YEAR 11 CYCLE 1 ART

1940s -1950s Abstract Expressionism
This is art that is raw, non representational and driven by spontaneity. It is divided into two groups; Action painting and Colour field painting.

Artists:
Jackson Pollack, William De Kooning, Mark Rothko.

1950s -1960s Pop Art
Pop Art draws its inspiration from commercial mass culture, in particular advertising, pop music, comic books and Hollywood movies.

Artists:
Jasper Johns, Andy Warhol, David Hockney, Roy Lichtenstein.

1950s Neo-Dada
This movement used modern materials, popular imagery and absurdist contrasts.

Artists:
Joseph Beuys, Robert Rauschenberg, Sir Edwardo, Luigi Paolozzi.

1950s -1960s Op and Kinetic art
This art style is about movement. Op art uses colour, line and shape while Kinetic art included multi media installations.

Artists:
Bridget Riley, Jean Tinguely, Victor Vasarely.

1960s-1970s Minimal art
Minimalism suggested that art should have its own reality, not an imitation of something else. Reduction to smallest number of colours, values , shapes, lines and textures.

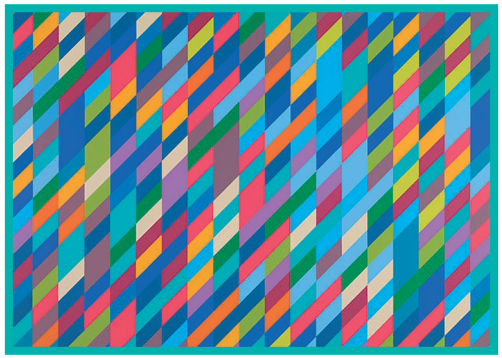
Artists:
Donald Judd, Robert Morris, Carl Andre.

1960s -1970s Conceptual art
The work is based on idea or concept. Opposes traditional aesthetic and material concerns.

Artists:
Joseph Beuys, Sol Lewitt, Joseph Kosuth.

1960s -1980s Arte Povera
A group of Italian artists. The art used unconventional materials and style.

Artists:
Mario Merz, Michelangelo Pistoletto, Jannis Kounellis.



Bridget Riley circa 1993 - oil on canvas

Key Vocabulary:

Spontaneity
Non-representational
Constructed
Culture
Commercial
Traditional
Aesthetic
Installation
Concept
Incorporated

YEAR 11 CYCLE 1 - CHILD DEVELOPMENT

WEEK 1, 2 and 10: Key Vocabulary

Physical development: The development of gross motor skills and fine motor skills.

Intellectual development: The development of the way the child's brain processes information received from the surroundings and other people.

Social development: The development of the ways in which children experience and learn to handle their own emotions and relationships with others.

Reflexes: The physical movements or reactions new-born babies make with their bodies without consciously meaning to do so.

Gross motor skills: The large movements children make with their whole bodies.

Fine motor skills: The small, delicate manipulative movements children make with their fingers.

Hand-eye co-ordination: Using the vision system to control, guide and direct the hands to carry out a manipulative task.

Literacy: The ability to read and write (young children will be developing this ability).

Numeracy: The ability to recognise, understand and work with numbers (young children will be developing this ability).

Self-esteem: This is when a child has a sense of self-worth or personal value.

Self-confidence: This is when a child has a feeling of belief and trust in their own ability.

Parallel play: When children play alongside one another but do not play together.

Onlooker play: When a child happily watches other children at play.

Sense: Sight, smell, hearing, taste and touch.

Attention span: The amount of time for which a child can concentrate on a particular activity.

WEEK 3: Physical Development

Sequence of development: Children develop roughly in the same sequence, even though the age/timing in which they develop may vary, they will learn to sit up before they crawl.

WEEK 3, 4 and 9: Intellectual Development

Language: To communicate children need to listen and understand the communications from other people. They also need to know what they want to communicate themselves, therefore communication relies on thinking skills.

Reading and writing: The skills of reading and writing are known as literacy.

