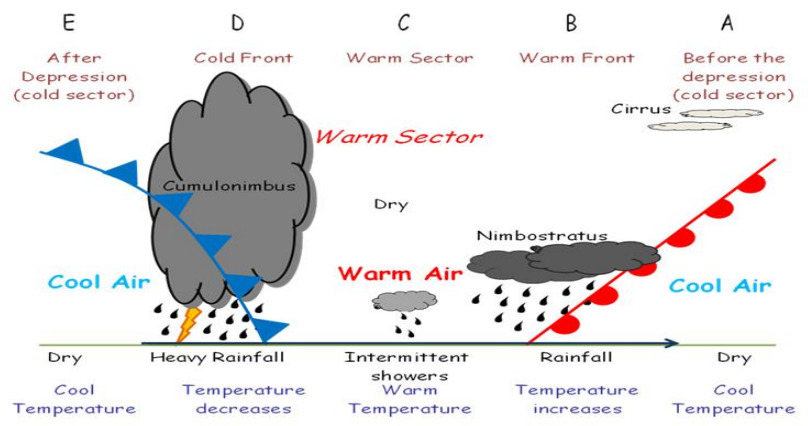
Convection: Convection is the circular motion that happens when warmer air or liquid — which has faster moving molecules, making it less dense — rises, while the cooler air or liquid drops down.

Depression (cyclone, low, low-pressure area): Area in the atmosphere in which the pressures are lower than those of the surrounding region at the same level. In its development a depression usually has the following phases. A wave (young) depression forms and moves along a front. Mature depressions have well-developed warm sectors and both cold and warm fronts. An occluded depression is that within which there has developed an occluded front.

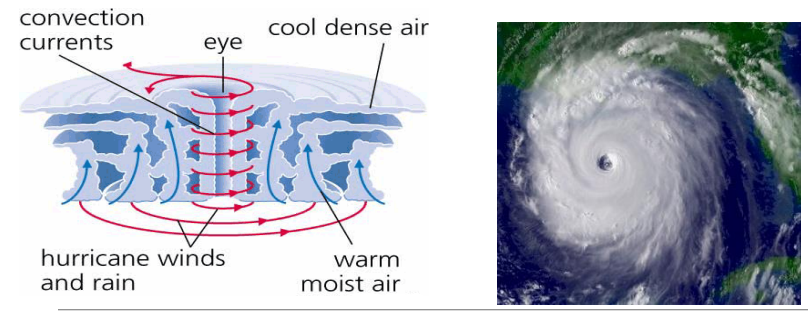
Evaporation: The physical process by which a liquid or solid substance is transformed to a gas; the opposite of condensation.



Passage of a depression



Structure of a hurricane



Global Warming: The recent and ongoing global average increase in temperature near the Earth's surface.

Hurricane: A hurricane is a powerful, rotating storm that forms over warm oceans near the equator in the Atlantic Ocean, the Caribbean Sea, or the eastern Pacific Ocean. Hurricanes have strong, counter clockwise winds (at least 74 miles per hour), a huge amount of rain, low air pressure, thunder and lightning.

Hurricane eye: Hurricane winds blow in a spiral around the calm, roughly circular center called the eye. In the eye, which is about 20 - 30 miles wide, it is relatively calm and there is little or no rain. The eye is the warmest part of the storm.

Precipitation: Any of all of the forms of water particles, whether liquid or solid, that fall from the atmosphere and reach the ground. The forms of precipitation are: rain, drizzle, snow, snow grains, snow pellets, diamond dust, hail, and ice pellets.

Prevailing wind: The most common wind direction for a particular location.

Relief rainfall: Formed when air is forced to rise over relief features such as hills or mountains. Cooling and condensation occurs as the air rises.

Storm surge: A storm surge is a rise in the ocean as the result of strong winds from a hurricane or other intense storm. A storm surge can cause dangerous flooding, especially when a storm surge coincides with a high tide. The height of the storm surge waters is the difference between the level of the ocean and the level that would have occurred normally. A storm surge is usually estimated by subtracting the regular high tide level from the observed storm tide - it can be 15 feet tall or more.

Temperature: A physical quantity characterizing the mean random motion of molecules in a physical body. In other words, it is a measure of the degree of hotness or coldness of a substance.

Water vapour: Water substance in vapour (gaseous) form; one of the most important of all constituents of the atmosphere.

Weather: The state of the atmosphere, mainly with respect to its effects upon life and human activities. As distinguished from climate, weather consists of the short-term (minutes to about 15 days) variations of the atmosphere state.

Wind: movement of air caused by changes in temperature and air pressure. Winds are always identified by the compass direction from which they blow.

