YEAR 10 CYCLE 1 ART

1907 - 1921 Cubism
Cubism rejected the fact that art should depict a single viewpoint and can be recognised by as the breaking down of form and shape into geometric shapes.

Artists:
Georges Braque, Pablo Picasso, Juan Gris.

1912 - 1914 Orphism
Founded by Jacques Villon, Orphism was rooted in Cubism. It was a pure lyrical abstraction. A sensation of bright colours.

Artists:
Robert Delaunay, Sonia Delaunay, Patrick Henry Bruce.

1911 - 1914 Der Blaue Reiter (The Blue Rider)
A group of artists based in Munich who believed that creativity was not based in academic art but in a desire to express spiritual truths.

Artists:
Wassily Kandinsky, Franz Marc, Paul Klee.

1915 - 1920s Suprematism
This name was give by the Russian artist Kasimir Malevich to the abstract art he developed. The discovery of pure art.

Artists:
Kasimir Malevich, Aleksandra Ekster, Olgar Rozanova.

1920 - 1930s New Objectivity
This art movement captured the bitter results of war realism after the first world war. It abandoned the notion of symbolism.

Artists:
Otto Dix, George Grosz.

1930s - 1940s Realism and Figurative
This is a number of artists who rejected the notion of abstraction and wanted to work in a more conventional style. Showing contemporary life.

Artists:
Georgia O Keeffe, Grant Wood, Edward Hopper, LS Lowry.

1920s - 1940s Surrealism
Surrealism is using the subconscious for creativity to liberate pictorial subjects and ideas.

Artists

Salvador Dali, Rene Magritte, Joan Miro, Max Erst.

LS Lowry circa 1945 - Oil on canvas

Key Vocabulary:

Geometric
Form
Viewpoint
Lyrical
Creativity
Conventional
Contemporary
Realism
Subconscious
Pictorial

YEAR 10 CYCLE 1 - CHILD DEVELOPMENT

WEEK 1: Factors that affecting pre-conception health

Diet: Taking folic acid helps conception. Folic acid is part of the vitamin B group and helps the body make red blood cells and the neural tube in babies. It is recommended during pregnancy because our bodies are not able to store it very well. If there is a lack of folic acid this could cause complications for mother and baby. A diet containing five portions of fruit and vegetables a day, fish twice a week, foods with protein and iron, dairy, sugary and processed foods in moderation is recommended.

Exercise: Can improve your odds of conceiving. The more fit you are, the more likely you are to have a healthy pregnancy, easy delivery, and healthy baby.

Healthy weight: Being overweight or underweight puts you at increased risk for problems during pregnancy.

Dangers of alcohol/recreational drugs/ smoking: Drinking alcohol can reduce your fertility and ability to conceive. Excessive drinking can lead to a miscarriage in early stages of pregnancy. Smoking can cause: premature birth, low birth weight, miscarriage, cot death or breathing problems.

Up-to-date immunisation: Vaccinations that are recommended in preconception care include the hepatitis B and the measles, mumps, and rubella vaccines.

Parental age: Parent age can affect chances of conception, experience of parenthood and increase chances of baby born with certain conditions.

WEEK 2: Types of contraception

Barrier Methods:

Condom - 98%

Femidom - covers the female vagina - 95%

Diaphragm - put in the female's vagina by doctor - 92-96% (covers cervix)

Hormonal Methods:

POP pill - taken by female - 99/100%

Contraceptive implant - injected in female's arm (releases progestrogen) - 99%

Contraception patch - put on abdomen, arm or bottom of female - 99%

Combined pill - taken by female - over 99%

Contraceptive injection - taken by doctor for female - 99%

IUD/coil/IUS - put in the female's vagina by doctor - 99% (immediately effective)

Emergency contraception - Should be used in cases of unprotected sex, it should be taken within three days and works by stopping the release of an egg. It should not be used a regular contraception. It is available from a GP or a clinic.

Natural family planning

A way of preventing pregnancy by following the menstrual cycle. A woman tracks her menstrual cycle and finds out when she is most fertile/likely to conceive. These are: Temperature method, Cervical mucus method and Calendar method.

WEEK 3: Reasons why accidents happen in a childcare setting

All children experience minor accidents. Childcare settings are busy environments:

- More children on the premises naturally means there will be a higher incidence of accidents.
- Childcare settings tend to have more space for physical play and access to more large play equipment which may lead to accidents.
- More access to liquids (e.g. pouring their own drinks, water play), leading to more spillages and potential slips.
- Children will be learning new skills and playing in new ways for the first time (e.g. using ride on toys, and playing playground games).
- Children may engage in 'rough and tumble' play with peers from time to time.

WEEK 4: Prevention of burns

When cooking, use the rings at the back of the cooker and turn saucepan handles towards the back.

Put cold water into a bath first, then add the hot water and test the temperature before putting a child in the bath.

Fit fireguards to all fires and heaters.

Keep hot drinks well away from young children.

Cover children up with a t-shirt and hat, and use sunscreen to prevent sunburn.

WEEK 5: Prevention of choking and suffocation

Keep small objects out of reach, check and follow the age recommendations on toys. Keep toys for small children and older children separately. Ensure children sit up when eating. Keep food pieces small and encourage them to chew food well. Follow safe sleeping guidelines. Keep plastic bags, including nappy sacks, well out of reach of babies and children. Avoid garments that could catch around a child's neck such as scarves.

YEAR 10 CYCLE 1 - CHILD DEVELOPMENT

WEEK 6 and 7: How to prevent accidents

Staff training

Health and safety is a vital element of a practitioner's role. Childcare providers should train staff in how to keep children safe in their setting. This includes ensuring that everyone understands/ knows how to follow the setting's health and safety policies and procedures.

Completing risk assessments

A risk assessment aims to prevent accidents. Settings will have risk assessment forms for staff to complete before undertaking activities, outings or changes in layout to the setting. Staff will be trained on how to complete the risk assessment.

Supervision

Children must be supervised at all times. Ofsted outlines the minimum acceptable staff to child ratio. In childcare settings in England (without a qualified teacher), the minimum ratios are:

- Children under two years: one adult to three children (1:3)
- Children aged two years: one adult to four children (1:4)
- Children aged three to seven years: one adult to eight children (1:8).

For safety, staff should consider the tasks they undertake throughout the session. The younger children are, or the more challenging the activity, the closer the supervision will need to be. For some activities, children can play independently, as long as there are adults in the room keeping a general eye on things -children can approach them if they need assistance. Other activities would be unsafe without one-to-one support from an adult. For example, a child learning to use a sharp tool. Levels of supervision can change as problems occur, the mood of children changes or when children master skills.

Having appropriate safety equipment

Accident prevention needs to be considered for each area of the setting and applies to permanent and flexible areas. It's vital to have the appropriate equipment to ensure children's safety: - A safety gate to prevent children from entering food preparation areas. - Stair gates to prevent children from falling down stairs. - Safety flooring or mats underneath play equipment. -Socket covers on electric sockets. - Reins on highchairs.

Educating the children

Children learn through repetition, and adults remind them of safety rules such as 'Only four children on the climbing frame at once', or 'We don't jump on the bed'. Explaining safety instructions is an opportunity to educate a child about keeping themselves safe. For example, if a child understands that a crowded climbing frame can be dangerous, they may remember this when they visit the park and wait for crowded apparatus to become less busy before going on.

Sensible placement of equipment

It's important to consider safety when deciding where to place equipment and safety equipment. For example: climbing frames, slides and large playground apparatus must be placed on a flat surface. The surface should be safe, with safety flooring/mats underneath. When planning to set out a play activity, consider what other children will be doing nearby. For example: it would not be safe to position a mat for babies to lie on alongside three year olds playing with balls.

WEEK 8 and 9: Plan to create a safe environment in a childcare setting

Lack of supervision

Higher ratio of adults to children in the home than in a childcare setting. A parent may supervise two children aged three to five years at home, while at a childcare setting one practitioner for every eight children aged three to five years. Dedicated staff will solely look after children; they won't have the same demands on their time as a parent at home (e.g. cleaning the house, cooking meals, laundry etc). But problems occur if:

- The number of staff is insufficient
- Time management is lacking
- Staff are not effectively deployed, including a lack of supervision for activities such as cooking or using tools.
- Staff have not been appropriately trained, whether for the age range or the environment
- Untrained, or new, staff are not closely monitored.

Untrained staff

Poor safety practice can be down to a lack of staff training. It's very important for childcare settings to follow the rules and ensure that there is always the correct number of trained staff at every session.

Safety equipment

Failing to use, check or adjust safety equipment to meet the needs of an individual child can be problematic. For instance:

- Safety reins must be adjusted to fit each toddler before taking them for a walk outside of the setting.
- The safety straps on a highchair will need to be adjusted to fit each child that sits in it.
- Without these measures, the safety equipment will not be fully operational.

As part of a child's development

Children have minor accidents as part of their development, as children become more curious and mobile. For instance, a curious baby who has just learnt to crawl may now be able to open cupboards and turn out the contents, or to access and touch electrical wall sockets. Child cupboard locks, stair gates and socket covers should be fitted, where appropriate, within the childcare setting.

YEAR 10 CYCLE 1 - GCSE CITIZENSHIP: 3.1 - Identities and Diversity in UK Society

WEEK 1

Key terms and concepts

Multiple identities: Identifying with more than one sense of belonging or loyalty. For example, "A British Muslim originally from Saudi Arabia".

Sense of identity: Feelings of belonging and identity; possibly linked to religion, culture, place of birth, family or community.

Identity

A person's **sense of identity** is influenced by many factors, such as parents, friends, school, traditions, values, religion, heritage and culture. For many, their sense of identity is complex as they have different identities at different times. This is known as **multiple identities.**

British values. These are the principles the Government believe should underpin British society and democracy, and which can influence the identity of people in the UK. The values include:

- The rule of law.
- Personal freedom.
- Tolerance and respect for diversity.
- Equal opportunity.

WEEK 2

Key terms and concepts

Migration: The movement of people from one country to another, (or from one area of a country to another area in the same country. For example moving from the countryside to a city).

Migration

There are two overarching types of migration. The first is **economic migration,** when a person moves to another country because they are looking for a better quality of life. The second type is **political migration**. This is often linked to human rights. For example, a person may leave their home country because they are being persecuted. Within these types are individual reasons for migration. The negative reasons that cause someone to want to leave their home country are called **push factors.** The positive reasons which make another country an attractive destination for migrants are called **pull factors.**

WEEK 3

Key terms and concepts

Emigration: The act of leaving one's own country to settle permanently in another.

Immigration: The action of coming to live permanently in a foreign country.

The economic migration debate - Arguments supporting migration

- 63% of members of the CBI said their business benefited from free movement of labour.
- Many migrants are well-educated and solve labour shortages in sectors such as IT and engineering.
- UK hospitals and care homes would not function without overseas workers.
- In 2013, 87% of EU migrants moving to the UK came for work or study. EU migrants don't come to the UK just to claim benefits.
- On average, EU migrants paid around £2,700 a year more in tax than they received in benefits.

WEEK 4

Key terms and concepts

Economic migration: Moving from a poorer country to a richer one in order to find a better standard of living.

The economic migration debate - Arguments for restricting migration

- Rapid population growth has made it difficult to provide public services such as education.
- In 2014, more than 1 in 4 babies born in the UK was to a migrant mother increasing the burden on NHS maternity services.
- The increased population is putting strain on the public transport systems.
- Migrants will require places to live. The only options are to build more houses in urban areas, that are already overcrowded and polluted, or to build on green field sites, which is bad for the environment.

WEEK 5

Key terms and concepts

Community cohesion: A society where diversity is celebrated, and all groups work together towards a common vision.

Community cohesion

One result of migration is that an area becomes more multicultural, which could have positive or negative consequences; depending on how well the different cultures accept, and integrate with, each other.

Community cohesion involves building a community where diversity is respected and celebrated, and where all groups come together to work for the good of the community. People share values, and everyone can participate in their community, on an equal footing with everyone

YEAR 10 CYCLE 1 - GCSE CITIZENSHIP: 3.1 - Identities and Diversity in UK Society

WEEK 6

Key terms and concepts

British citizenship: Being a citizen of Britain through birth, parental circumstances or naturalisation.

Features of a society with high levels of community cohesion

- A lack of fear - people of all ages feel safe on the streets.
- Streets, gardens and public areas are clean, and well-maintained.
- Houses and flats are lived in and well cared for.
- People from different backgrounds socialise together in shops, cafes and parks.
- Successful schools.
- Lots of services for the whole community, such as libraries and community centres.
- Low levels of crime.
- Low levels of racism and discrimination.

WEEK 7

Key terms and concepts

British Empire: Overseas countries that were governed and controlled by the UK.

Colonies: Overseas land governed and controlled by another country.