Communication: How children master speech and other methods of communicating for example:

Body language - Physical behaviour that expresses feelings.

Listening - The ability to listen is connected to a child's attention span.

Verbal - Children learn vocally at a fast rate. Other sounds such as crying, laughing, shrieking and groaning also communicate how a child feels.

Gesture - Children use gestures when they do not have the words to communicate. They may point at their toy or food.

Sign language - Children with learning difficulties may use simplified sign language, called Makaton, to communicate.

Reading and writing - Important communication skills.

Number skills: Number skills are linked to problem solving and reasoning skills.

WEEK 4 and 9: Social Development

Communicating: Communication is key to the relationships you have with people and daily interactions with all people.

Acceptable behaviour: Children need to learn acceptable behaviour. As they grow older they become able to control their emotions and learn how to interact with others. They also learn manners and begin to behave in a socially accepted way.

Sharing: Sharing can be difficult for young children. They must learn to be patient and that they cannot always have a toy they want straight away, if it is being used by another child.

Independence/self-esteem: Children become able to do things independently as they grow, when this happens they will feel proud of themselves and their self-esteem will rise which will give them self-confidence.

YEAR 11 CYCLE 1 - CHILD DEVELOPMENT

WEEK 5

Types of Play	Activities
Manipulative play: Physical play involving delicate, operational movements made with the fingers.	Puzzles, drawing, painting, shape sorters, threading beads, craft activities, building blocks, gardening, cooking, playdough.
Co-operative play: When a child plays alongside one or more other children.	Board games, circular games, playground games, imaginary role play - dress up, teddies/tea sets; imaginary play with small world toys - cars/road mat, farmyard set.
Solitary play: When a child plays alone.	Imaginary play (role play, small world play), puzzles, books, video/computer
Physical play: Happens during activities where children use their manipulative or large motor skills, develop balance or co-ordination, develop the senses or exercise the body and limbs.	Ball games, different ways of travelling (running, jumping, skipping), playground equipment, ride-on toys and bikes, tunnels, stepping stones, mini trampolines, dancing.
Creative play: This is when children express themselves by creatively responding to something that sparks their imagination.	Music, dance, drawing, painting, model making, collage, sand play, water play, stories.

WEEK 5: Benefits of Play

Children benefit hugely from play. It allows them to:

- Develop and learn
- Have fun
- Relax
- Be active

WEEK 6: Physical Benefits of Play

Physical benefits of play include the development of:

- Fine manipulative skills.
- Large motor skills.
- Balance and co-ordination.
- Strength and promotes fitness.
- Hand-eye coordination.

WEEK 6: Creativity Benefits of Play

Imagination: play promotes creativity. Playing freely with access to a wide range of resources, will allow creativity to naturally occur.

Children use their imagination effectively when:

- They think and behave imaginatively.
- Their imaginative activity is purposeful.
- They express creativity in a unique way.

WEEK 7 and 8: Intellectual Benefits of Play

The benefits of intellectual play falls into three categories:

Mental stimulation: Children have new ideas and thoughts and explore them through play, make discoveries, learn about the world, learn to understand concepts like counting and develop an awareness of mental processes such as reading. Children also develop their attention span and memory.
Problem solving: Children experiment and test things out, identifying which objects float or sink in water, makes learning a real and vivid experience.
Communication: Play develops communication and language skills, especially when children spend time in a language-rich environment. For example, a home where adults/peers talk frequently with a child.

WEEK 7 and 8: Social Skills Benefits of Play

Independence: Children go off and play with their friends, they are independent of their parent/carer. Play also helps children to master skills that foster independence for example dressing up/dressing dolls.
Confidence: Trying new activities and being independent helps to build confidence. Many games foster confidence such as talking in front of a group or joining in with singing/dancing.
Sharing: Children need to learn how to share, this requires a child to put what is fair or another person's feelings, above what they want.
Self-esteem: Positive play experiences where a child's contributions, ideas and feelings are respected have a positive effect on their self-esteem.
Communication skills: Play promotes verbal and non-verbal communication, turn taking, how to follow rules and how to get along with others.