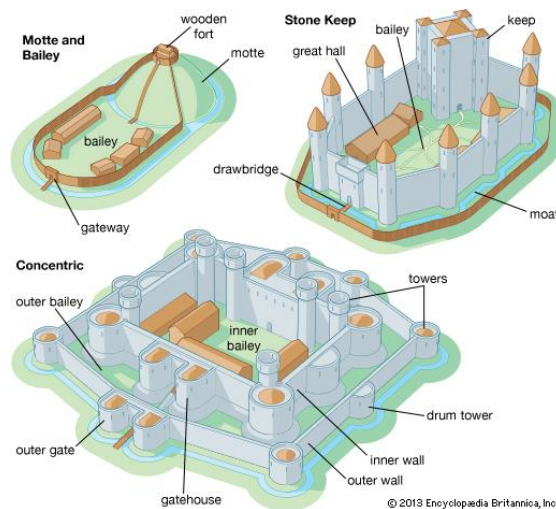
Castles 1

William also kept control by building castles throughout England. Over time 3 types of castles developed throughout Britain.

Motte and Bailey - The first castles built to help fight against rebellions. They were built quickly and made out of wood, meaning that they were not very strong, and could be easily destroyed.

The Bailey was on flat land, where majority of the people lived. The Motte was the higher land of the castle, where the fort was.

Stone Keep - This castle was now made out of stone and had towers as a form of defence. The main part of the castle was the Keep, a large square tower, used as the main defence.

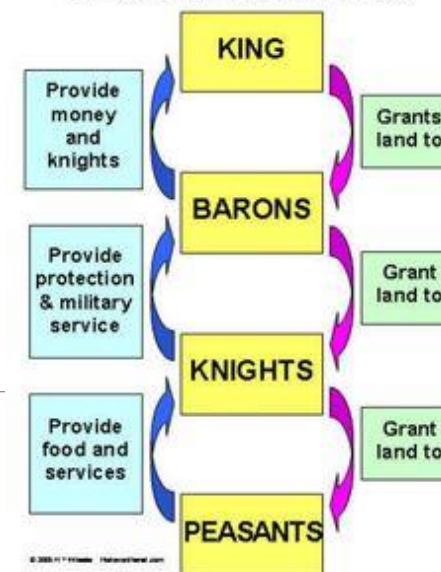


The Feudal System 2

After taking the throne in 1066, William has a few problems: 1. He does not trust the English lords, who do not like him. 2. He has to force the English to accept him as King. Many of the English are rebelling and fighting against William. 3. He has to pay the French Knights who helped him to win the throne.

Solution: William crushes the rebellions and took the land away from the English lords and gave it to his supporters instead. William now has his supporters helping him to control the whole country. William also sets up the Feudal System. This forces the English to give William their taxes and promises of loyalty, in return for protection and land to farm. William is at the top of the system, as he holds all the land and money, which he gives to the Barons. They promise William their money, soldiers and loyalty. They give the land to the Knights in return for loyalty and military service. Finally the knights give the land to the peasants. The peasants farm the land and give food, money and services to the knights.

FEUDAL SYSTEM



3 The Domesday Book

In 1086, William sent out surveyors to every part of England, with orders to list:

- how much land was there
- who had owned it in 1066, and who owned it now
- what was the place like, and who lived there
- how much it was worth in 1066 and how much now

William did this to allow him to effectively tax the land and earn money.

William also needed to have an idea of what could be seized from landowners who did not show him loyalty.

4

Key word	Definition
Social class	Social Class refers to separations in society. These separations can be based on how much wealth, power or knowledge somebody has. People in the same social class typically share a similar level of wealth.
Invasion	The movement of an army into a region, usually in a hostile attack that's part of a war or conflict.
Monarchy	A monarchy is a form of government that has a single person known as a monarch at its head. Monarchs use such titles as king, queen, emperor, or empress
Taxation	Taxes are ways that the government can collect money from its citizens to pay for things that the people need, such as schools and roads.
Nobility	The group of people belonging to the highest social class in a country, often the most rich and powerful.
Knights	Someone born of the nobility and trained to fight, usually in heavy metal armour.
Rebellion	An effort by many people to change the government or leader of a country by the use of protest or violence.
Feudal system	The social structure of Medieval England.
Baron	Noble land owner that pledged their loyalty to the King.
Villein	Peasant at the bottom of the Feudal system.