British citizenship

People can apply for British citizenship, as long as they meet the following criteria:

1. Aged 18, or above.
2. Do not have a recent, or serious, criminal record.
3. Have not broken any immigration laws.
4. Have passed the English language and citizenship tests.
5. Have lived in the UK for at least 5 years, and have been granted the right to stay

Once British citizenship has been granted, the applicant has the following rights:

1. To live permanently in the UK.
2. To leave and re-enter the UK at any time.
3. Protection and assistance while overseas. 4. All legal rights granted by the UK to its citizens.

WEEK 8

Key terms and concepts

Asylum: The protection granted by a state to someone who has left their home country as a political refugee.

Asylum seeker: A person fleeing war or persecution in their home country seeking asylum (protection) in another country.

Asylum seekers

Many people leave their home country to seek protection in another one because if they stay they and their family face torture, imprisonment, discrimination, and even death.

If a person chooses to flee their country to find protection elsewhere, they are known as an **asylum seeker.** Other people have been forced to flee their home because of the actions of their own government. These people are called **refugees** or, more accurately, **political refugees.** Other refugees may be forced to leave their homes because of natural disasters. These are known as **environmental refugees.**

WEEK 9

Key terms and concepts

Political migration: People moving from one country to another, in order to receive human rights denied to them in their home country.

Refugees: People forced to leave their home due to war, famine, human rights violations, etc. and granted asylum in another country.

Asylum statistics

In 2014, the top 5 countries in terms of asylum applications were:

1. Germany (173,100);
2. The USA (121,200);
3. Turkey (87,800);
4. Sweden (75,100);
5. 5. Italy (63,700).

In the same year, the top 3 countries of origin for asylum seekers living in the UK were:

1. Eritrea (3,568);
2. Pakistan (2,302);
3. Syria (2,204).

Most refugees stay within their region of displacement. This is problematic because it means that 86% of the world's refugees are hosted by poorer countries. Turkey hosts the highest number of refugees, (1.6M), followed by Pakistan, (1.5M).

WEEK 10

Seeking asylum in the UK

Reasons why asylum seekers may choose to apply for refuge in the UK:

- The UK has a strong human rights record.
- English is spoken across the world, so is familiar to many refugees.
- The UK is a multicultural society.
- The UK is wealthy, so can support asylum seekers.
- There are unskilled jobs in the UK which could be performed by refugees with low levels of English.
- People who live in the UK have a right to housing, healthcare and education.

In 2014, 38/100 people who applied for asylum in the UK were recognized as refugees and granted asylum. Another 4/100 did not qualify for refugee status, but were granted asylum for another humanitarian reason.

In 2015, the Government said the UK would take an extra 5,000 Syrian refugees every year until 2020, to support the international efforts to help the victims of the Syrian refugee crisis.

YEAR 10 CYCLE 1 - DRAMA: Developing Skills and Techniques in the Performing Arts

WEEK 1 and 2

Key skills and techniques for rehearsal and performance needed to achieve in Component 2

- Practice, repetition and recall to learn dialogue.
- Experimentation of skills and techniques.
- Interpreting and developing character.
- Communication of style/genre.
- Communication of themes and ideas.
- Applying Health and safety.
- Warming up and cooling down.
- Response to teacher and peer instruction and feedback.
- Reviewing and recording Development of skills.
- Cooperation.
- Application of relevant performance skills for the style and genre chosen.
- Application of interpretive skills - expression, character, mood and atmosphere.

WEEK 3 and 4

Drama styles

Naturalistic - Performance is as close to real life as possible.

Non-naturalistic - Performance is more theatrical, tells a story using techniques such as flash-back, direct address to the audience (breaking the fourth wall), multiple role-play.

Abstract - Uses lots of symbolism, surreal settings, Artaud's theatre of cruelty (making the audience think or feel uncomfortable).

Physical Theatre - Performers focus on their bodies, mask work, creating settings and props using bodies of performers, mime, dance work.

Theatre-in-Education - A play created to teach a lesson, passes on a message, often includes a workshop or discussion of some kind.

Verbatim Theatre - A play that is scripted using real words from interviews.

WEEK 5 and 6

Drama Genres

Comedy - Funny story, ends happily.

Tragedy - Story shown is sad, ends unhappily, death or downfall of main character(s).

Gritty Realism - About real-life, usually dealing with poverty, people struggling with their lives.

Historical Drama - Set in a particular historical period, such as, World War 2, Roman times.

Docudrama - Looks like a documentary, with reconstructions included.

Thriller/Horror - To scare your audience, to make them feel uncomfortable, to make them jump, creates tension/suspense in your audience.

Melodrama - Over the top acting, Victorian drama - lots of entrances and exits.

Farce - Lots of quick entrances and exits, characters just missing each other, comedy.

WEEK 7 and 8

Some key scripts you may want to consider

The Importance of Being Earnest by Oscar Wilde - A comedy of manners with hints of satire and performed in a slightly melodramatic way.

Blood Brothers by Willy Russell - A combination of tragedy and musical theatre. It was originally written without songs, so has a different feel to a traditional musical.

Abigail's Party by Mike Leigh - A realistic comedy. The style is slightly more melodramatic than naturalistic as it was the result of improvisational activities.

The Dumb Waiter by Harold Pinter - An absurdist play. The cast must be two males. It has comic moments and lots of tension.

WEEK 9 and 10

Some key scripts you may want to consider

The Birthday party by Harold Pinter - An absurdist play. It has comic moments and lots of tension.

Hard to Swallow by Mark Wheeller - A gritty issue based play on the theme of eating disorders. Based on a true story it is part naturalistic, and often non naturalistic in a physical way.

The Caucasian Chalk Circle by Bertolt Brecht - A play in the epic style. It uses many stylistic devices such as play within a play, irony, satire, humour, imagery, songs, wise sayings, contrast and symbolism, among others.

Antigone by Sophocles - Greek Tragedy - using all the traditional conventions.

YEAR 10 CYCLE 1 - GCSE ECONOMICS:
Unit 2 - 2.7 The Labour Market and 2.8 The Role of Money and Financial Sector

WEEK 1: The Labour Market

Key terminology

Labour Market: where workers sell their labour and employers buy labour.

Salary: Yearly wage divided equally into 12 months.

Types of labour markets.

Local: Within commuting distance of the worker's home.

National: Within a country.

International: Across the whole world.

Labour markets lack perfect mobility because workers cannot move freely between markets.

Factors influencing labour markets:

- Qualifications.
- Skills.
- Location.
- Wage rates.
- Conditions of employment.
- Level of competition.
- Location.

Simply put the market will determine wages based on buyers of labour (employers) and supply of labour (workers).

WEEK 2: Labour supply

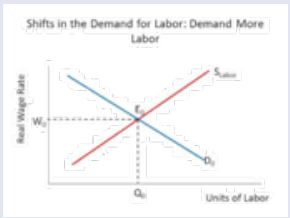
Key terminology

Supply of labour: The total number of people who are willing and able to work. The supply labour which includes unemployed people.

Active labour supply: People who are available for employment; the employed, the self-employed, and unemployed people looking for work.

Inactive labour supply: People who are not for available for work; for example, the sick, students, retired people and carers.

The demand for labour is a derived demand. If the demand for a product rises, more workers will be needed to meet the demand.



- The price of labour is the wage.
- Wage is used instead of price in a diagram.

Factors affecting the labour supply

- Size of working population.
- Increased demand.
- Wage rates.
- Job security.
- Profitability of firms.

WEEK 3: Gross pay/net pay/pension

Key terminology

Gross pay: The amount of money an employee earns before any deductions are made.

Income tax: A tax placed directly on a persons income.

National insurance: A contribution paid by workers and employers for state benefits.

Net pay: The amount of money the employer is left with after tax.

Pension: A fixed amount paid at regular intervals to a person usually retired.

Net Pay = Gross Pay - deductions.

	£
Gross Pay	**24,000**
Income Tax	**2,512**
NI	**1,925**
Pension	**1,440**
Net Pay	**18,123**

WEEK 4: Role of money

Key terminology

Money: Anything that is generally accepted as a means of payment for goods and services.

Medium of exchange: Anything that sets the standard of value for goods and services, acceptable to all parties in a transaction.

Debit cards: A payment card which takes money directly from your current account; and so the amount you can spend is limited by your funds (plus any agreed overdraft).

Credit cards: A payment card which is effectively a loan because you can purchase goods or services without having sufficient money in your account. The amount borrowed has to be paid back and you are charged interest on money not paid back.

Cheque: An order to a bank to pay a stated sum from the drawer's account, written on a specially printed form.

Cheques, credit cards and debit cards are not money but allow money to be spent.

WEEK 5: Importance of the financial sector

Key terminology

Financial sector: Financial organisations and their products. It helps markets to function and consumers, firms and governments carry out economic activities within a regulatory framework.

Rate of Interest: The cost of borrowing money; or the reward for saving.

Investment: The purchase of capital goods used to produce future goods and services. Also, assets, such as shares, bought to provide an income in the future, or to be sold for a profit.

Banks: Financial institutions licensed to receive deposits and make loans.

Building societies: A mutual financial institution owned by its members. Uses deposits to lend money to members.

Insurance company: Financial institution that guarantees compensation for specified loss, damage, illness or death in return for an agreed premium.

Mortgage: An agreement with a financial institution to borrow money to purchase a property.

YEAR 10 CYCLE 1 - GCSE ECONOMICS:
Unit 2 - 2.8 The Role of Money and Financial Sector / Unit 3 - 3.1 Economic Growth

WEEK 6: Effect of changes in interest rates and interest rate calculations

Key terminology

Saving: The part of an individual's income which is not spent on consuming goods or services.

Borrowing: Receiving money (or something of value), in exchange for an obligation to pay it back at a specified time in the future. Often includes interest so the amount paid back is higher than the amount originally borrowed.

The Bank of England sets the bank rate. This affects the rate of interest that financial institutions offer savers and borrowers. It is assumed that an increase in interest rates will encourage people to save because the opportunity cost of not saving is higher than if they were to save. Higher interest rates will also discourage borrowing. This is because the amount you pay back will be much higher.

Calculating the interest payment:

Interest payment = Amount borrowed/saved x interest rate
e.g. Borrowing £100,000 at 5% interest: 100,000 x (5/100) = £5,000

WEEK 2: Economic growth and GDP and GDP per capita

Key terminology

Gross Domestic Product: The total value of goods and services produced in a country in a year.

GDP per Capita: GDP divided by the population.

Economic Growth: Growth in GDP over time.

The most common way of measuring standard of living is to use GDP per capita. This is because it is easier to compare between countries over time.

Economic growth is one of the main aims of the government policy. If a country has high economic growth the welfare of that country is usually higher, (e.g. more spending of healthcare).

Calculating the rate of economic growth

Divide the percentage change in GDP by the original GDP, then multiply the result by 100:

Rate of growth = (change in GDP / original GDP) x 100

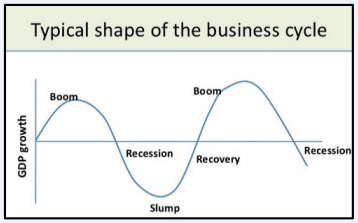
WEEK 3: Recent and historical GDP data

Key terminology

Boom: A period of high economic activity and high levels of employment.

Recession: A period when the country's GDP falls in two or more consecutive quarters.

The graph shows GDP growth in times of boom and recession.



In a recession people have less money so spend less. This means less labour is needed so there is higher unemployment. This leads to people having less money, so the cycle continues. In times of a boom, the opposite is true.

Economic growth is shown as a %.

WEEK 4: Determinants of economic growth

Key terminology

Labour force / Workforce: The number of people that work in a country.

The factors that cause the economy to grow are known as **supply-side-factors.** These include:

- **Investment:** Increased spending on capital so firms produce more.
- **Changes in technology**: Increases efficiency, so can produce more.
- **Education and training:** This affects the quality and quantity of the work done. The more educated, trained and skilled the workers are, the higher the output is likely to be.
- **Labour productivity:** If productivity increases, over time worker output will improve.
- **The size of the workforce**
- **Natural resources:** These can stimulate economic growth, e.g. Saudi Arabia's reliance on oil.
- **Government policies:** Such as healthcare, education, transport.

WEEK 5: Costs and benefits of economic growth

Benefits of economic growth:

- Rise in material living standards.
- Reduction in poverty.
- Rise in welfare of the population.
- A rise in employment.
- A fall in unemployment.

Costs of Economic growth:

- Environmental costs.
- Air pollution.
- Global warming.
- Congestion.
- Loss of non- renewable resources.
- A lower quality of life.
- Inequalities of income and wealth.
- Inflation.