YEAR 11 CYCLE 1A - GCSE CITIZENSHIP: Section 2.2 - National, Local, Regional and Devolved Government

WEEK 1: Key Concepts and Terms

Assembly: A form of national government.

Centralisation: When political and legislative powers are held by one, central government.

Coalition government: A government formed jointly by more than one political party. Devolved powers: Those areas of government delegated to devolved institutions such as the Scottish Parliament or the Welsh Assembly; (e.g. education and health).

Devolution: The decentralisation of governmental power.

Legislation: A law or a set of laws that have been passed by Parliament. The word is also used to describe the act of making a new law.

Regional government: Where a particular region is given limited powers by the government to make political decisions specifically affecting that area.

Reserved powers: Decisions that are still taken by the UK Parliament at Westminster even though they affect all areas of the country; (e.g. defence and immigration).

WEEK 2: The Key Roles in UK Government

1. The Prime Minister

The Government is headed by the Prime Minister. Usually, this is the leader of the political party who gained the most seats in a general election.

2. The Cabinet

The Prime Minister appoints his or her Cabinet. These are the most senior MPs in the Government, heading up one of 20-25 key government **departments.** Many will have the word **'Secretary'** in their job title, e.g. "Foreign Secretary" or "Secretary of State for Education". One exception is the **Chancellor of the Exchequer,** who leads Her Majesty's Treasury.

3. Ministers

Within each of these key State departments, the Secretaries are supported by a team of MPs called **Ministers.** A Minister may also be responsible for a particular policy area; e.g. a MP might be the "Minister for Agriculture".

WEEK 3: Local Government

Local authorities, also known as **councils,** make decisions about local services. Most are run by elected representatives, called **councillors,** elected by the residents of the area, **('wards'),** they represent; using the **first-past-the-post system.** Some local authorities, e.g. the Greater London Authority, are run by directly elected **mayors,** supported by councillors.

Structure of a three-tier system local authority

1st tier - County councils, (e.g. Devon County Council): Responsible for key areas such as education and health within the local area. Also, responsible for strategic planning.

2nd tier - Borough or district councils, (e.g. South Hams District Council): Responsible for local matters such as parks and refuse collection.

3rd tier - Town or parish councils, (e.g. Exmouth Town Council): Take local views to higher tier authorities and provide services such as floral displays and community events

In some areas of England, e.g. (Plymouth), there is just one tier of local government, called a unitary authority, which provides all the services of a two, or three, tier system.

WEEK 4: Devolved Government

The UK Government has devolved some powers to the Scottish Parliament, and the Welsh, and Northern Ireland, Assemblies, whilst reserving control of other policies areas such as Defence, Foreign Policy and Immigration.

The governments of Scotland, Wales and Northern Ireland have similar devolved powers, but there are some key differences:

The Scottish Parliament has greater power over the economy, taxation and law-making than either the Welsh, or Northern Ireland, Assemblies.

The Welsh and Northern Ireland Assemblies have to ask the UK Government for permission to change policy in a greater number of key areas than the Scottish Government does.

Although the Welsh Assembly has some law-making powers, it shares England's legal system.

WEEK 5: The Devolution Debate

Devolution is seen to have the following advantages:

1. Local decision-makers better understand the culture and needs of their community
2. Local decision-makers live in their area and so can check that public money is well-spent and that public services are delivered properly.
3. Residents are able to easily contact local decision makers.
4. There is less voter apathy as residents feel more involved.

However, some government responsibilities cannot be devolved to a local level. Decisions about national defence, border control, taxation and overall economic policy must be made by the UK Government.

Such centralisation is necessary so that decision makers can consider the interests of the country, as a whole, and to achieve a co-ordinated approach at a national level.