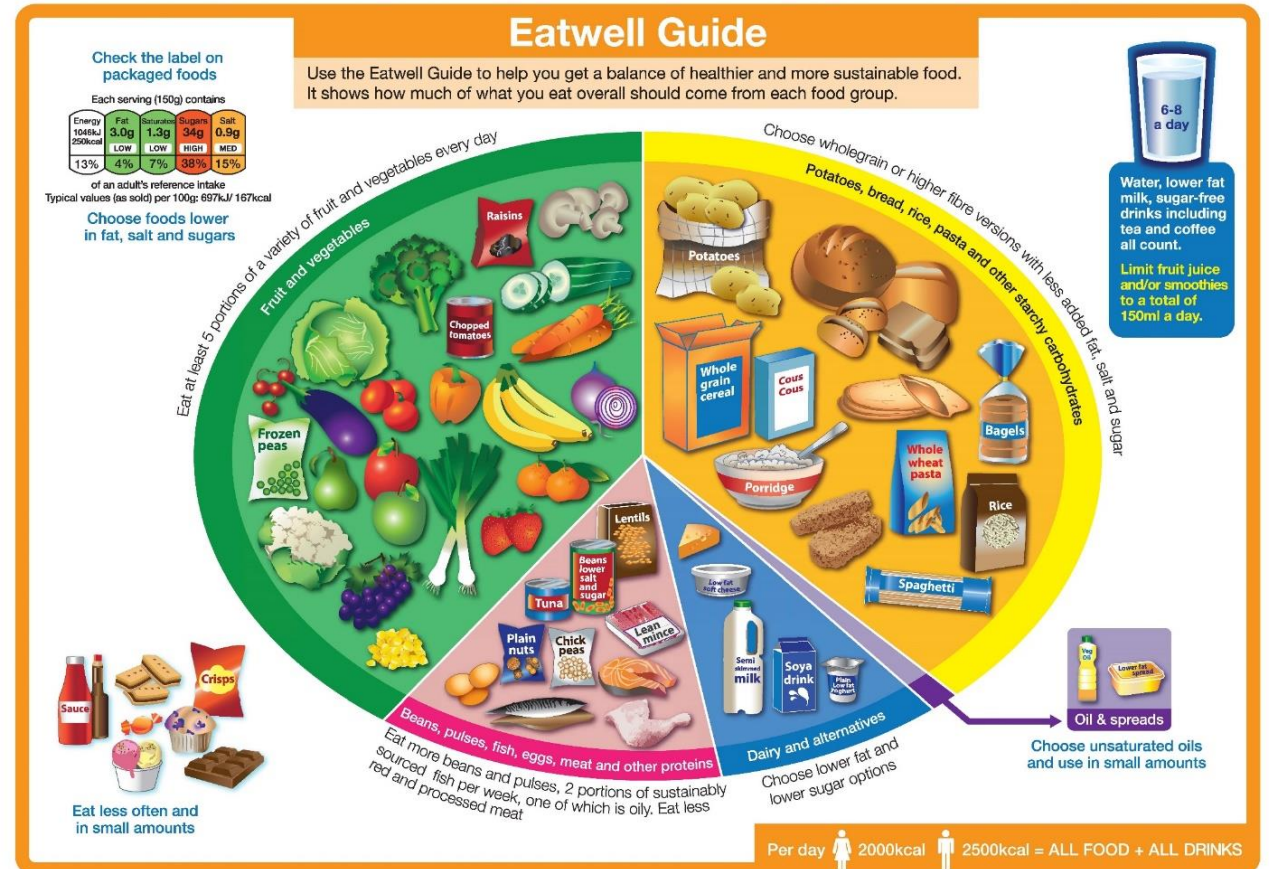


Year 7 PD - Term 2B: Healthy Lifestyles

Healthy diet: Remember the proportions for each section and some types of food for each. Then think about how you could improve your diet.

Physical Activity:

- You should aim to be physically active every day and reduce the amount of time you are sat down.
- You should aim to do 60 minutes of moderate exercise per day like brisk walking or riding your bike; something that raises your heart rate and makes you feel warmer.



Source: Public Health England in association with the Welsh Government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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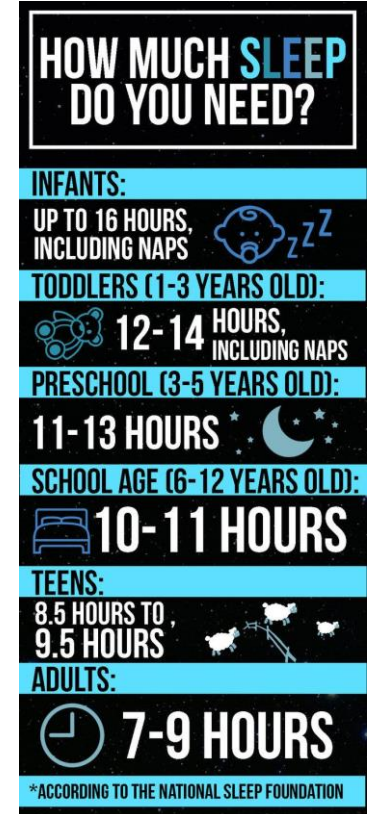
Sleep: Work out what time you need to go to bed to get the correct amount of sleep. Find out why sleep is important.