YEAR 10 CYCLE 1 - FOOD PREPARATION AND NUTRITION: Meat, Fish, Poultry and Eggs

WEEK 1: Farming Methods	WEEK 2: Growth & Process	WEEK 3: Classification	WEEK 4: Nutrient Value	WEEK 5: Diet
There are symbols on food packaging (RSPCA assured /red tractor symbol) to show that meat and poultry have met welfare standards. Animal welfare refers to the well-being of animals and covers areas such as the animal's access to fresh water, diet to maintain health, assurance that the animals are reared free of any discomfort, pain, injury disease and provided with adequate shelter.	Beef: Organic beef and rare breed beef is the most expensive to buy. The time the beef has been hung will determine how flavoursome and tender it is. Pork: The meat that comes from pigs. Ham, bacon and gammon are cured pork. Goat: Also called Cabrito, Chevon or Kid. Venison: Meat from deer, it is classified as game but can be farmed or park reared.	Meat is sourced from animals, Poultry from domesticated fowl (e.g. chicken and turkey), Offal is edible internal organs, Game is sourced from wild animals (e.g. Rabbit, Pheasant, Pigeon). British meat and poultry must be born, reared and slaughtered within the UK. Under EU law all meat and poultry for human consumption must show traceability through all stages.	Meat and Poultry contain: Protein (High Biological Value), Fat (Red meat has a higher fat content than poultry), Vitamins A and D (fat soluble), B12 (water soluble), Minerals; Iron (for haemoglobin), Magnesium (strong bones and muscle health), Potassium, (electrolyte balance) Selenium (antioxidant) and Zinc (immune and reproductive systems).	A portion of meat = 80g (roughly the size of a pack of cards). It is recommended not to eat more than 500g per week (approx. 6 portions). Protein is a important macronutrient, it is essential for growth and repair of the body. 1g of protein can provide 17KJ/4 cal of energy. Animal proteins are HBV (high biological value proteins as they contain all essential amino acids).
WEEK 6: Food Science	**WEEK 7: NEA 1 Planning**	**WEEK 8: Emulsions**	**WEEK 9: Storage**	**WEEK 10: Scenario Prep**
Meat proteins coagulate (harden) on heating. At around 60OC the proteins begin to change in composition and structure. This process is called denaturation. As a result of denaturation the muscle fibres become firmer. Beyond 60OC the muscle fibres shrink and the meat juices are squeezed out. Marinades tenderise meats by changing collagen into gelatine, allowing the meat to hold more water.	The research you do to plan your experiment will depend on the brief given. Useful sources to consider are; Recipe books, Magazines, Newspapers, Online articles/videos or blogs, Textbooks and TV programmes. It is good practice to summarise your findings. You must also provide references for all sources of information in your write up.	Oil and Water do not mix. Some dishes we make need to have the oil and water permanently mixed together, to do this we make an emulsion. Placing olive oil, and vinegar and shaking them together forms a salad dressing, but they will settle out into layers. This is called a unstable emulsion. If you gradually add beaten egg into the solution, you will for mayonnaise which is a stable emulsion as it does not separate.	All meat and poultry should be stored at between 0-5OC. Raw and cooked meat/ poultry should be stored separately. Raw meats at the bottom of a fridge and cooked meats at the top. Poultry should be stored away from other meats to minimise Salmonella cross-contamination. Red chopping boards for raw meat, Yellow for cooked meats and Blue for raw fish.	Dietary fibre is also known as roughage, cellulose and non-starch polysaccharide (NSP). It is a carbohydrate found in plant-based foods, it is not broken down easily and passes through the body unchanged. It helps to maintain healthy bowels. Iron helps to make Haemoglobin, deficiencies can lead to Anaemia. Iron intake must be combined with Vitamin C to help absorption. Iron can be found in red meat, offal, leafy greens, wheat flour.

Keywords: Amino acids, Antioxidants, Cholesterol, Coagulate, Collagen, Deficiency, Denaturation, Emulsify, Gelatine, High Biological Value, Lecithin, Low Biological Value, Maillard reaction, Marinading, Nutrient, Omega-3, Ovalbumin, Salamander, Stabilise, Syneresis, Unsaturated fatty acids.

YEAR 10 CYCLE 1 - GCSE PE

WEEK 1 and 2

Components of Fitness

Remember the acronyms…

Sprinters **C**an **R**un **F**ast **S**peeds
A Marathon **C**an **B**e **P**ainful

Strength - The ability to overcome a resistance.

Coordination - The ability to use 2 or more body parts together smoothly and efficiently.

Reaction time - The time taken to initiate a response to a stimulus.

Flexibility - The range of movement possible at a joint.

Speed - The maximum rate at which an individual is able to perform a movement or cover a distance in a period of time.

Agility - The ability to move and change direction quickly whilst maintaining control.

Muscular endurance - The ability of a muscle group to undergo repeated contractions avoiding fatigue.

Cardiovascular endurance - The ability of the heart and lungs to supply oxygen to the working muscles.

Balance - Maintaining the centre of mass over the base of support.

Power - The product of strength and speed.

WEEK 3 and 4

Fitness Testing

Strength - One rep max test - Hand grip dynamometer.

Coordination - Anderson wall throw test.

Reaction time - Ruler drop test.

Flexibility - Sit & reach test.

Speed - 30m sprint test.

Agility - Illinois agility test.

Muscular endurance - Sit-up bleep test.

Cardiovascular endurance - Multi-stage fitness test.

Balance - Stork balance test.

Power - Vertical jump test.

WEEK 5 and 6

Principles of Training

Principles of Training (FITT & SPORT)

Frequency - How often you train.

Intensity - How hard you train.

Time - How long you train for.

Type - What method of training you use.

Specificity - Making training relevant to demands of the sport, muscles used, needs of the person.

Progressive - Gradually increasing intensity of training over time.

Overload - Working harder than normal to push the body.

Reversibility - Negative effects when you stop training. Going backwards in training.

Tedium - Boredom.

WEEK 7 and 8

Circuits - A selection of different activities (stations).

Advantages

- Variety.
- Works the entire body.
- Sports specific.

Disadvantages

- Specialist equipment sometimes needed.

Continuous training - Working at medium intensity for longer periods of time without rest.

Advantages

- Develops CV endurance.
- Can be done anywhere.

Disadvantages

- Time consuming.
- Boring.
- Only develops CV endurance.

Weight training - Lifting any resistance (weights, objects, own body weight).

Advantages

- Develops strength and muscular endurance.

Disadvantages

- Increases blood pressure.
- Injury.

Interval training - Short, high intensity work followed by short periods of rest (HIIT)

Advantages

- Burns calories and body fat.
- Quick.
- Aerobic and anaerobic.

Disadvantages

- Injury.
- Motivation needed.
- Dizziness and exhaustion.

Fartlek Training - Running at different intensities (speeds) over different terrains.

Advantages

- Aerobic and anaerobic.
- Interesting and variety.

Disadvantages

- Need different terrains.

Static stretching - Holding stretches for 30 seconds.

Advantages

- Increased flexibility.
- Can be done by anyone.

Disadvantages

- Over-stretching.
- Time consuming.

Plyometric training - Bounding, hopping and jumping.

Advantages

- Increases power.
- Useful in lots of sports.

Disadvantages

- Injury.
- Equipment

WEEK 9 and 10

Safety and Training Seasons

Safer Acronym:

- **S**TRETCHING
- **A**PPROPRIATE INTENSITY
- **F**OOTWEAR & CLOTHING
- **ER** EXERCISE & REST

Training Seasons

Pre-season (Preparation)

- Build fitness, aerobic.
- Skills needed for season.

Competition Season (Peak/ Playing)

- Peak level of fitness, maintain it, work on skills.

Post Season (Transition)

- Rest and recover, light aerobic training to not drop too far.

High Altitude Training

- 2000m+ above sea level.
- Less oxygen so body has to work harder.
- Body compensates by creating more red blood cells.
- Return to sea level and training is easier due to more red blood cells for short period.
- Suits endurance athletes due to higher levels of oxygen.

YEAR 10 CYCLE 1 - HEALTH AND SOCIAL CARE: Component 3 Health and wellbeing

Learning Aim A: Social, emotional, cultural, economical & environmental factors

How can factors such as Stress and living conditions affect us? Understanding these factors is essential knowledge for your component 3 Health and social care exam.

WEEK 1 and 2: Social interaction - Reacting to people through communication & relationships.

1. **Between** - Family/ friends/ work colleagues/ school friends.
2. **Integration** - When people belong to a group.
3. **Isolation** - When people do not have contact with others..
4. **Effects of relationships on PIE**

WEEK 3 and 4: Willingness to seek help or access service

1. **Asking for help -** People need to seek help from health & social services at various stages. Being reluctant can lead to negative effects.

8 Barriers to accessing services:

1. **Physical** - Poor access into & out of services.
2. **Sensory** - Hearing and visual difficulties.
3. **Social, cultural and psychological** - Differing cultural beliefs/ social stigma/ fear.
4. **Language** - Differing first language/ language impairments e.g. stutter.
5. **Geographical** - Distance of service provider/ poor transport links.
6. **Intellectual** - Learning difficulties.
7. **Resource** - Staff shortages/ high demand.
8. **Financial** - Charges for services/ cost of transport/ loss of income.

WEEK 5 and 6: Stress-Mental & emotional tension

1. **Hormone adrenaline** is released, triggers 'fight or flight' response.
2. **Over reaction** to non-life threatening situation can cause negative stress.
3. **Causes** - Pressures at work/ Exams/ Financial difficulties/ Life events.
4. **Effects of stress on Health and wellbeing:**

   Physical - Tense muscles/Fast breathing/Faster heartbeat/ Sleeplessness/High blood pressure.

   Intellectual - Forgetfulness/Poor concentration.

   Emotional - Difficulty controlling emotions/Feeling insecure.

   Social - Breakdown of close relationships/Loss of confidence/ Social isolation.

WEEK 7 and 8: Environmental conditions

1. **Environmental** - Air, water and land around us.
2. **Pollution** - Contamination of the environment & living organisms by harmful chemicals.
3. **Examples:**

   Outdoor air - Chemicals from factories, exhausts.

   Indoor air - Aerosols, mould, cigarette smoke, carbon monoxide from heating.

   Water - Farm fertilisers/pesticides, waste, sewage.

   Food pollutants - chemicals in food production.

   Noise - Machinery and traffic music, loud neighbours.

   Light - Excess lighting, street lights.
4. **Impact of pollutants -** Lung problems e.g. asthma/Heart damage/ Low birth weight or premature births.

WEEK 9: Living conditions - Housing

1. **Good living conditions** - Less pollution/Quiet/Safe/Spacious/Dry/ Safe outdoor space.
2. **Poor living conditions** - Overcrowding/Anxiety & depression/ sleeplessness/difficulty concentrating/Lack of open space/Pests/ Damp & mould/Poor health.
3. **City living** - Better transport links/Close to services/More social events/Pollution problems.
4. **Rural living** - Sense of community/Outdoor space/Less polluted/ Less services/Isolation.

WEEK 10: Economic conditions

1. **Wealth -** Level of income/Amount of personal wealth/ including non-essential/ valuable material possessions.
2. **Employment/unemployment** - Part time/Self-employed/Made redundant/Claiming benefits.
3. **Adequate income** - Pay for rent/Mortgage/Pay bills/Afford luxuries/Eat a balanced diet/Socialise with Friends.
4. **Relative Poverty** - Can only afford essentials/Life choices will be limited due to suffering from ill health/Lack personal development.
5. **Absolute Poverty** - Not enough money to meet basic needs even with benefits.

YEAR 10 CYCLE 1 - DESIGN TECHNOLOGY: Product Design

KEY VOCABULARY

Motion - The action or process of movement in a particular direction.

Linkage - A linkage can change the direction of motion and the amount of force.

Magnitude - Is the size or amount of something, as opposed to its direction.

Fulcrum (pivot) - Is the point where a lever pivots to move a load.

Velocity - The speed of an object in a given direction.

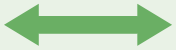
Equilibrium - When a lever is balanced it has equilibrium - the load is balanced on either side.

WEEK 1

Linear motion moves in a straight line in one direction only.

Rotary motion rotates arounda central axis.

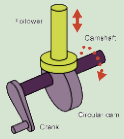
Reciprocating motion moves back and forth or up and down along a straight line.



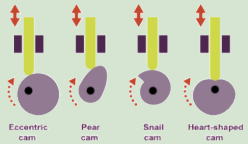
Oscillating motion moves back and forth along a curved line.

WEEK 2

1. Cams are shaped pieces of material that are attached to the camshaft.
2. Cams change rotary motion into reciprocating motionthrough a follower.



3. Types of cams. Different shaped cams are used for different tasks:



WEEK 3

1. **Levers** use mechanical advantage to make lifting or applying pressure easier. All levers are made of a bar and a pivot, called a fulcrum. Levers have three main parts:
   - **Effort**
   - **Fulcrum**
   - **Load**

   There are three types of lever:

Class 1	Effort	Fulcrim	Load
Class 2	Effort	Load	Fulcrim
Class 3	Fulcrim	Effort	Load

2. **Mechanical advantage:** To overcome a large load with relatively little effort.

   Mechanical advantage = effort ÷ resistance

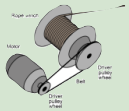
WEEK 4

Drive mechanisms:

1. A gear is a toothed cog wheel fixed to a shaft which rotates. **A gear train** is where two or more gears mesh together.