YEAR 11 CYCLE 1B - GCSE CITIZENSHIP: Section 2.3 - British Constitution

WEEK 6: The Constitution and the Government

The UK does not have a formal written constitution, it has an **"uncodified constitution"** which means laws comes from a variety of sources. The only British 'constitution' that exists is a set of rules and regulations created by jurisprudence (legal theory), English and Scottish laws, and by various treaties and international agreements to which the UK has signed up. This uncodified constitution has largely developed out of historic English (Common) law as many of its principles and laws go back to charters and bills that were drawn up by the English Parliament long before the creation of the UK.

'The Government' in the UK refers to the Prime Minister, the Cabinet and their junior ministers. These people make up the team responsible for leading and running the UK. Usually, the political party that wins the most seats at a general election forms the Government. The Government is in charge of managing the country and deciding how taxes are spent on public services.

The Government, along with senior civil servants is also known as the **Executive** and is the part that **implements** new laws.

WEEK 7: Parliament

Parliament is made up of people who have been elected or appointed to represent our interests and make sure they are taken into account by the Government. The Government cannot make new laws or raise new taxes without Parliament's agreement.

Parliament's role is to look closely at the work of the Government and monitor the way it is running things.

Parliament does this by examining the work of ministers and their officials, by checking, amending and passing any laws, debating the important issues of the day, and by speaking up for people who may be affected unfairly.

Parliament consists of the Crown, the House of Lords and the House of Commons.

Parliament is the supreme legal authority in the UK which can create or end any law, this is known as **Parliamentary Sovereignty** and is the most important part of the UK constitution.

Parliament is also known as the **Legislature** and is the part that debates and **passes** new laws.

These laws are implemented by the Executive and **applied** by the **Judiciary** (judges).

WEEK 8: The House of Commons

The House of Commons is made up of 650 **Members of Parliament (MPs),** one for each of the 650 **constituencies** in the country. MPs are elected by citizens in a **general election,** when everyone in the UK over the age of 18, who is registered and eligible to vote, can vote for the **candidate** they want to represent their interests and concerns in **Parliament.** An MP represents all the people in their constituency, even people that didn't vote for them. MPs usually represent a **political party,** although some MPs are not part of a political party and are known as **independents.** If an MP dies or resigns, a local **by-election** takes place to choose a new MP for that area.

The House of Commons is the main law-making authority in the UK. It alone has the right to impose taxes. The House of Lords has only infrequently held up major legislation passed by the Commons, and the British sovereign almost automatically provides the Royal Assent to any bill passed by the two Houses.

WEEK 9: The House of Lords

The House of Lords is independent from, and complements the work of, the House of Commons. Members of the House of Lords are **appointed** (not elected) for their experience and expertise in a number of different professions outside of Parliament. They use this knowledge to challenge the work of the Government and **scrutinise** new laws closely.

There are around 800members of the House of Lords. Almost all are **life peers.** There are 26 archbishops and bishops, and 92 **hereditary peers.**

The majority of Members are appointed for their lifetime by the Monarch, on the advice of the Prime Minister. Around a quarter of Members are independent of political parties, they are called **'crossbenchers'.**

Because of the crossbenchers, no political party has a majority in the House of Lords, so the Government also does not have a majority. This means that the House of Lords can present a second opinion, and they often ask the Government to think again about proposed new laws or other decisions.

WEEK 10: Bicameral (two-chamber) Parliament

The UK Parliament consists of two main parts, the **House of Commons** which is the lower chamber consisting of elected representatives and the **House of Lords** which is the upper chamber consisting of unelected **peers** and bishops. Thus, the UK has a **bicameral** (two chamber) **parliament.**

Advantages of a bicameral Parliament

- It improves the scrutiny of a proposed legislation.
- As the Lords is appointed, not elected, it is possible to recruit from different areas of expertise. This can help create better laws.
- A bicameral parliament reflects the history, values and traditions of the UK.

Disadvantages of a bicameral Parliament

- The peers lack democratic legitimacy because, unlike MPs they have not been elected by the British public.
- The Lords can hold up the passing of new laws for a year which slows government down.
- It can cost a lot to run the second chamber as the peers can claim a £313 a day attendance allowance.