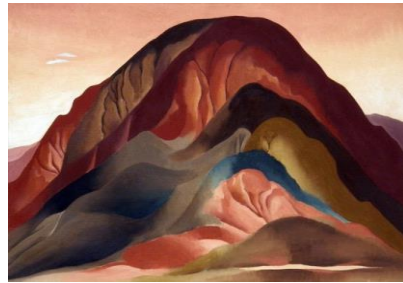
Emotional/Mental Health:

We need to keep our minds healthy as well as our bodies. Here are some ways to ensure you are looking after your mind:

- **Be active** - get some vigorous physical activity every day
- **Connect** - with other people, not through social media but face to face. Have some conversations. Feel valued.
- **Give** - to others. This doesn't have to be an object, it could be time. For example visiting an elderly neighbour or playing with younger brothers and sisters.
- **Take notice** - of things around you like the wind on your face or the noises you can hear.
- **Keep learning** - seek out new experiences. It's good to be curious and challenge yourself.



Artist Focus: Georgia O'Keefe



Georgia O'Keefe (November 15, 1887 - March 6, 1986) was an American artist. She was best known for her colourful paintings of enlarged flowers, skulls and landscapes **O'Keefe** has been recognized as the "Mother of American modernism".

O'Keefe was fascinated by the bones and skulls she found in the desert landscapes near where she lived. She said:

'To me they are as beautiful as anything I know...The bones seem to cut sharply to the centre of something that is keenly alive on the desert even though it is vast and empty and untouchable.'

Key Words and Specialist Vocabulary:

Natural Forms: Objects found in nature, shells, leaves, seedpods, flowers for example.

Still Life: An arrangement of objects to draw or paint.

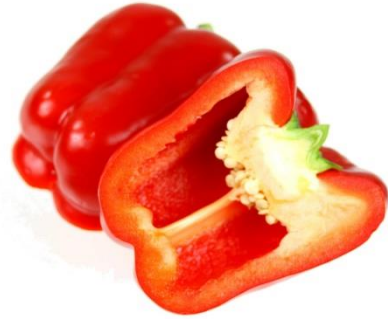
Direct Observational Drawing: Drawings made from looking carefully at something in front of you.

Year 7 Art - Term 2B

Practise your skills:

In this unit of work we will be drawing **natural forms** such as fruits and vegetables as well as shells and seed pods.

Try cutting an orange or a pepper in half and carefully drawing what you see.

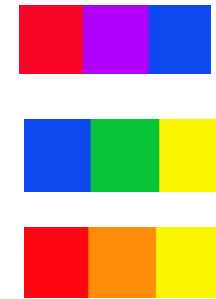


Harmonious Colours

Harmonious colour schemes use colours that are next to each other on the colour wheel. They usually match well and create serene and comfortable designs.



Harmonious colour schemes are often found in nature and are harmonious and pleasing to the eye. Think of beautiful sunsets, and the colours seen in fire for example.



Converting between Bases

1 Binary to Denary

128	64	32	16	8	4	2	1
1	0	0	1	1	0	1	1
<hr/>							
128 + 0 + 0 + 16 + 8 + 0 + 2 + 1							
= 155							

Write the column values out above your binary number. Only add the column value where the binary number is one.

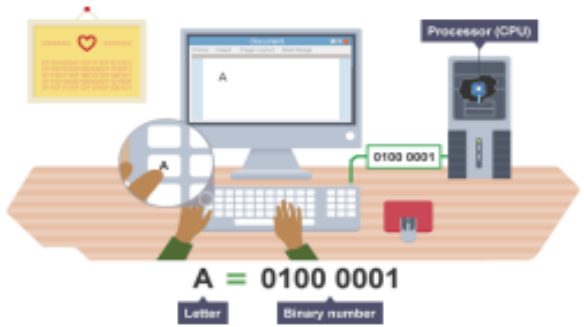
2 Binary to Hexadecimal

Hexadecimal	5F
	↕ ↕
Binary	0101 1111
	↕
Decimal	95

Each hex character is equal to a binary nibble, join the two nibbles together to make your binary number.

Representing Text

When any key on a keyboard is pressed, it needs to be converted into a binary number so that it can be processed by the computer and the typed character can appear on the screen.



Images

In a **bitmap**, the image is divided into a grid of tiny parts, these are called **pixels**

Pixels are the smallest element in an image

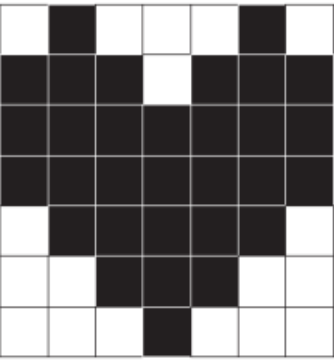
The number of bits used to represent the colour or greyscale value of a pixel is called the **colour depth**.

Example:

						0000000
	■			■		0100010
						0000000
			■			0001000
						0000000
	■			■		0100010
		■	■	■		0011100
						0000000

Binary Bitmap Images

1




Each square is referred to as a pixel. Each pixel can either be on or off. If the pixel is blank usually you would say the value of this pixel is 0 and if the pixel is black then the value of this pixel is 1. Can you work out the binary combination for the image above?