Gear ratio = number of teeth on driven gear ÷ number of teeth on the drive gear

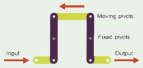
2. Pulleys are wheels with a grooved rim which a belt passes around.



WEEK 5

1. **Linkages are mechanisms that use rigid parts to change:**
   - The magnitude of a force.
   - The direction of a force, or transform it into a different motion.
2. **Reverse motion linkage** changes the direction of the input motion.

3. **Parallel motion linkage** keeps the direction of the output the same as the input.



WEEK 6

All materials, structures and products have to withstand various stresses as forces are applied, these include:

- Tension
- Compression
- Bending
- Torsion
- Sheer

Force = Mass x Acceleration

Static load; this is a load that does not change in size, position or direction.

Dynamic load; this is a load that changes in either size, position or direction.

WEEK 7

Designing and design decisions:

1. **Ergonomics** is the process of designing or arranging products so that they fit the people who use them.
2. **Anthropometrics** is the measurement of body sizes at rest and when using products and furniture.
3. **Prototype:** Is a first or preliminary version of a product which can be modified further.

WEEK 8

Designing and design decisions:

1. **Quality control (QC)**Process to check quality against a set standard or specification: the quality of the product at different stages of production.
2. **Quality assurance (QA)** Does not check the quality of the final product but the quality of all systems on the production line, staff training and quality monitoring.

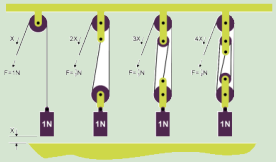
WEEK 9

1. **. Tolerance** is an acceptable margin of error for manufactured parts.
2. **Tessellation** limits the amount of waste material by nesting shapes together.
3. **SI units** - Système international units are standard across the world, these include:
   - Metre
   - Kilogram
   - Ampere

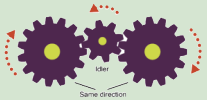
The preferred unit of measurement is millimetres (mm) for accuracy without the need for a decimal point.

WEEK 10

1. **Block and tackle** systems combine pulleys to lift heavy weights.



2. **An idler gear** ensures that the direction of the drive gear and the driven gear are the same.



YEAR 10 CYCLE 1 - GCSE RELIGIOUS STUDIES: Theme B - Religion & Life

WEEK 1

Key terms

Cohabitation

A couple living together without being married/in civil partnership.

Compassion

Sympathy and concern for the suffering of others.

Contraception

Precautions taken to prevent pregnancy and to protect against contracting or transmitting STIs (sexually transmitted infections).

Divorce

Legal ending of a marriage.

Extended family

Family unit comprising two parents and their children, but also grandparents, cousins etc.

Family planning

Planning when to have a family and how big a family to have by use of birth control practices and/or contraception.

Gender discrimination

Acting on prejudices against someone because of their gender.

Gender equality

Belief that all genders have equal status and value, so discrimination against any is wrong.

Gender prejudice

Negative thoughts, feelings or beliefs about a person or group based on their gender.

WEEK 2

Key terms (continued)

Heterosexuality

Being physically/sexually attracted to persons of the opposite gender.

Homosexuality

Being physically/sexually attracted to persons of the same gender.

Mahr

A money payment made to a Muslim bride.

Nikkah

A contract between a husband and wife in Islam.

Nuclear family

Family unit made up of two parents and their child(ren).

Polygamy

The practice of having multiple spouses (wives and/or husbands).

Procreation

Having a child; seen as a duty in many religions.

Remarriage

Marriage for the second time, after divorce ending an earlier marriage.

Sharia Law

A code for living that all Muslims should adhere to.

Vows

Promises made during a marriage ceremony.

WEEK 3

Origins of the Universe

Christian Ideas

- **Christians** believe the universe was designed and made by God.
- **The creation story in Genesis** 1 says that God made the world in six days.
- **Literalist Christians** believe this is true and that God created Adam + Eve.
- **Liberal Christians** say the creation story in the Bible is just a story and may agree with scientific ideas about creation.

"In the beginning God created the heavens and the earth" - Genesis 1:1

Scientific Ideas

- **-The Big Bang Theory** argues that the universe started as a mass which expanded creating stars, galaxies and planets.
- **The Theory of Evolution c**omes from Charles Darwin who argued that humans were not designed by God but evolved from apes.

Muslim Ideas.

Islam encourages the search for a clear understanding and scientific explanations that may enable a greater understanding of God. Muslims may believe that evidence for the Big Bang shows how God created the world.

WEEK 4

Use & Abuse of the Planet

Stewardship

- **Stewardship** means Christians have a **duty** to look after the environment on behalf of God and for future generations.
- This can be seen where Christians campaign for environmental charities or choose to reduce waste and recycle.

"Rule over [..] every living creature" - Genesis 1:28

Dominion

- **Dominion** is the idea that God gave humans power and authority over the world.
- Some Christians believes this allows them to use **natural resources** (e.g. oil and coal) and animals to make their lives better.
- In **Genesis** God gives Adam and Eve the power to name the animals and rule over them.

Islam

Muslims believe that they must be good stewards, this is called khalifah. They have been trusted by God to take care of the environment and make the world a peaceful

WEEK 5

Animal Rights

Many people believe that all living things should be treated with respect. They believe animals have the same right to be protected from ill-treatment and **exploitation** as humans.

Islam teaches that animals have been made for the benefit of humans, but should not be abused. Animals can therefore be eaten and used for testing medicines, but they should be killed in a halal (acceptable) way.

The **Christian** belief that human beings are **stewards** of creation means that in general they are against:

Neglect or ill-treatment of animals, keeping animals caged or chained for human entertainment encouraging animals to fight for sport, (e.g. cockfighting).

Trading in certain animal products such as fur or ivory, hunting for sport where animals may be injured or killed, damaging the environment to the extent that the survival of a species is under threat, factory farming where conditions are poor and animals are severely restricted in space.

YEAR 10 CYCLE 1 - GCSE RELIGIOUS STUDIES: Theme B - Religion & Life

WEEK 6

Abortion

Abortion is the removal of a foetus from the womb in order to end a pregnancy.

- In the UK (except Northern Ireland) it is **legal** during the first 24 weeks of pregnancy unless the mother's life is in danger or the foetus is severely deformed.

Christian

× **The Catholic Church** is strongly against abortion. They believe in sanctity of life, the idea that life is a sacred gift from God which only God can take away. They see the foetus as a living thing.

✓ **The Church of England** think abortion is sometimes acceptable as a pregnancy as a result of rape or where the child would be very ill would lead to a very poor quality of life.

Islam

Muslims are taught to value all human life. This means that many would be against abortion. However some believe it is acceptable when a woman is raped. Abortion must take place before ensoulment (when a baby receives its soul on the 120th day of pregnancy).

WEEK 7

Euthanasia

Because of **Christian beliefs** in the **sanctity of life,** many Christians will be against euthanasia because it interferes with God's plan. They would prefer a patient to have their pain lessened in a hospice.

Muslims believe all suffering happens for a reason. Therefore they would not allow euthanasia as it is interfering with God's plan and goes against the sanctity of life.

- **Voluntary** euthanasia is where the patient asks for their life to be ended.
- **Non-voluntary** euthanasia is where the patient is not capable of asking to die, perhaps in a coma.
- All forms of euthanasia are currently **illegal** in the UK.

× **The Catholic Church** is strongly against euthanasia. They believe that only God can give and take life and that life is sacred **(sanctity of life).**

✓ Some **liberal Christians** think euthanasia can be an act of mercy which Jesus tells them is a good thing to do, this is especially the case when someone's **quality of life** is very poor.

WEEK 8

Sanctity of Life

Christians

Some Christians believe that the quality of life is more important than the sanctity of life, and would therefore permit euthanasia and abortion.

For Christians, human life is **sacred** and is a gift from God which is to be respected and protected. This teaching is called the **sanctity of life.**

The Bible teaches that human beings are created in the image of God. It also teaches that murder is forbidden.

Jesus reminded his followers that each person is precious to God, so much so that God has counted every hair on their head.

Islam

Muslims believe all suffering happens for a reason. Therefore they would not allow euthanasia as it is interfering with God's plan and goes against the sanctity of life.

In Islam, life is sacred and one of the greatest gifts and blessings of God. Every moment of life has great value and is irreversible. Therefore, it must be appreciated and protected; even if it has a poor quality.

WEEK 9

Life After Death

Greek philosopher Plato believed that life after death was a reality.

Plato was a dualist and believed that people have souls which are separate from their physical bodies.

NDE

Those who have had a near death experience describe having experienced a sense that they have died or have been removed from the world; Others have had an intense feeling of love and acceptance; Some describe having out of body experiences and some have said they observed doctors performing resuscitation on them or moving towards a bright light. Some have had an awareness of being in a beautiful garden; Meeting dead friends or relatives or beings dressed in white; Finally, a sudden feeling of being pulled back into their physical bodies.

Ghosts & Reincarnation

Others may believe in a spiritual world, or reincarnation.

Other may believe that nothing happens and that there is no afterlife.

WEEK 10

Religion & Death

Christianity

Christians believe that when you die you will be judged and that those who are found to be good will go to **heaven** but those who have sinned and gone against God's wishes will go to **hell.**

Roman Catholics believe that there is a middle stage called **purgatory** where souls go to be purified of sin before they go to heaven.

Some Christians believe that Jesus will return on a future **Day of Judgement** when all souls will be judged.

Islam

Islam teaches that there is life after death, **and this is known as Akhirah.** In Islam, it is Allah who decides when a person dies and most Muslims believe that when they die, they will stay in their graves until Yawm al-din, the Day of Judgement.

Those who have performed more good deeds than bad will enter **Jannah,** or **Paradise.**

Jannah is a place described as a 'garden of everlasting bliss' and a 'home of peace'. In Jannah there will be no sickness, pain or sadness.

YEAR 10 CYCLE 1 - SPORTS SCIENCE
R187: Increasing Awareness in Outdoor Activities

WEEK 1: Topic 1 - Know about different types of outdoor activities

Examples of outdoor activities:

- Water sports (e.g. dinghy sailing, windsurfing)
- Trekking (e.g. hillwalking, orienteering, mountaineering).
- Camping (e.g. wild camping).
- Climbing (e.g. single pitch, abseiling).
- Caving (e.g. potholing, mine exploration).
- Cycling (e.g. mountain biking, trail biking).
- Snow sports (e.g. snowboarding, cross country skiing, downhill skiing, snowshoeing).
- Gliding (e.g. hang gliding, paragliding)
- Other land-based activities (e.g. gorge walking, sea level traversing, high rope courses).

WEEK 2: Topic 1 - Provision of Outdoor Activities in the UK - National & Local

Provision of outdoor activities in the UK, i.e.

- Outdoor activity providers (e.g. outdoor activity centres, activity specific organisations, residential centres/camps).
- National sports centres (e.g. Plas-y-Brenin in North Wales, Holme Pierrepont in Nottinghamshire).
- Voluntary organisations (e.g. Scouts, Guides, Duke of Edinburgh's Award).
- Examples of local and national providers of the different outdoor activities identified. Some Local Examples: Haven Banks, Quay Climbing, Dartmoor Training centre, Exe Adventures, Ashcombe Adventures, Red Rock Exmouth. Some National Examples: Xscape, SnoZone.

WEEK 3: Topic 2 - Equipment and Clothing

There are different categories of clothing types:

Safety Clothing - Specialist footwear (e.g. walking boots and rock shoes) which are needed for the activity to meet the safety requirements.

Specialist Clothing - (e.g. water sports) - Appropriate use of wetsuits or (e.g. snow sports) - Appropriate use of snowshoes or skis.

Types of technology:

GPS and Signalling Devices - Electronic maps, personal beacons, emergency position radio beacons.

Waterproof technology - Communication devices, casing for technology, smart watch or activity trackers.

Specialist equipment and clothing - Snow mobiles; overland vehicles; scuba rebreathers etc.

Light weight equipment and clothing

WEEK 4: Topic 3 - Be able to plan an outdoor activity: Key considerations

- **Health and safety** (e.g. is the activity suitable for the group, have all potential risks been identified).
- **Personnel** (e.g. ratio of leaders to participants, is the activity leader suitably qualified?).
- **Adventure Activities Licensing Authority** (e.g. centres delivering outdoor activities have to have a license).
- **Clothing and equipment** (e.g. appropriate to the activity, not damaged/torn).
- **Location** (e.g. is the terrain suitable for the activity, is it suitable for the experience of the participants?).
- **Supplies** (e.g. will there be access to food and water?).
- **Emergency procedures** (e.g. is there a first aider available, is there an escape route should you become trapped, will there be mobile phone reception to contact emergency services?)
- **Contingency plans** (e.g. alternative route should there be an unexpected obstruction, spare equipment should any break).
- **Shelter** (e.g. will an overnight stay be required, is there shelter from adverse weather conditions?).
- **Weather forecast** (e.g. will the weather conditions be suitable for the activity, will the weather conditions cause any risk during the activity?).
- **Timing** (e.g. is the time length of the activity suitable?)