YEAR 11 CYCLE 1 - DRAMA: Exploring the Performing Arts

WEEK 1 and 2

Sir Matthew Bourne

Sir Matthew Bourne OBE is a successful choreographer and director. He creates and directs dance for musicals, opera, theatre, film as well as his own highly successful, award-winning companies.

He was knighted in the Queen's New Year Honours 2016 for services to dance.

Matthew Bourne's Cinderella

A chance meeting results in a magical night for 'Cinderella' and her dashing young RAF pilot, together for just long enough to fall in love before being parted by the horrors of the Blitz.

Themes:

Family is one of the key themes in the original version of Cinderella, as well as in Matthew Bourne's version.

The show is also filled with antagonistic themes such as:

- Life and death
- Good and evil
- Hope and fear
- Destiny and freewill

WEEK 3 and 4

The Paper Birds - Broke
In their own words:

The Paper Birds are an award-winning devising theatre company with a political agenda. We pride ourselves on taking socio-political subjects and making them accessible.

We are story collectors. We spend time in communities, listening to personal experiences. The words of the people we meet form the backbone of our desire to listen, to understand and then 'give voice' means not only making space for the under-represented and the misunderstood, but also that our shows explore voices from all walks of life.

Broke

Is about displaced families, gambling addictions and beans on toast. Based on interviews taken across the UK in 2014, The Paper Birds explore, with real life stories from the front line of poverty and debt, what it means to be broke.

WEEK 5 and 6

One Man, Two Guvnors based on The Servant to Two Masters by Goldoni

Style: Commedia dell'Arte

It was a popular form of improvisational theatre which began in Italy in the 15th century (1400s) and is still performed today.

Characters were identified by costume, masks, The classic, traditional plot is that the innamorati (lovers) are in love and wish to be married, but one vecchio (elder) or several elders, vecchi, are stopping this from happening, and so they must ask one or more zanni for help. Typically it ends happily.

Concetti - A speech or comment by a character made directly to the audience.

Lazzi - A well rehearsed comic routine that has no relevance to forwarding the plot and is done to get laughs.

Slapstick - Originally use of an actual stick, now means physical comedy - Usually involving people falling over or getting "hurt".

WEEK 7 and 8

Key words to find out:

Styles of Theatre:

Absurdism
Classical
Comedy
Commedia dell 'Arte
Epic
Melodrama
Forum Theatre
Naturalism
Symbolism
Theatre of Cruelty
Verbatim

Practitioners:

Stanislavski
Brecht
Artaud
Frantic Assembly
Berkoff
Pinter
Boal

WEEK 9 and 10

Job Roles - Key Words

Actor
Artistic Director
Backstage
Choreographer
Conductor
Costume Designer
Director
Dramaturg
Front of House
House Manager
Lighting Designer
Make-Up Designer
Marketing Director
Playwright
Producer
Property Master
Scenic Artist
Set Designer
Sound Designer
Stage Manager
Technical Director
Wardrobe Supervisor
Writer

YEAR 11 CYCLE 1 - GCSE ECONOMICS:
Unit 3 - 3.6 Monetary Policy and 3.7 Supply-Side Policy

WEEK 1: Monetary Policy

- Monetary policy aims to control the **total supply of money** in an economy.
- Its major objective is a **low and stable rate of inflation.**
- **The Monetary Policy Committee (MPC) of the Bank of England** operates monetary policy.
- The UK target for inflation is **2% per annum (+/- 1%).**
- The Bank of England uses its **bank rate** to influence all other interest rates.
- The aim is to **limit total demand** for goods and services.
- The main tool within this policy is **interest rates.**
- Recently, **quantitative easing** has been used to put more money into the economy to encourage consumption and investment.

If the economic objective of the monetary policy is **economic growth or low unemployment,** reducing the interest rates will result in increased spending, output and employment.

If the objective is **price stability, or a healthier balance of payments** increasing interest rates will result in less spending, including spending on imports and more price stability.