Adding Binary

1

Rules for adding binary:

- 0 + 0 = 0
- 0 + 1 = 1
- 1 + 1 = 10
- 1 + 1 + 1 = 11



Key Vocabulary

1	Storage Capacity	Bit – A single binary digit e.g. 0 or 1
		Nibble – Four binary digits e.g. 1011
		Byte – Eight binary digits e.g. 00110101
2	Binary	This numbering system only uses two digits: 0 which means off and 1 which means on.
3	Denary	This numbering system uses ten digits: 0-9.
4	Hexadecimal	This numbering system uses sixteen characters: 0-9 and the A-F
5	Overflow	When adding binary numbers together if your answer results with more than 8 bits an overflow has occurred. e.g. 111101011

Number conversions (Denary > Binary > Hex)

Binary to denary (01001101)

- Place the binary numbers under the **binary place values** starting from **right to left**
- Add** together the headings **where there is a 1** underneath
- E.g. 64+8+4+1 = 77

128	64	32	16	8	4	2	1
0	1	0	0	1	1	0	1

Denary to binary (56)

- Work from the **left** and attempt to **subtract** the heading from your number
- If you can do it without getting a negative number then put a 1 under the heading and use the answer in the next column
- If you can't put a 0 under the heading and move to the next column

128	64	32	16	8	4	2	1
0	0	1	1	1	0	0	0

Binary to hexadecimal (01001101)

A	10
B	11
C	12

- Split the **Byte** in half, this time use the top place values to convert each half (**nibble**) into **denary**

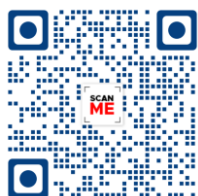
Measurement Unit	
4 Bits	1 Nibble
8 Bits	2 Nibble
1024 Byte	1 KB (Kilobyte)
1024 KB	1 MB (Megabyte)
1024 MB	1 GB (Gigabyte)
1024 GB	1 TB (Terabyte)
1024 TB	1 PB (Petabyte)



Tech Health and Safety

- Wear an APRON at ALL times.
- ALWAYS follow instructions and rules.
- Do not take shortcuts.
- Ask for help if you need it.
- When using machinery ALWAYS wear EYE PROTECTION & MACHINE GUARDS.
- Do not TOUCH machines or equipment unless you have permission.
- NEVER run in the workshop.

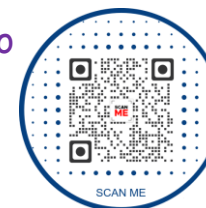
Scan the QR codes to watch a video about health and safety..



Key vocabulary	Definition
Tolerance	The difference between the maximum and minimum dimensions of error.
Marking Out	Measure in mm and mark using a pencil and steel ruler for accuracy.
Millimetres	Metric unit of length, Ten Millimetres make 1 cm.
CAD	Computer Aided Design.
CAM	Computer Aided Manufacture.
Hazard	Anything that can cause harm or danger.
Softwood	Wood that comes from Coniferous trees, quick growing, easy to work with.
Hardwood	Wood that comes from Deciduous trees, slow growing, difficult to work with.
Coniferous Tree	A tree that keeps its leaves all year round.
Deciduous Tree	A tree that sheds its leaves every Autumn.

Material

Scan the QR codes to watch a video about the differences between Hard and Soft Wood.



The Tenon Saw

- Hold in your dominant hand. (What hand you write with)
- Rest your index finger on the grip
- Pull back a couple of times before the mark
- Bring your arm back and forth the full length of the blade.
- Keep the fingers on your other hand away from the saw blade.



Aesthetics: What does it look like?

Client: Who is it for?

Safety: How safe is it?

Size: How big is it?

Function: What is it used for?

Material: What is it made from?

Measuring

Materials are measured in different ways depending if they are small or large quantities. Here are some of our most used measurements and their abbreviation.

Centimetres (cm) Millimetres (mm)

Angles are measured in Degrees, 90°

Most used measurements

Centimetre = 10mm

cm x 10 = mm

Right Angles = 90°



- **Toughness-** Toughness can be described as a material's ability to withstand impact from a dynamic force.
- **Hardness-** Hardness is the ability of a material to withstand scratching, cutting and abrasion.
- **Absorbency-** Absorbency is a material's ability to soak up and retain liquid.
- **Resistance to moisture -** Resistance to moisture is a material's ability to prevent liquid and moisture permeating its surface.
- **Strength-** Strength is the ability of a material to withstand a constant force without breaking.