WEEK 5: Topic 3 - Be able to plan an outdoor activity: Hazards to be aware of

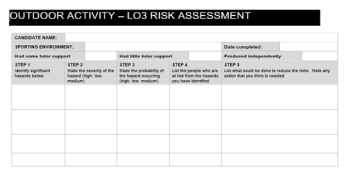
Hazards to be aware of:

- Inappropriate supervision/tuition.
- Poor/incorrect equipment (e.g. wrong type of footwear, a back pack that is too heavy).
- Unforeseen weather conditions (e.g. blizzards/flash floods).
- illness/injury (e.g. dehydration, frost bite, fractures/sprains).
- Poor organisation (e.g. undefined roles within a team, inaccurate timings).
- Getting lost.
- Unstable terrain (e.g. mud slides, avalanches).
- Animals and insects (e.g. insect bites, animals scavenging food).

YEAR 10 CYCLE 1 - SPORTS SCIENCE
R187: Increasing Awareness in Outdoor Activities

WEEK 6: Topic 3 - Risk Assessment

Completing a risk assessment form:


OUTDOOR ACTIVITY – LO3 RISK ASSESSMENT

CANDIDATE NAME:
SPORTING ENVIRONMENT:
Date completed:
Had some tutor support | Had little tutor support | Produced independently

STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
Identify significant hazards below	State the severity of the hazard (high, low, medium)	State the probability of the hazard occuring (high, low, medium)	List the people who are at risk from the hazards you have identified	List what could be done to reduce the risks. Note any action that you think is needed

- Consider the risks.
- What can be done to reduce/prevent the risk.
- Safety checks - equipment; training; qualifications.
- Evolve.
- Contingency plans.

WEEK 7: Topic 3 - Emergency Procedures

Providing First Aid:

- DR ABC.
- Calling the emergency services - 999 or 112.
- Communication protocols.
- Accident reporting.

Fire:

- Fire protocols/routines.
- Treating minor burns in camping.

Rescue procedures:

- Rescue plans and techniques for the activity.
- Escape routes.
- Calling the coastguard.
- Calling mountain rescue.
- Using technology for rescue purposes.

Emergency Contact lists:

RTA when Travelling in a minibus.

WEEK 8: Topic 3 - Knowledge and Skills

You must be able to demonstrate these skills

Care and use of equipment:

- Understanding of correct purpose and use of activity-specific equipment (e.g. Harnesses in rock climbing).
- Ability to use activity-specific equipment.
- Appropriate storage to avoid damage.

Safe practice:

- Follow instruction closely.
- Ensure they have the prescribed. clothing/equipment.
- Make sure they are aware of emergency procedures.

Communication skills:

- Verbal (e.g. appropriate language, suitable level of information provided).
- Non-verbal (e.g. hand signals in scuba-diving).
- Activity specific language/ terminology.

Decision-making skills:

- Defining and clarifying an issue.
- Gathering facts about issues and understanding their causes.
- Generating/brainstorming possible solutions comparing the pros and cons of the options selecting the best option.

WEEK 9: Topic 3 - Knowledge and Skills

You must be able to demonstrate these skills

Team-working skills:

- Reliability.
- Active listening.
- Active participation.
- Collaborative working.
- Demonstrating commitment.
- Treating others with respect.

Problem-solving skills:

- Prioritise issues.
- Set targets for resolution (e.g. I need to resolve this problem before the sun sets).
- Use experience to help resolve problem (e.g. when I encountered a similar problem I tried this to resolve it).
- Monitor their performance in resolving a problem (e.g. this isn't working, I'll try something else).
- Evaluate their performance in resolving a problem (e. g. next time it will be better if I do this first).

WEEK 10: Topic 4 - Evaluating the benefits of participation

Mental Benefits - Reduce stress and anxiety and having the opportunity to relax doing what they enjoy. Improved self confidence, enjoyment, motivation, problem solving, challenge.

Physical Benefits - Increasing general fitness and improving your health. The benefits of being outdoors - fresh air, sunlight on the body.

Social Benefits - Social benefits to be gained through the opportunity to work and co-operate with others, becoming involved in teamwork. The togetherness will also involve in becoming aware of the different safety issues that are associated with the different outdoor activities. Improved communication, team working, and problem solving.

YEAR 10 CYCLE 1 - STATISTICS: Unit 7 and 8

INDEX NUMBERS AND PROBABILITY DISTRIBUTIONS

- Interpreting index numbers in context and simple calculations.
- Binomial distribution.
- Normal distribution and standardised scores.
- Quality assurance.
- Probability.

WEEK 1

What are index numbers?	They calculate the price of an item with a base year price.
How do you calculate an index number?	$\frac{\text{Price}}{\text{Base year price}} \times 100$
What is RPI?	Retail Price Index - Shows the rate of change of prices in everyday life, such as food, mortgage payments, heating and petrol.
What is CPI?	Consumer Price Index - Also measures the rate of price changes but does not include mortgage payments. State benefits and pensions are increased in line with CPI.
What is GDP?	Gross Domestic Product - Is the value of goods and services a country produces within a time period.

WEEK 2

Weighted index number	$\frac{\text{Current weighted mean price}}{\text{Base year weighted mean price.}} \times 100$
Chain base index numbers	Compare prices from each year with the previous year.
How do you calculate chain base index numbers?	$\frac{\text{Price}}{\text{Last year's price}} \times 100$
Crude birth rate	$\frac{\text{Number of births}}{\text{Total Population}} \times 1000$
Crude death rate	$\frac{\text{Number of deaths}}{\text{Total Population}} \times 1000$

WEEK 3

Standard Population definition	A hypothetical population of 1000 people that is representative of the whole population.
Standard Population	$\frac{\text{Number in age group}}{\text{Total Population}} \times 1000$
What does B(n,p) mean?	Binomial Distribution. n = number of trials p = probability of success
What are the properties of a binomial distribution?	1. Each trial only has two outcomes. 2. Each trial is independent. 3. There are a fixed number of trials.
What is the mean of a binomial distribution?	n x p (np)

WEEK 4

How do you use the IQR to identify an outlier?	An outlier is any value that is: BELOW: LQ - 1.5 x IQR ABOVE: UQ + 1.5 x IQR
How do you use mean and standard deviation to identify an outlier?	(This one is not used as much) If a value is outside ±3 s.d. from the mean, it can be considered to be an outlier.
List the important properties of a normal distribution.	**Mean = Median = Mode** 68% of data is ±1 s.d. of the mean 95% of data is ±2 s.d. of the mean 99.7% of data is ±3 s.d. of the mean
What is the formula for a standardised score from a normal distribution?	$z = \frac{(x-\mu)}{\sigma}$ *x* is the given value μ =mean σ = standard deviation μ is "mu" σ is "sigma"

YEAR 10 CYCLE 1 - STATISTICS

WEEK 5

What is Quality Assurance?	Checking samples to ensure that the product of a manufacturing process conforms to appropriate standards.
What is a control chart?	A time Series chart that is used for quality assurance.
Where are warning limits set?	Usually $\mu \pm 2\sigma$ (where μ = mean, σ = standard deviation)
Where are action limits set?	Usually $\mu \pm 3\sigma$ (where μ = mean, σ = standard deviation)

WEEK 6

Where are warning limits set?	Usually $\mu \pm 2\sigma$ (where μ = mean, σ = standard deviation)
Where are action limits set?	Usually $\mu \pm 3\sigma$ (where μ = mean, σ = standard deviation)
What happens if the sample mean is between the warning and action limits?	Another sample is taken immediately to see if there is a problem.
What happens if the sample mean is outside of the action limits?	The process is stopped and machinery reset.

WEEK 7

What is probability?	The chance of an event happening.
Probability is found by…	$\frac{\text{number of successful outcomes}}{\text{total possible outcomes}}$
Estimated Probability	$\frac{\text{number of successful trials}}{\text{total number of trials}}$
Expected Frequency of event A	$P(A) \times \text{number of trials}$ Where $P(A)$ is the relative frequency.

WEEK 8

Risk of an event	$\frac{\text{number of successful trials}}{\text{total number of trials}}$
What is Absolute Risk?	Probability of an event happening.
What is Relative Risk?	How many times more likely it is to happen to one group than another.
P(Not A)	$= 1 - P(A)$

WEEK 9

What does Mutually Exclusive mean?	When two events can't both happen at the same time (e.g. picking up a piece of fruit and it being both an apple and a banana).
Addition Law of Probability	$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$
What are independent events?	When one event doesn't affect the probability of another.
If two events are independent, what is P(A and B)	$P(A \text{ and } B) = P(A) \times P(B)$

WEEK 10

How do you write "the probability of B given that A has happened"?	$P(B\|A)$
What is conditional probability?	When one event does have an impact on the probability of another.
What is the conditional probability of B given that A.	$P(B\|A) = \frac{P(A \text{ and } B)}{P(A)}$
For two independent events A and B, what is *P(B|A)?*	$P(B\|A) = P(B)$ Because $P(A \text{ and } B)$ is $P(A) \times P(B)$ when two events are independent.

YEAR 10 CYCLE 1 - CREATIVE iMEDIA

WEEK 1

Types of animation:

Stop-Motion - 3D objects are created and photographed as frames.

Cel animation - Objects are drawn or painted on transparent sheets.

Digital/CGI - Frames are created on a computer using specialist software.

Flip-book - Drawings on a series of pages when flicked through create the appearance of motion

Time-lapse - Where photos are recorded at a greater time interval than their playback speed.

Cut-out - A form of stop-motion animation using flat characters, props and backgrounds cut from materials such as paper.

WEEK 2

The purpose and conventions of animation:

Advertising - Typically short videos that communicate information clearly and quickly in a creative way to be memorable.

Education - Use of models and processes that can be visualised to help understanding (e.g. motion of the planets around the sun).

Information - Illustration of facts (e.g. health and safety), engagement of younger participant/viewers to convey a message clearly.

Entertainment - Story telling, music videos, emoticons and memes.

WEEK 3

Sound in animation can be digital or analogue:

Music - Dramatic/ sound track.

Narration/voice-over

Diegetic (Heard by the characters)
Foly/SFX - Sounds added after filming (special effects).

Dialogue

Properties of audio:

Bit depth - The number of bits of information in each sample.

Sample rate - The number of samples per second.

Gain - The level (voltage/signal) which is INPUT to an amplifier.

Volume - The level (voltage/signal) which is OUTPUT from an amplifier.

WEEK 4

Music and sound can be used to convey a message/impact or to enhance screenplay:

Styles of music - Musical genre and style used to create or match an atmosphere/mood or set the type or - theme of an animation.

Instrumentation - Different sounds by instruments evoke different feelings and moods.

Pitch - High or low sounds.

Tempo - The speed or beat of the music.

Timbre - The character or quality of a sound (smooth, harsh, flowing or jumpy).

Mono - When only one channel is used to generate sound.

Stereo - When 2 or more channels are used with audio.

WEEK 5

Conventions used in audio to meet a purpose:

Mood setting: Using music or non diegetic sound usually after the scene has started or to change the mood of a scene for example from calm and relaxing to tense and dark.

Scene setting: Sounds and music used as the scene starts timing and synchronisation with visuals. Impact music to jump or to add the emotion of a particular event e.g. a fight scene.

Synchronisation of sound and image so the sounds match the image changes e.g. voice overs.

WEEK 6

Planning an animation:

Client Brief - The client is the customer, The brief is the description of the specific needs of the client. It will include the size, purpose and content of the product. It should be used as a starting point for design and the client should be consulted throughout the design process to ensure compliance.

Target Audience - These are the customers that the product is aimed at. Research is needed to identify the characteristics to the TA in order that the product will be appropriate.

WEEK 7:

Mind map (spider diagram) - A technique for collecting and organising information and ideas v**isually** on a topic or theme (central node). It includes:

- Text to explain key ideas and the links between ideas.
- Images at nodes and sub nodes
- Sub nodes to expand on key ideas - Links between ideas with text to explain the link.

Purpose:

- Fast way to generate ideas.
- Link ideas together.
- Easy to read and discuss.

WEEK 8

Hardware and software for use in animations

Hardware - Microphone, camera, computer/IT capable of operating the software/large memory. Recording devices. Audio capture software.

Software - Flash, Fireworks,

Pre-production documentation for content - Scripts, storyboards, timelines, graphic scores.

Planning for style - Consideration of target audience when choosing music/ sound effects to maximise engagement.

WEEK 9

Creating an animation. You must be able to...

Use drawing and editing tools to create objects, characters and backgrounds.

Group elements together or breaking elements apart before creating movement.

Name, save and organise assets within libraries in animation software and/or in folders outside of the software.

Save digitised visual content in a format which is compatible with animation software.

WEEK 10

Use techniques for creating sounds (eg. recording using appropriate equipment).

Locate and use libraries and stock sounds, music and sound effects when identifying and selecting pre-made audio content. Save audio assets using suitable file formats, which are compatible with audio editing software.

Edit sounds in audio editing software using fade, gain, filter, noise removal, pitch, equalisation, inversion and effects tools.