WEEK 2: Monetary Policy

How monetary policy can affect growth

Assuming interest rates fall:

- Spending and borrowing by consumers increases - borrowing is cheaper, so people buy more so demand and output rise.
- Borrowing by firms for investment purposes increases - cheaper borrowing, more investment, greater output.
- UK exchange rate falls - supply of pound sterling rises making exports cheaper.

How monetary policy can affect employment

Assuming interest rates fall:

- Spending and borrowing by consumers increases.
- Borrowing by firms for investment purposes increases,
- UK exchange rate falls.

All lead to greater demand and therefore more employment.

How monetary policy can affect price stability

Assuming interest rates rise:

- Spending and borrowing by consumers decreases.
- Borrowing by firms for investment purposes decreases.
- UK exchange rate rises.

People and firms borrow and spend less so demand falls and prices remain stable.

WEEK 3: Monetary Policy

For all the following, assume a fall in interest rates:

The effects of monetary policy on consumer spending

- The opportunity cost of spending falls.
- A large fall in interest rates results in more spending and less saving.
- Retirees may spend less.
- People with mortgages can spend more.

The effects of monetary policy on borrowing

- Consumers borrow more to buy big items like cars.
- If consumer confidence is low, the cut in rates will not result in more borrowing.
- Mortgages become cheaper, so more people buy new/bigger houses.

The effects of monetary policy on saving

- Consumption should rise and savings fall.
- If price levels are falling, a fall in interest rates may not affect savings.
- If the rate of interest remains above inflation rate, people may save more.

Monetary policy is one factor affecting investment. Others are expected returns from the investment; the state of the economy; competitors and taxation on profits.

WEEK 4: Supply-side Policy

- A supply-side policy is any policy that leads to an **increase in the total supply of goods and services** in an economy. This is achieved by improving the quantity or **quality of resources.**
- **Productive potential** is the ability of an economy to supply more goods and services. This often means increasing **productivity.**

There are two important general points about supply-side policies:

1. By increasing output, they help to reduce inflation without causing unemployment.
2. They only work in the long-term, so are not a 'quick-fix' unlike fiscal and monetary policies.

Costs of supply-side policies

- Time lags.
- Monetary costs.
- Opportunity costs.
- Opposition to policies.
- Equity unintended effects.

Benefits of supply-side policies

- Target specific markets.
- Reduced inflation.
- Increased employment.
- Increased economic growth.
- Improved balance of payments.

WEEK 5: Supply-side Policy

Types of supply-side policies and how they can help achieve economic objectives:

3. **Education and training:** Improve skills and quality of labour, increasing productivity and economic growth and reduces unemployment.
4. **Competition policy:** Controlling monopoly power increases competition which can lower prices (reducing inflation) and reduce unemployment.
5. **Reducing direct taxes on income and reducing benefits:** Lower taxes and less benefits increase the incentive to work so unemployment falls.
6. **Cutting direct taxes paid by firms:** Cutting corporation tax encourages investment by existing firms and encourages new firms to move to the UK, both result in greater economic growth and less unemployment.
7. **Privatisation:** Should increase competition, efficiency and output leading to lower prices (reducing inflation). Exports become more competitive helping the balance of payments.
8. **Improved transport facilities:** Increase mobility of factors of production leading to economic growth and improved balance of payments.

YEAR 11 CYCLE 1 - GCSE ECONOMICS:
Unit 3 - 3.8 Limitations of Markets

WEEK 6: Externalities and Correcting These

Externalities

- An externality is a cost or benefit from production or consumption for a **third party.**
- A third party is not involved in the production or consumption of the good or service.
- The impact on the third party can be positive or negative.
- Consumers and producers do not consider externalities when deciding whether or not to trade.
- Therefore, the market equilibrium may be inaccurate.
- This leads to an inefficient allocation of resources and so fails to solve the **economic problem.**

Positive externalities

A positive externality (external benefit) is a benefit to a third party. For example, a factory decides to increase production so employs another worker. He or she spends money in a local shop. The shopkeeper was not involved in the employment of the worker, but has benefited from it.