Year 7 Drama – Term 2B: Practicing vocal and physical skills

Key terminology	Definition
Pace	The speed at which an actor speaks
Pitch	How high or low an actors voice is
Volume	How loud or quiet an actors voice is
Accent	How an actor speaks based on where the character comes from
Clarity	How clear our words and phrases are
Pause	A temporary stop in action or speech
Emphasis	Stress given to a word or words when speaking to indicate particular importance.
Facial expression	How we communicate our emotions through use of our facial features
Gesture	A movement of part of the body, especially a hand or the head, to express an idea or meaning.
Emotion	A strong feeling deriving from one's circumstances, mood, or relationships with others.
Still image	When actors create a stage image using their bodies with no movement
Slow motion	Students reduce the speed at which a drama is enacted, to highlight a scene or bring a big moment into focus. It can also be used to create dramatic tension by slowing the action when building up to an important event.
Mime	A technique of suggesting action, character, or emotion without words, using only gesture, expression, and movement.
Tension	The development of suspense in drama, usually due to conflict.



Year 7 Food - Term 2B: Hygiene and the Eatwell Guide

Food hygiene and safety

- Wash hands before preparing any food, after handling raw meat, after sneezing/coughing and going to the toilet.
- Wear a clean apron.
- Cover cuts with a blue plaster.
- Tie hair up.
- Remove jewellery and nail varnish before handling food.
- If you are ill, do not cook.
- Follow the 4Cs - cleaning, cooking, chilling and cross-contamination.

Scan the QR codes to watch a video about food safety and complete your homework quiz.



SCAN TO WATCH



SCAN FOR QUIZ

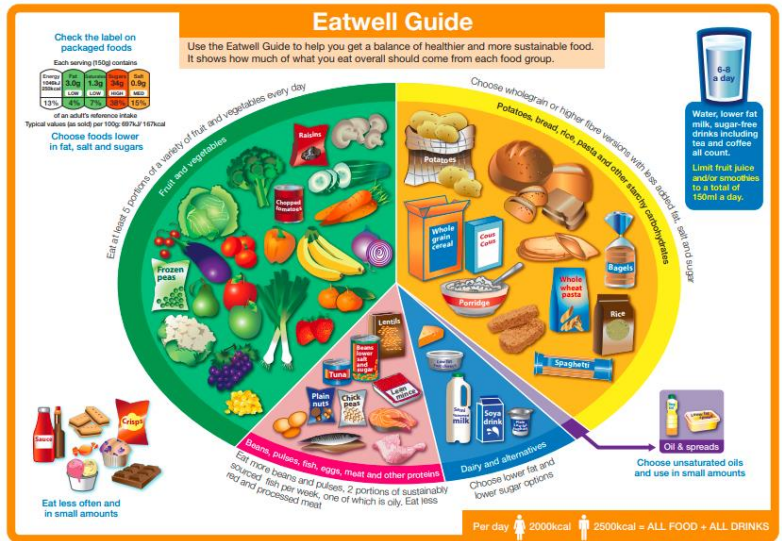
Key vocabulary	Definition
Ambient	Room temperature - usually between 15°C and 25°C.
Chilled storage	A refrigerator where the temperature is
Danger zone	Range of temperatures (5°C to 63°C) in which bacteria multiply very quickly.
Enzymic browning	When enzymes in cut fruit/vegetables come into contact with oxygen in the air. This causes the fruit to turn brown.
Frozen storage	Food is preserved in a freezer
Hazard	Anything that can cause harm or danger.
High risk food	A food that, if not stored correctly, could grow harmful bacteria.
Macronutrients	The main nutrients found in food - carbohydrates, fat and protein
Micronutrients	Nutrients found in small quantities in food, such as vitamins and minerals
Rubbing in	Method where fat is rubbed into flour using your fingertips.

The hand blender

- Only turn on the blender when it is in the food - to prevent splashing.
- Do not use if damaged.
- Do not blend very thick foods for more than 3 minutes as the blender will overheat.
- Do not scrape mixture out of the blender when it is still plugged in.
- Turn off when finished and only wash the blade attachment.



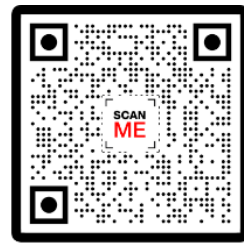
The Eatwell Guide



Scan the QR codes to watch a video about the Eatwell guide and complete your homework quiz.