Keywords: Trope, diegetic/non-diegetic, mono/stereo/Foley, SFX, Narration, timbre, tempo, pitch, synchronisation, derivative and imaginative design, storyboard, client brief.

YEAR 10 CYCLE 1 BIOLOGY

KEY VOCABULARY

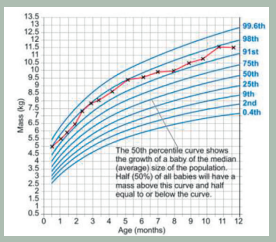
1. **Cataracts:** a cloudy patch on lens meaning light struggles to enter eye and impairs vision.
2. **Chromosome:** made up of tightly coiled DNA.
3. **Clone:** an organism which is genetically identical to its parent.
4. **Centralnervous system(CNS):** Comprised of the brain and spinal cord.
5. **Differentiation:** a term for specialisation. When a non-specialised cell develops specialised features.
6. **Diploid:** two sets of chromosomes; 23 pairs.
7. **Gamete:** a sex cell; the sperm in males and the egg in females.
8. **Gene:** a short section of DNA.
9. **Haploid:** one set of chromosomes; 23 only, found in the nuclei of gametes.
10. **IVF:** In vitro-fertilisation; when fertilisation happens outside the human body.
11. **Long-sightedness:** when people cannot focus on close objects. The eyeball is too short.
12. **Neurone:** a nerve cell. There are three types.
13. **Neurotransmitter:** a chemical which diffuses across synapses.
14. **Receptor cell:** these are cells in the sense organs that detect stimuli, e.g. the receptor cells for light are in the retina of the eye.
15. **Short-sightedness:** people who cannot focus on objects that are far away, the eyeball is too long.
16. **Somatic cell:** a normal body cell. Has a diploid nucleus.
17. **Stem cell:** an unspecialised cell that can differentiate into any specialised cell.
18. **Stimulus:** a change in the environment.
19. **Synapse:** a gap between two neurones that electrical impulses cannot pass.

WEEK 1

1. **Mitosis** is a form of cell division so organisms can **grow, Replace dead cells and repair damaged ones.**
2. Mitosis creates **2 genetically identical diploid** daughter cells.
3. These are the stages of the cell cycle:
   - **a. Interphase:** duplication of DNA.
   - **b. Prophase:** breakdown of the nuclear membrane.
   - **c. Metaphase:** chromosomes line up in the middle of the cell.
   - **d. Anaphase:** spindle fibres separate chromosomes by pulling them to either end of the cell.
   - **e. Telophase:** a new nuclear membrane appears around the set of chromosomes.
   - **f. Cytokinesis:** a new cell membrane formscreating 2 separate identical cells.

WEEK 2

1. **Sexual reproduction:**
   - a. Requires two parents
   - b. There is variation between the offspring
2. **Asexual reproduction:**
   - a. Only needs one parent
   - b. Relies on mitosis
   - c. Creates genetically identical clones
3. **Percentile growth charts** are used to monitor and compare growth in babies.



WEEK 3

1. Growth in animals follows this pattern: **Cell division - Differentiation**
2. Growth in plants follows this pattern: **Cell division - Elongation - Differentiation**
3. **Differentiation** is the process of an unspecialised cell developing into a specialised cell.
4. Specialised cells are adapted to carry-out their function:
   - **a. female gamete:** haploid nucleus, cell membrane hardens after fertilisation, high level of nutrients in cytoplasm
   - **b. male gamete:** haploid nucleus, acrosome containing enzymes, many mitochondria, flagellum
   - **c. Ciliated epithelial cells:** contain cilia (tiny hairs) to move egg or pathogens, many mitochondria

WEEK 4

1. **Stem cells** are unspecialised cells which have the ability to differentiate into any type of cell.
2. There are two types of stem cells in humans:
   - **a. Embryonic stem cells**
   - **b. Adult stem cells**
3. The stem cells found in plants are called **meristems.**
4. **Embryonic stem cells** are embryos (ball of dividing cells following fertilisation). Often left over from IVF treatment. These can differentiate into any type of cell.
5. **Adult stem cells** are found in any fully developed animals. These can often only specialise into limited types of cells in the tissue that is surrounding them.
6. **Meristems** are found in the tips of roots and tips of shoots of plants.

YEAR 10 CYCLE 1 BIOLOGY

WEEK 5

1. **Stem cells** can be used in medicine to treat diseases and also used to replace damaged cells.
2. **Benefits of using stem cells:**
   a. Treat diseases.
   b. Replace torn and damaged tissue.
3. **Risks of using stem cells:**
   a. **Chance of rejection** if stem cells from another person are used.
   b. **Ethical issues** surrounding the use of embryonic stem cells - obtaining stem cells destroys the embryo.
   c. Possibility of stem cell continuing to divide once inside the body causing tumours and then **cancers**

WEEK 6

1. **The brain** is made of billions of neurones which work with one another and other parts of the body to process information The main areas of the brain are:
2. **Cerebral cortex:**
   a. Front of brain.
   b. Divide into two hemispheres; left and right.
   c. Used for senses, memory, consciousness and behaviour.
3. **Cerebellum:**
   a. Found at the base of the brain.
   b. Controls balance, posture and fine motor skills.
4. **Medulla oblongata:**
   a. Connects the brain to the spinal cord.
   b. Controls heart rate and breathing rate.
5. **Spinal cord** carries information between brain and body.

WEEK 7

1. **Scanning** allows us to look into the brain whenthere are problems.
2. **CT scans** use x-ray beams to show the shapes and structures of the brain.
3. **PET scanning** uses radioactive tracer chemicals to show which parts of the brain are functioning whilst in the scanner.
4. **If the spinal cord is damaged then the flow of information between the brain and body can be disrupted.**
   a. Hard to treat; no adult stem cells can differentiate into spinal cord neurones
5. **Brain tumours** can squash parts of the brain and stop them working.
   a. Some can be cut out.
   b. Sometimes the cells can be killed using radiotherapy and chemotherapy.
   c. The blood-brain filter can stop this from working.

WEEK 8

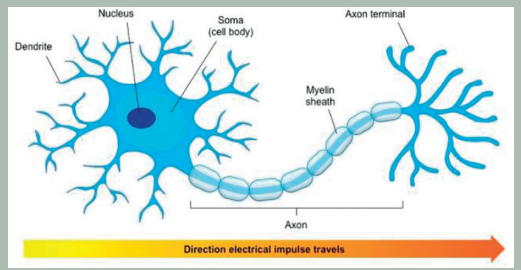
1. **The eye** is a sense organ containing receptor cells. The main parts of the eye:
   a. **Pupil:** in the centre of the eye; where light enters
   b. **Cornea:** helps to focus the light by bending it
   c. **Lens:** fine-focuses and refracts light into eye
   d. **Ciliary muscles:** help to change the shape of the lens
   e. **Retina:** at the back of the eye contains receptor cells; rods (light intensity) and cones (detect colour)
   f. **Optic nerve:** carries impulses to the brain
2. Problems with the eye can be **short sightedness, long sightedness, cataracts** and damage to retina **causing colour blindness.**

WEEK 9

1. **The nervous system** enables humans to react to their surroundings and to coordinate their behavior.
2. **Reflex arc:**
   a. **Receptor cells** in the sense organs detect a stimulus (change in environment)
   b. Information travels along **sensory neurones** in the form of **electrical impulses.**
   c. The impulse travels around the **CNS** (brain and spinal cord) via **relay neurones.**
   d. Information travels down motor neurones to the **effectors** (either a muscle or endocrine gland) to carry out a response
3. **A synapseis** a gap between two neurones; electrical impulses cannot pass this gap and so a chemical called a **neurotransmitter** diffuses across.

WEEK 10

1. **Aneurone is a specialised cell and has many adaptions:**
   a. **Dendrites** receive electrical impulses and cover a large surface area.
   b. **Myelin sheath** is a fatty layer surrounding neuron which insulates and speeds up transmission.
   c. **Axon terminals** have a large surface area to pass on impulses.



YEAR 10 CYCLE 1 CHEMISTRY

KEY VOCABULARY

1. **Alkali:** a solution containing excess hydroxide ions (OH).
2. **Base:** a substance that will react with an acid to form only salt and water.
3. **Concentrate:** a high concentration of solute in a solution.
4. **Concentration:** the amount of solute per unit volume.
5. **Dilute:** a low concentration of solute in a solution.
6. **Filtrate:** a solution that is passed through a filter funnel.
7. **Filtration:** using a filter to separate an insoluble solid from a liquid.
8. **Ion:** an atom with an electrical charge due to the gain or loss of electrons.
9. **Neutralisation:** a reaction in which an acid reacts with a base to produce a salt and water only.
10. **Oxidation:** loss of electrons or the gain of oxygen.
11. **Reduction:** gain of electrons or the loss of oxygen.
12. **Residue:** material remaining in the filter after a mixture has passed through it.
13. **Soluble:** a substance that can dissolve.
14. **Strong acid:** an acid that will dissociate completely into ions when it dissolves.
15. **Titration:** a technique in volumetric analysis that is used to find the exact volumes of solutions which react with each other.
16. **Weak acid:** an acid that will not dissociate completely into ions when it dissolves.

WEEK 1

1. **Indicators** are used to determine whether a solution is **acid, alkaline or neutral.**
2. **Acids** contribute **hydrogen ions (H*)** and have a **pH between 1-6.**
3. **Alkalis** contribute **hydroxide ions (OH)** and have a **pH between 8-14.**
4. **Neutral** substances have **a pH of 7.**
5. **The higher** the **concentration** of **hydrogen ions** the **lower** the **pH.**

Colours of Different Indicators in Acid and Alkali		
Indicator	**Acid**	**Alkali**
Universal Indicator	Red	Blue
Litmus	Red	Blue
Phenolphthalein	Colourless	Pink
Methyl Orange	Red	Yellow

WEEK 2

1. **A base i**s any substance that reacts with an **acid** to form **water and salt** only in a **neutralisation reaction.**
2. **Acid + base > salt + water**
3. **Copper oxide + sulfuric acid > copper sulfate + water**
4. **Add the base in excess** to ensure all the solid reacts.
5. **The unreacted solid (residue)** is removed using a filter funnel.
6. **The liquid** that has been filtered (filtrate) contains **salt and water only.**
7. **A soluble** salt is one which will **dissolve in water.**

WEEK 3

1. **Acid + base > Salt + water**
2. **Copper oxide + sulfuric acid > Copper sulfate + water**
3. **Heat** the acid before the copper oxide is added to ensure all of the copper oxide reacts.
4. **Stir** the mix after the copper oxide is added so that is **dissolves.**
5. **Filter** the mix to remove the excess copper oxide, leaving the **residue** in the filter paper.
6. **Heat the evaporating basin** over a beaker of water to prevent the salt solution from **spitting.**
7. **The larger** the crystals that form the **slower** it took the water to evaporate.

WEEK 4

1. **Alkalis** are **soluble bases**
2. **Neutralisation** is a reaction between an **acid** and a **base**
3. **Acid + metal > salt + hydrogen**
4. **Acid + metal oxide > salt + water**
5. **Acid + metal hydroxide > salt + water**
6. **Acid + metal carbonate > salt + water + carbon dioxide**
7. (aq) - aqueous
8. (l) - liquid
9. (s) - liquid
10. (g) - gas

YEAR 10 CYCLE 1 CHEMISTRY

WEEK 5

1. When carrying out a reaction to form a soluble salt:

a. The **acid** is gently **warmed** so the reaction occurs **faster.**

b. The **solid reactant** is added in **excess** to **ensure all** of the **acid reacts.**

c. The **excess solid** is then filtered using a **filter funnel** and **filter paper.**

d. The **filtrate** is the **liquid** which passes through the filter funnel.

e. The **filtrate** is **poured** into an **evaporating basin** to be **heated.**

f. The **evaporating basin** is heated over a beaker half full of water - **to prevent spitting.**

g. The **filtrate** is heated to form a **concentrated salt** solution.

WEEK 6

Neutralisation Core Practical

1. Use a **measuring cylinder t**o measure **50ml** of hydrochloric acid to a **beaker.**
2. **Estimate and record the pH** of the contents of the beaker.
3. Put a piece of **universal indicator paper** onto a **white tile.**
4. **Dip** the end of a **glass rod** into the liquid, then tap it onto **the universal indicator paper.**
5. Wait **30 seconds**, then match the colour to the appropriate **pH** on the pH chart.
6. Rinse the glass rod with water.
7. Measure **0.3g** of calcium hydroxide powder add to the acid and **stir.**
8. Repeat steps 2 and 3 until **2.4g** has been added.