Negative externalities

A negative externality (external cost) is a cost to a third party. Pollution is an example of a negative externality.

WEEK 7: Government Policies to Correct Externalities

Externality: The impact of an economic transaction on a third party.

Positive externality: The benefit of an economic transaction for a third party.

Negative externality: The cost of an economic transaction for a third party.

Taxation: Collecting money from people and firms by the Government.

Direct tax: A tax on income or profits, e.g. corporation tax.

Indirect tax: A tax on buying goods and services, e.g. VAT.

Subsidy: A sum of money given by the Government to firms to encourage production and consumption.

State provision: Government intervention in a market to supply goods or services directly to consumers.

Legislation: A law created by the Government (Parliament) to control the way individuals or firms behave.

Regulation: A rule from the Government that firms and /or consumers have to follow.

Information provision: Government intervention in a market to give knowledge that might change behaviour.

WEEK 8: Use and impact of Government Policies

Taxation: It is difficult to set the correct size of tax to cover externalities because it is hard to put a price on them. Also, if the PED of the product being taxed is inelastic, the tax will have little impact on the quantity demanded.

Subsidies: It is difficult to set the correct size for the subsidy so that it increases consumption to the level that is best for society. A subsidy will have less impact on the consumption of a product that is price inelastic.

State provision: Impact depends on whether the Government supplies enough of the good or service to meet demand - setting the correct level of supply is not easy.

Legislation and regulation: A regulation that makes production or consumption of a good illegal can have a significant impact in reducing consumption and negative externalities.

Information provision: This helps consumers and producers make informed economic choices. However, its impact is limited because the information may not reach consumers or they may choose to ignore it.

WEEK 9: Costs of Government Policies

Taxation:

- A regressive tax will affect poor consumers more.
- Taxes are expensive to administer.
- Heavily taxed products may be traded illegally.

Subsidies:

- Opportunity cost to governments - limited resources so may have to give up benefit of another service.
- Opportunity cost for taxpayers / firms - Subsidies may result in tax rises, so less income / profits to spend / Invest.

State provision:

- Opportunity costs for governments and taxpayers - as above.
- Shortages - over time the demand curve for the product may shift to the right making it less accessible for some consumers.

Legislation and regulation:

- Opportunity cost of policing black markets.
- Opportunity cost of monitoring regulations.

Information provision:

- Opportunity cost - providing information incurs costs. This money could have been spent elsewhere.

WEEK 10: Benefits of Government Policies

Taxation:

- Reduction in negative externalities through reducing demand.
- Taxes raise revenue for the Government which can be used for providing subsidies and/or dealing with problems caused by negative externalities.

Subsidies:

- Encourages production and consumption of goods with positive externalities.
- May lead to more jobs in the subsidised market.

State provision:

- Improved standard of living as low income consumers will be able to access essential goods and services.
- Increased benefits to society, e.g. education leading to a better-skilled workforce which increases productivity and output.

Legislation and regulation:

- Regulation can correct both positive and negative externalities resulting in a benefit to society.

Information provision:

- Even though cost is involved, information provision will be cheaper than other options such as subsidies.

YEAR 11 CYCLE 1 - FOOD PREPARATION AND NUTRITION: NEA1 Preparation

WEEK 1: Planning NEA1	WEEK 2: Resources NEA1	WEEK 3: Experiment Research NEA1	WEEK 4: Hypothesis NEA1	WEEK 5: Primary Research
Explain how your research is relevant to the task - collect a number of food science links. Are you going to research the way the ingredients work **(How** and **why** ingredients work) or how the recipe works? (What is happening when this is made and why). How am I going to research? Internet sites / Books / articles / TV?	Use a range of relevant sources to research the task. Decide on your hypothesis, write it down clearly. Create a plan of action, make sure you only change one thing at a time, e.g. one ingredient or one part of the method (to keep the test fair). Make sure you have a control (you don't change this) to compare. Predict what you think will happen.	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.	A hypothesis is a sentence which describes what you are trying to prove in your investigation. It should be clear and to the point. It forms the basis of your whole experiment. When you do your practical work you need to make sure you only change one thing at a time to make sure your experiment is fair. E.g. changing one specific ingredient (e.g. flour type) or switching method (e.g. creaming vs whisking).	Primary research is when you collect information yourself, e.g. surveys, questionnaires, taste testing, recipe trailing. Decide how many people you want to ask, what age range , specific groups to target. Write a list of questions and check they make sense, try to keep them closed (yes/no answers or choice of answers). How will you present your finding? Chart, table or graph?