SCAN TO WATCH

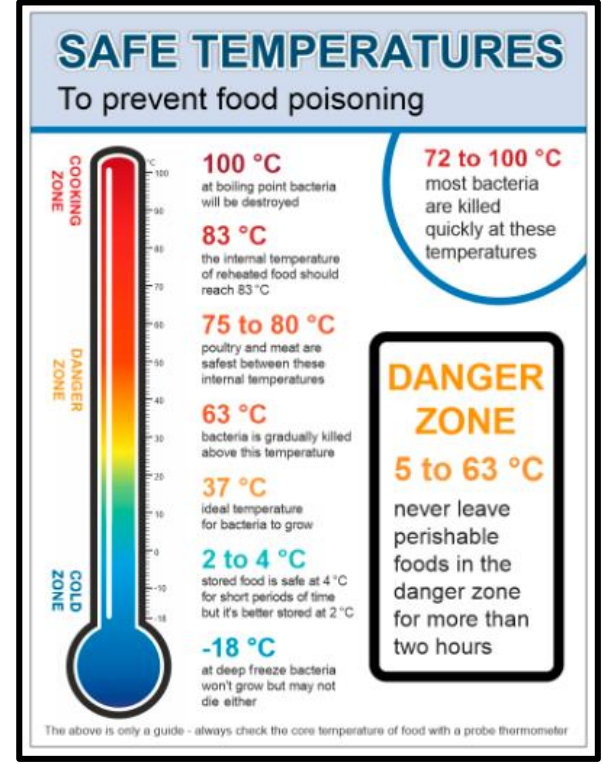


SCAN FOR QUIZ

- ### The 8 tips for healthy living
- 1 Base your meals on starchy foods.
 - 2 Eat at least 5 portions of fruit/vegetables.
 - 3 Eat two portions of fish per week, one oily.
 - 4 Cut down on saturated fat and sugar.
 - 5 Eat less salt - no more than 6g.
 - 6 Get active to be a healthy weight.
 - 7 Drink plenty of water - 1½ - 1 litres.
 - 8 Eat breakfast every day.

Weighing and measuring

Ingredients are measured in many different ways depending on whether they are liquid or dry ingredients or in small or large quantities. Here are some of our most used measurements and their abbreviation. Grams (g) Kilogram (Kg) Millilitre (ml) Litre (l) Tablespoon (tbsp.) Teaspoon (tsp.)



Most used measurements

Kilogram = 1000g
Litre = 1000ml
Tablespoon = 15ml
Teaspoon = 5ml

Year 7 Music – Term 2B: Band Skills

The Ukulele

The ukulele is a member of the guitar family of instruments. It generally employs four nylon strings.

The ukulele originated in the 19th century as a Hawaiian adaptation of the Portuguese machete, a small guitar-like instrument, which was introduced to Hawaii by Portuguese immigrants, mainly from Madeira and the Azores. It gained great popularity elsewhere in the United States during the early 20th century and from there spread internationally.

Chords

A chord, in music, is any harmonic set of pitches consisting of multiple notes (also called "pitches") that are heard as if sounding simultaneously.

Chords and sequences of chords are frequently used in modern West African and Oceanic music, Western classical music, and Western popular music; yet, they are absent from the music of many other parts of the world.

The Four Chord Song

One popular chord progression used in popular music is the 'four chord sequence', and it uses chords: I - V - vi - IV.

It is one of the most commonly used chord sequences.

Next time you are listening to some music, see if you can identify it in any songs you are listening to.

The Guitar

The strings run between the headstock of the guitar, where they are affixed to tuning pegs that can be rotated to tighten and slacken them, and the bridge, where they're fixed to the guitar's body. On an acoustic guitar, the strings are fixed to the bridge with removable pegs, and on an electric guitar the strings are generally strung through an eyelet.

The neck of the guitar is the long wooden piece of wood, flat on one side (this is called the fretboard) and curved on the other. The fretboard is inlaid with metal frets that demarcate the different notes.

The Piano

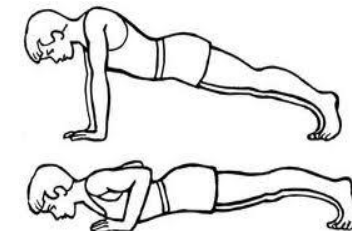
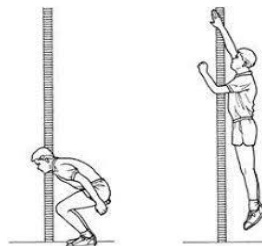
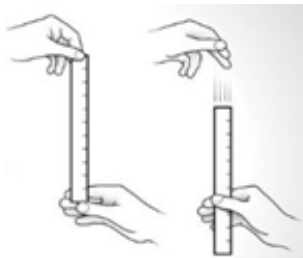
The piano is a stringed keyboard instrument in which the strings are struck by wooden hammers that are coated with a softer material (modern hammers are covered with dense wool felt; some early pianos used leather).



Year 7 Physical Education - Term 2B

Fitness Testing

Test	Component measured	How to complete the test
Ruler drop test	Reaction time	A partner will hold the ruler in line with your hand, which is to be partly open. When your partner lets go, you must grip the ruler as quickly as possible, then measure your score in 'cm'.
Vertical Jump test	Power	To start, you raise your arm against the wall to record the first measurement. A step is taken into the wall, before performing an explosive jump upwards to record a second measurement. The distance between both measurements is your score.
One minute press-up test	Muscular Endurance	As many press-ups as possible to be completed in one minute.
One minute sit-up test	Muscular Endurance	As many sit-ups as possible to be completed in one minute.