WEEK 7

Variations to the method of the neutralisation core practical

1. This can be completed with any acid and any base.
2. A **pH probe** can be used to get a more **accurate** measure of the pH.
3. More accurate results can be obtained by using a different **glass rod** each time to **stir the solution.**
4. You must ensure all of the powdered base has **dissolved** before testing the **pH.**
5. The **white tile** is used to make the colour change seen with the universal indicator paper **more clear.**
6. The **mass of c**alcium hydroxide can be plotted against the **pH** to form a **calibration curve.**

WEEK 8

1. **Acid + metal carbonate > salt + water + carbon dioxide**
2. Test for **hydrogen:** place a **lit splint over** the top of a test tube, you will hear a **squeaky pop if hydrogen is present.**
3. Test for **carbon dioxide:** bubble the gas though lime water, the solution will go **cloudy white** if it is present.
4. Acid-alkali **titration** is used to form a **soluble salt.**
5. The acid and **soluble** reactant are mixed in **correct proportions** to form a salt and water.
6. (l) - liquid
7. (s)- solid
8. (g)- gas
9. (aq)-aqueous

WEEK 9

1. Solubility rules:

a. All sodium, potassium and ammonium salts are soluble.

b. All nitrates are soluble.

c. All chlorides are soluble except silver and lead are insoluble.

d. Common sulfates are soluble except lead, barium and calcium.

e. Common carbonates, hydroxides are insoluble except sodium, potassium and ammonium.

2. Ionic bonding:

a. Is the **transfer of electrons** to gain a full outer shell forming oppositely charged particles that **attract due to electrostatic forces of attraction.**

b. Occurs between a **metal and a non-metal.**

c. Forms substances with have **high melting** and **boiling points.**

WEEK 10

1. When ionic substances are **molten** or dissolved in solution they **conduct electricity** because the **free electrons** can carry a **current.**
2. For a substance to **conduct electricity:**
   a. It must contain charged particles
   b. These particles must be free to move
3. Ionic substances will **not conduct electricity** in their **solid form** because their **ions are not free** to carry the current.

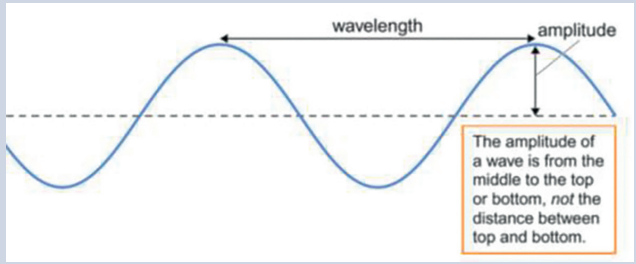
YEAR 10 CYCLE 1 PHYSICS

KEY VOCABULARY

1. **Acceleration:** a change in velocity over time. Measured in $m/s^{2.}$
2. **Amplitude:** maximum distance of a point on a wave from its rest position.
3. **Diffuse refraction:** refraction from a rough surface, where the refracted light is scattered.
4. **Electromagnetic (EM) Spectrum:** a group of Electromagnetic Waves divided up according to their frequency and wavelength.
5. **Equilibrium:** a situation which is not changing as all things affecting it are balanced.
6. **Focal length:** the distance from a lens to the focal point.
7. **Focal point:** the point at which parallel light rays converge after passing through a converging lens or appear to come from after passing through a diverging lens.
8. **Frequency:** number of waves passing a point each second, measured in Hertz, Hz.
9. **Incidence:** moving towards a surface.
10. **Ionizing radiation:** radiation that causes charged particles
11. **Oscillations:** movements back and forth.
12. **Period:** time taken for a wave to pass a point.
13. **Refraction:** a change in direction as a wave moves from one transparent material to another.
14. **Specular refraction:** when light is evenly refracted in the same direction, e.g. off a mirror.
15. **Speed:** distance travelled by an object in a certain time. Measured in metres per second (m/s).
16. **Velocity:** speed in a given direction.
17. **Virtual image:** an image the light rays do not pass through.
18. **Wavelength:** distance (m) from one point on a wave to the same point on the next wave.

WEEK 1

1. **Waves** transfer energy without transferring matter, described in terms of their **amplitude, wavelength, frequency and period.**
2. **Transverse waves:** the direction of energy transfer is perpendicular (at right angles) to the direction the particles oscillate.
3. **Longitudinal waves:** the direction of energy transfer is parallel to (in line with) the direction the particles oscillate.



WEEK 2

Investigating waves core practical
Measuring waves in water

1. Set up a ripple tank with a ruler along one adjacent side to the dipper.
2. Vary the motor speed until the wavelength is approximately half the length of the tank.
3. Record the number of waves in 10 seconds,
4. Use the ruler to estimate the wavelength.
5. **Calculate v = λ x f**
6. Time how long it takes a wave to travel between two points on the ruler.
7. **Calculate v = d- ÷ t**
8. The speed of sound in air can be found by measuring the time it takes for a sound to travel a known distance. The speed is then calculated using the speed equation.

WEEK 3

Measuring waves in a solid

1. Suspend a metal rod horizontally from two clamp stands with rubber bands.
2. Strike the rod to cause vibrations.
3. Measure the frequency of the vibrations with a smartphone app. (f)
4. Measure the rod - this is half the wavelength (multiply by 2 to get the wavelength) (λ)
5. **Calculate v = λ x f.**

WEEK 4

Different substances may absorb, transmit, refract reflect waves in ways that vary in wavelength.

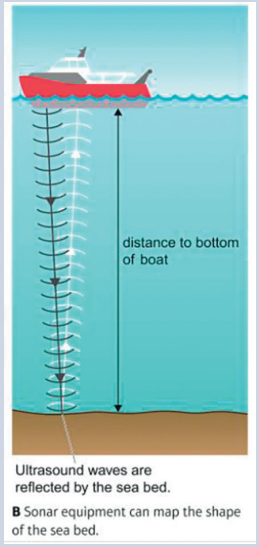
How the ear hears sound

1. Sound waves enter the ear canal.
2. The **eardrum** is a thin membrane. Sound waves make it vibrate.
3. Vibrations are passed onto tiny bones which **amplify** the vibrations.
4. Vibrations are passed on to the liquid inside the **cochlea.**
5. Tiny hairs inside the cochlea detect these vibrations and create electrical signals called **impulses.**
6. Impulses travel along neurones in the **auditory nerve** to reach the brain.

YEAR 10 CYCLE 1 PHYSICS

WEEK 5

1. **Ultrasound** - frequency over 20 000 Hz, used in foetal scanning and sonar to judge the depth of the sea.
2. **Infrared** - less than 20 Hz, used to explore the Earth's core.



B Sonar equipment can map the shape of the sea bed.

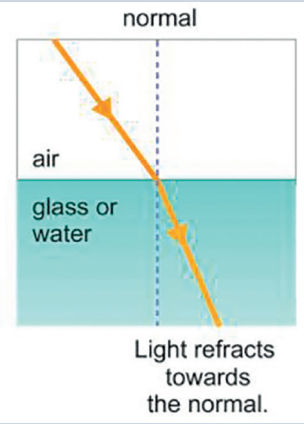
WEEK 6

Colour and Lenses

1. White light is a mixture of colours which can be separated by a prism into the colours of the **visible spectrum.**
2. If an object reflects all the colours it is white.
3. A yellow object reflects yellow light and absorbs all the other colours.
4. **Filters** are transparent materials that absorb some colours and transmit others.
5. A blue filter transmits blue light and absorbs all the other colours.
6. A **lens** is a transparent material shaped to **refract** light.
7. The power of a lens describes how much it refracts the light.
8. A **converging lens** is fatter in the middle than the edges.
9. A **diverging lens** is thinner in the middle than at the edges.

WEEK 7

1. **Refraction** is the change in direction of a wave due to the change of substance it is travelling through.
2. The change in direction is influenced by a change in speed of a wave.
3. The **interface** is the boundary between two mediums (e.g. solid and liquid).
4. **The normal line** is the line at a right angle (90°) to the interface.



WEEK 8

1. **The Electromagnetic (EM) Spectrum consists of: Radio-waves, Microwaves, Infrared (IR), Visible light, Ultraviolet (UV), X-Rays, Gamma rays.**
2. All EM waves travel at the **speed of light, $3x10^8$ m/s** through a vacuum.
3. The longer the wavelength of an EM wave, the lower the frequency.
4. All EM waves have a variety of uses including communication, cooking and medical applications.
5. Some EM waves are harmful and can cause burns damage your eyes. UV, X-rays and Gamma Rays are **ionizing radiations** and can cause cancer.

WEEK 9

1. A **force** (measured in Newtons) is an interaction that can cause a change in the motion of an object. It can be a push, pull or twist.
2. **Scalar quantities** only have a magnitude (size) e.g. mass.
3. **Vector quantities** have magnitude and direction e.g. velocity.
4. Motion of objects can be plotted on **distance/time** (d/t) graphs.
5. The **gradient** shows the speed of the object -a steep gradient shows a high speed.
6. **Speed, v,** can be calculated as:

$$\text{velocity (m/s)} = \frac{\text{distance (m)}}{\text{time (s)}}$$

WEEK 10

1. **Acceleration** of an object can be plotted on a **velocity/time (v/t)** graph.
2. The gradient shows the acceleration/deceleration of an object.
3. The area under the line on a v/t graph is the distance travelled.
4. **Acceleration, a,** can be calculated as:

$$\text{a (m/s}^2\text{)} = \frac{\text{(v - u ({m/s)}}}{\text{t(s)}}$$

$$\text{v}^2 - \text{u}^2 \text{ (m/s)} = 2 \times \text{a(m/s}^2\text{)} \times \text{X (m)}$$

Where v= final velocity and u = initial velocity

5. Falling objects are accelerated downwards by gravity at **9.8 m/s².**
6. The force of gravity, **g**, is **9.8 N/kg**
7. The **terminal velocity** of a falling object is reached when the downward force of gravity equals the resistive force of air resistance.

YEAR 10 CYCLE 1 BUSINESS

Purpose of market research Week 1 and 2

- To reduce risk.
- To understand the market.
- To promote the organisation.
- To aid decision making.
- To gain customers' views and understand their needs.
- To inform product development.

Types of primary research: Observations/Questionnaires/Interviews/Surveys/Focus groups/Consumer trials

Secondary market research sources may include:

Internal data/Books/newspapers/magazines/Competitors' data / Government publications and Statistics/Purchased research material, e.g. Mintel/The Internet/social media

Benefits secondary market research:

- Research will be tailored to the needs of the business and answer its specific requirements.
- Information relevant.
- The results are more likely to be up to date.
- The results are not available for competitors to view.

Benefits primary market research:

- Fast/Collated for you.
- Can be cheaper (than paying someone to collect it).
- Reliable.
- Data you can't obtain yourself.

Drawback of secondary market research:

- No control of quality of Researcher.
- Could be not specific to Researcher's Needs.
- Could have extra irrelevant information.
- Could be incomplete information.
- Could be out of date (Not Timely.)

Drawback of primary market research:

- Timely to collect.
- You have to do it.
- Can be Biased.

Advantages of using a focus group include:

Can obtain opinions/ideas or in depth views. The researcher can probe responses/more detail information is gained. Data will be exclusive or relevant to you. Can gain visual clues/observations and body language.

Point of Sales Advertising Techniques Week 3

Discounts. Competitions. Buy one, get one free (BOGOF). Free gifts/product trials. Loyalty schemes.

Sales promotion techniques include:
Discounts/money off coupons or vouchers/pricing offers. Competitions. Buy one get one free (BOGOF). Point of sale advertising. Free gifts/customer product trials. Loyalty scheme. Celebrity endorsements/YouTube vloggers etc. Advertising channels - e.g. radio, newspapers, digital media.

Benefits Discount of 15%: All customers benefit from the discount off the price. Easy to calculate. Price promotions are often effective and may 'draw' customers to purchase from the business. May help the business' reputation - weddings are expensive so lowering the prices proves that the business is supporting limited customer budgets.

Benefits of Buy One, Get One Free (BOGOF): Customers get something extra. The business may benefit from economies of scale from the extra prints, therefore limiting the cost of this sales promotion. Can help the business to move slow-moving stock, e.g. less popular items. Customers may end up having extra items that they do not need - wasting environmental resources. The extra items may not be 'valued' by the customer which may limit the benefit arising from this sales promotion.

Benefit of business plan Weeks 5

- To secure funding.
- To help manage cash flow.
- To communicate the business idea to other stakeholders.
- To measure progress towards goals, e.g. sales forecasts.
- To help identify potential problems, e.g. financial shortages.
- To support an application for finance.
- To support you to plan and organise activities.
- To help to identify potential problems.
- To help forecast any financial/production data
- To prompt you to consider all key aspects when setting up the business/to set out your aims/goals/objectives or what you want to achieve
- To increase the chances of the business being successful /

Example Sec dary research: Companies such as Mintel produce research material (1). These reports offer information/data on trends within a specific industry such as a wedding industry (1). This research will be produced by professionals and therefore be reliable and comprehensive. Benefits of government data here...

Life cycle extension methods Week 4

- Advertising
- Price changes
- Adding value, e.g. changing the ingredients a of the ice cream recipes
- Expanding to new markets, e.g. targeting new age groups
- New packaging / ways of presenting the ice creams Decisions which the product life cycle may help you to make.
- To change the price of the product
- To launch a promotional/advertising campaign for a product
- To start to develop a new product
- To withdraw a product from the market
- To change the place that a product is available
- To add new features to the product ¢ To know when to
- Introduce extension strategies

Differentiation - What makes your product stand out.