Year 7 Physical Education - Term 2B

Effects of Exercise on Body

Short-term effects	Long-term effects
Increased breathing rate	Increased Cardiovascular endurance
Increased heart rate	Increased Muscular Strength
Increased muscle contractions	Increased muscle tone
Increased body temperature	Improved posture
Increased demand for oxygen	Denser bones

Components of Fitness

Component of Fitness	Definition
Cardiovascular Endurance	The ability to exercise the WHOLE body for long periods of time without tiring.
Muscular endurance	The ability to exercise the a set of muscles for long periods of time without tiring.
Flexibility	The range of movement at a joint.
Muscular Strength	The ability to exert force.
Power	A combination of strength x speed.
Reaction time	The onset of time between a stimulus and response.
Agility	The ability to move the body quickly and under control when changing direction.
Speed	The ability to move across a distance in the quickest possible time.
Balance	The ability to maintain equilibrium.



Year 7 Spanish - Term 2B: School Facilities



subjects



teachers



opinions



uniform



facilities



school rules

Uniform	<p>Tengo/tenemos que llevar... - I/we have to wear</p> <p>(No) llevo/llevamos - I/we (don't) wear</p> <p>Es obligatorio llevar... - it's compulsory to wear</p> <p>No me gusta llevar - I don't like wearing</p>	<p>un jersey - a jumper</p> <p>un vestido - a dress</p> <p>una camisa - a shirt</p> <p>una corbata - a tie</p> <p>una falda - a skirt</p> <p>unos zapatos - shoes</p> <p>unos calcetines - socks</p> <p>unas medias - tights</p>	<p>blanco - white</p> <p>negro - black</p> <p>morado - purple</p>	<p>mejora la disciplina - improves discipline</p> <p>limita la individualidad - limits individuality</p> <p>da un imagen positiva del insti - gives a positive impression of the school</p> <p>ahorra tiempo por la mañana - saves time in the morning</p>
	<p>Ojalá pudiera llevar... - If only I could wear...</p>	<p>unos vaqueros - jeans</p> <p>zapatillas de deporte - trainers</p>	<p>una sudadera - a hoody</p>	

School facilities	<p>En mi instituto hay... - in my school there is</p> <p>mi insti tiene - my school has</p> <p>Mi escuela primaria tenía - my primary school had</p> <p>En mi escuela primaria había - in my primary school there was...</p>	<p>un salón de actos - a hall</p> <p>un comedor - a canteen</p> <p>un campo de fútbol - a football pitch</p> <p>un patio - a yard/playground</p> <p>un gimnasio - a gym</p> <p>una piscina - a pool</p> <p>una biblioteca - a library</p> <p>una pista de tenis - a tennis court</p> <p>unos laboratorios - some science labs</p> <p>muchas aulas - lots of classrooms</p> <p>menos/más exámenes - more/less exams</p> <p>más oportunidades para hacer deporte - more sports opportunities</p>
	<p>Mi insti es... - my school is...</p>	<p>mixto - mixed</p> <p>masculino - all boys</p> <p>privado - private</p> <p>feminino - all girls</p> <p>público - state school</p>
	<p>Las clases comienzan a las _____ - classes start at _____ o'clock</p> <p>Las clases terminan a las _____ - classes end at _____ o'clock</p> <p>La hora de comer/el recreo dura _____ minutos - lunch/break lasts _____ minutes</p> <p>El día escolar es muy largo - the school day is really long</p>	

Teachers	<p>es - is</p>	<p>paciente - patient</p> <p>impaciente - impatient</p> <p>tolerante - tolerant</p> <p>severo/estricto - harsh/strict</p> <p>listo - clever</p> <p>tonto - silly/stupid</p> <p>trabajador(a) - hardworking</p> <p>perezoso - lazy</p> <p>simpático - nice</p> <p>antipático - mean/unpleasant</p>
	<p>El/la profesor/a de (ciencias) - My (science) teacher</p>	<p>enseña bien - teaches well</p> <p>explica bien - explains well</p> <p>tiene buen sentido del humor - has a good sense of humor</p> <p>tiene expectativas altas - has high expectations</p> <p>crea un buen ambiente de trabajo - creates a good working atmosphere</p> <p>nunca se enfada - never gets angry</p> <p>me hace pensar - makes me think</p> <p>nos da consejos/estrategias - gives us advice/strategies</p> <p>nos pone muchos deberes - gives us a lot of homework</p>



Notes

A series of horizontal dotted lines for writing notes, spanning most of the page width.



Notes

Handwriting practice area consisting of multiple horizontal dotted lines for writing notes.





St Cuthbert's Catholic High School

Live life in all its fullness