Establishing a strong brand image for goods or services / USP / Good Design mix model - includes function, cost and appearance.

Differentiation Benefits may include:

- Enable a higher price to be charged
- Encourage customers to choose the business over rivals/competitors
- Helps the business to develop brand image/brand loyalty/brand name/helps customers to recognise the brand
- USP to make you appear different from competition

Features of a USP

- Location, e.g. geographical ambience, décor shop.
- Features / service features, e.g. taste, flavours / extra 50% free.
- Design Read about design
- Functions Mix GES
- Appearance mir aa
- Selling price

Extra: exam question you could complete:

1. Explain two benefits for your business of carrying out primary market research rather than secondary market research.
2. Explain why you need to consider the income levels of target customers when setting your prices.

YEAR 10 CYCLE 1 BUSINESS

Business functions Week 6

HR activities:

- Recruitment and selection of employees
- Training and development of employees
- Performance management of employees
- Responsibility of health and safety in the workplace
- Ensuring compliance with employment legislation
- Deciding/advising on pay/benefits

Marketing activities:

- Distribution
- Market research
- Setting prices
- Product management, promotional channels
- Matching products to consumers

Operational activities:

- Production planning
- Producing the product or service
- Quality control
- Stock control
- Logistics

Finance activities:

- Organisation and allocation of financial resources/paying bills or salaries/wages/chasing outstanding payments
- Financial performance reporting/preparing the final accounts/ budgets
- Financial forecasting
- Monitoring of cash flow/break-even analysis

Example: Producing the accounts (1) so that you know how much profit or loss has been made (1). Monitoring cash flow (1) to see how much money is going in and out of the business (1).

Extra: research the impact of each of the Economic issues in the business cycle - Recession, slump, recovery growth, boom, decline/recession.

Customers' needs Week 7

Three ways that customers' needs may vary.

Benefits they require:

- Amount of money (price) they are able/willing to pay/their budget (NOT Income)
- Quantity of goods/services (they require)
- Quality of goods/services (they require)
- Time and location where they wish to purchase the goods

Reason why obtaining customer feedback is important when running a new business.

- To help to identify areas to improve
- To identify what customers want
- To find out about the service from the customer's perspective
- To help identify trends
- To help build reputation/loyalty/brand

Example: Obtaining customer feedback will help you to identify areas of the business to improve (1), so that you can attract more customers (1). Future customers interested in your business will look at feedback to see if it is good/bad (1) before deciding whether to use your service (1).

Customer feedback techniques which you could use.

- Physical customer comment cards. Ratings sites/online communities/Internet
- Verbal feedback made to the photographer or staff members

Surveys/questionnaires/interviews/focus groups. Email (contact/ feedback forms

Extra: Remind yourself about customer segmentation and Explain the need for it.

The impact of external factors on product development Week 8

- Technological developments (e.g. developments in
- technology that affect production capabilities and consumer preferences)
- Economic issues (i.e. recession, boom and their effects)
- Legal issues (i.e. copyright and patent, product safety
- standards) .

Legal factors:

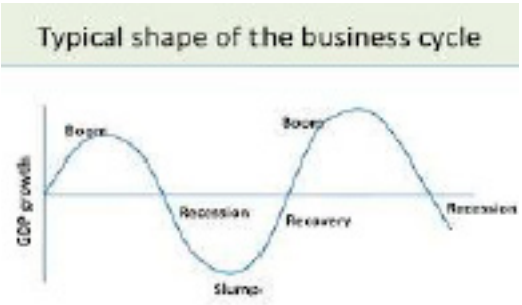
- Copyright
- Patents
- Product safety
- Health and safety
- Employment legislation
- Permission

Example: The copying of an idea and using it without paying or asking permission. Product safety standards.

Example: goods must meet all product safety standards, such as it must not contain a harmful quantity of a specific ingredient or have buttons that a child could choke on.

Issues may include:

Economic issues: business cycle - Recession, slump, recovery growth, boom, decline/recession .



Extra: Research the advertising methods

Extra: Research Mintel and what it is.

YEAR 10 CYCLE 1 - PHOTOGRAPHY: Natural Forms

WEEK 1: The Formal Elements

These are some of the **design elements** you should be considering when composing your photographs:

Line - Leading lines can guide the viewer to a specific focal point.

Shape & form - Shape is the 2D appearance of an object, whereas form is 3D. These can be better defined through careful use of lighting, such as backlighting, silhouettes and shadows.

Texture - Can bring life to a photograph by drawing in the viewer.

Space - Can create a sense of scale and bring depth to your photos. Negative space is used to give breathing room to your subject.

Colour - Helps to form a cohesive palette in photos, create a mood or a bold statement through a 'colour pop'.

WEEK 2: Formal Element Photos

Use the **visual guide** below to take a minimum of 10 photos which use the **Formal Elements,** Aim to include all five of the formal elements mentioned above.

WEEK 3: Photography Genres

Natural Forms or **Nature Photography** is a wide range of photography taken outdoors and devoted to displaying natural elements such as landscapes, wildlife, plants, and close-ups of natural scenes and textures. Many **genres** fall under nature photography. A photography genre is a type of photography, such as landscape, abstract, still life, macro, wildlife, plant, seascape.

WEEK 4: Genres Photoshoot

Using the information on the visual guide explore one genre of photography in more detail. Aim to take a minimum of 10 photos. Remember to consider your knowledge of the formal elements.

WEEK 5: Complete Work

Complete all work to date in your ePortfolio. Upload your ePortfolio to your

OneDrive account in order to access it from home. Review the GCSE process on the left. Have you completed all these tasks for Artist #1?

WEEK 6: Plan Half-Term Photoshoot

Using the How to Plan a Photoshoot guide on Teams, plan your next photoshoot for the photos you will take over half-term, Include sketches of your ideas. Make sure your photos are realistic and achievable. Upload your photos to OneDrive ready to create a contact sheet.

WEEK 7: Water Photoshoot

Use the **visual guide** to experiment with Natural Forms and water. Pick one idea to explore in more detail or explore a variety of shots. Freeze leaves, flowers or twigs in trays of ice, Photograph these melting. Use a fast shutter speed to capture drops of water or fruit splashing into glasses. Use a slow shutter speed and a tripod to capture silky smooth water effects. Use a macro lens to capture reflections in raindrops or oil droplets on water. Aim to take a minimum of 10 images. Upload to OneDrive.

Fast shutter speed: Lets in less light and gives the effect of freezing an object in motion. Such as 1/1000 of a second.

Slow shutter speed: Lets in more light and can capture movement and introduce blur. Examples are ⅝ second or longer.

WEEK 8: Complete Work

Following the steps in the GCSE process on the left, complete all work in your ePortfolio for Artist #2. By following these steps you will be covering all your assessment objectives.

WEEK 9: Tree Photoshoot

Using the **visual guide** or your own ideas, think of unusual ways to capture and/or edit images of trees. Challenge yourself to learn a new skill such as light painting.

Aim to take 10 photos. Upload these to OneDrive.

WEEK 10: Plan Your Final Piece

Your task is to create a visual (with sketches} and written plan of your intentions for your final idea. This is not a stand alone idea, but an amalgamation and refinement of existing pieces based on your developments. Consider which areas of your work have been most successful and how these link back to your theme and artist research. You may take extra photos to supplement or improve your work.

Develop three concepts for your final piece. Include the following:

- Plans/sketches of three final pieces.
- Clear links to your artists/theme,
- Detailed annotations of how the ideas link together and respond to the theme of Natural Forms.
- Materials and camera/editing techniques you will use to develop your final piece.
- Scale and dimension of project. It can be small, large, 2D or 3D, interactive and be made up of one photo or several photos.
- Aim to include manual manipulation details in one of your concepts.

THE GCSE PROCESS

- **Mind map** of ideas.
- **Mood board** of images**.**
- **Influence -** gather images of photographers/artist who inspire you.
- **Analyse** their work.
- Research **camera techniques.**

↓

- Plan your **photoshoot** based on your inspiration.
- **Recreate** elements of your chosen artist's work.
- Create and annotate your **contact sheet.**

↓

- Manual and digital **experimentation** with your images.
- **Edit** in a similar style to your inspirational artist.
- **Explore** different techniques, materials and processes.
- **Record** and **review** all your experimenting.

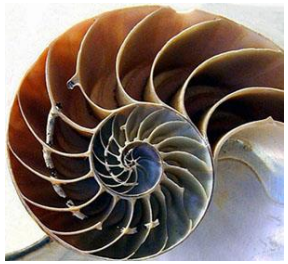
↓

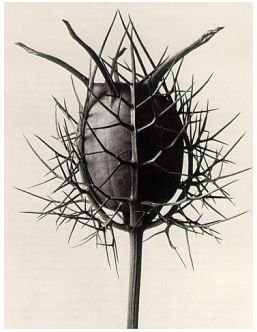
- **Present** a personal **response** to your theme and artist inspiration.

Year 10 Natural Forms
Visual Guide

Formal Elements


texture


shape


form


negative space


colour

Photography Genres


landscape


macro


still life


abstract


cyanotype

Water


slow shutter speed


water & oil

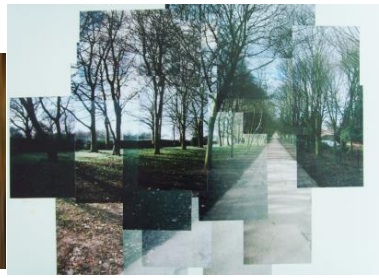

frozen flowers


water droplets


splash photography

Trees


vertical panning


photomontage


kaleidoscopes


painting with light

YEAR 10 CYCLE 1 - COMPUTER SCIENCE

WEEK 1: Producing Robust Programs

Authentication - a process for checking identity of the user.

Maintenance - following procedures to keep code easy to read and error free.

Data validation - as data is inputted, it is checked to make sure it is the correct data type, length, format etc.

Error trapping - planning for invalid inputs or unexpected results.

Input sanitisation - Removing unwanted characters from entered data to protect against SQL injections.

WEEK 2: Testing

Types of test and data:

Iterative - testing every module before moving on.

Final/terminal - functional testing on a high level.

Normal - Test data which is in range and should be handled.

Boundary - Test data on the border of validity.

Invalid - Test data which is out of range and should be trapped.

Erroneous - Test data which should not be accepted by a program.

WEEK 3: Computational Logic

Operand - a number (or string or Boolean) which is to be operated on.

Types of operator:

- **Assignment** - =, =>
- **Boolean** - AND, OR, NOT
- **Arithmetic** - **, /,%, //,*, +,°
- **Comparison** - >, <, >=, <=, ==, !=

Truth tables - a table for a logic gate system of inputs and outputs.

WEEK 4: Languages

High-level languages - A language which is easy to read and requires a lot of translating before the computer understands it.

Low-level languages - a language that is close to the format read by the computer.

Compiler - a program which turns source code into object code and saves it as a file.

Interpreter - a program which translates source code as it is read, stopping if it reaches an error.

WEEK 5: The Intergrated Development Enviroment (IDE)

IDE - Software for writing code, which will usually incorporate an editor, debugging tools, an interpreter and compiler.

Editors - a program which allows the user to write code.

Run-time environment - everything you need to run a program.

Translation - conversion of high-level language to machine code.

Translators - a program which converts high-level language to machine code.

WEEK 6: Pseudocode Variables

Comment - //

Variables:

Assignment - =
Constants: - const
Global variables - global

Input/Output:

Input - input(...)
Output - print(...)

Casting:

Converting to another data type
str()
intQ
float()
bool()

WEEK 7: Pseudocade Interaction

FOR loop:

```
for i=0 to 9
    print("loop")

next I
```

This will print the word "loop" 10 times

WHILE loop:

```
while answer != "correct"
    answer = input("new
    answer")
endwhile
```

This will loop until the user inputs the string "correct". Check condition is carried out before entering the loop.

WEEK 8: Pseudocade Selection

IF - THEN - ELSE:

```
if... then
elseif ... then
else
endif
```

```
if answer == "yes" then
    print("correct")
elseif answer == "no" then
    print("wrong")
else
    print("error*)
endif
```

Random numbers:
random(...,...)
é.g. num = random(1,6)

WEEK 9: Pseudocade File Handling

Open - open(...)
Close - .close()
Read line - .readLine()
Write line - .writeLine(...)
End of file - .endOffFile()
New file - newFile()

```
myFile = open("doc.txt')
myFile.readLine()
myFile.writeLine("...")
myFile.close()
```

Note that the file needs to be stored as a variable

Arrays
array names[5]
creates 1D array with 5 elements (index 0 to 4)

WEEK 10: Pseudocade Sub Programs

Procedure

procedure *name*...)

endprocedure

Calling a procedure
procedure(parameters)

Function
function name((...)

return
endfunction

Calling a function
function(parameters)