WEEK 6: Fair Testing	WEEK 7: Testing	WEEK 8: Sensory Testing NEA1	WEEK 9: Top Tips	WEEK 10: Section Titles
When you do your practical work make sure that you only change one thing at a time, It could be a specific ingredient such as changing plain flour to self raising flour, or it could be a method such as switching from the creaming method to the all-in-one method of cake making. By only changing one part of the process each time, you are making sure it is a fair test.	Make sure you have a control recipe and method- this is the recipe and method you will compare your results to. If you are in doubt about your results- repeat the experiment, there is nothing wrong with this. Make sure you record your results straight away, its easy to forget what happened. Be precise with your measurements!	**Why do sensory analysis?** Products are checked to meet the specification and brief. Competitor's products are tested/compared. Check the quality control. Allow/Give an insight into a good and bad point to allow development. Attributes are used to market the product. Sensory testing covers: Smell/Aroma, Taste, Texture, Appearance.	This practical assessment is not testing how well you cook- its testing you on your ability to conduct and evaluate a scientific food experiment. Take photos of your experiment at each stage- these need to be in your write up. Write a equipment list. Write a ingredient and quantities list.	You gain more marks if you don't use a writing frame. Split your NEA into sections with these 6 titles; 1. Title of the task 2. Summary of your research 3. Hypothesis 4. Plan of action 5. Experiments 6. Conclusions The majority of your time should be spent on the experiments, 50% of the marks are available here.

YEAR 11 CYCLE 1 - GCSE PE

WEEK 1 and 2

Types of PED BANDSP:

- Blood Doping
- Beta Blockers
- Anabolic Agents
- Narcotic Analgesics
- Dieretics
- Stimulants
- Peptide Hormones

Blood Doping

Defined by WADA as the misuse of techniques and/or substances to increase one's red blood cell count.

Involves the removal of blood a few weeks prior to competition. The blood is frozen and re-injected just before competition.

Effects: Benefit endurance activities as they improve the body's oxygen carrying capacity.

Side effects of blood doping:

1. Thickening of blood (viscosity)
2. Infection
3. Heart attack
4. Embolism (blockage of vessels)

WEEK 2 and 3

Beta Blockers

The beta-blocker drugs 'sit' on receptors and stop (block) the receptor from being stimulated.

Effects: slows heart rate, calms and steadies hands

Side effects: Heart problems, low blood pressure, weakness and nausea.

Misused by precision athletes such as snooker players, darts players and archers.

Anabolic Agents

This category of drugs is artificially produced testosterone (MALE HORMONE). They promote muscle mass and bone growth, and reduce recovery time.

Effect: Repair body tissues after stress, promote muscle growth, ability to train harder with less fatigue.

Side effects: Females develop male features. Liver & heart damage. Misused by power athletes, e.g. sprinters, weightlifters and boxers.

WEEK 5 and 6

Narcotic analgesics

Drugs that can be used to reduce the feeling of pain. May mask injury or allow for longer training periods. This category of drugs masks pain (paracetamol, morphine, methadone, heroin)

Effects: Reduces pain or an injury.

Side effects: Nausea, highly addictive, serious injury. Misused by athletes who want to continue to play through injury. However, it can make their injury worse.

Diuretics

Drugs that remove fluid from the body, elevating the rate of bodily urine excretion. Used to lose weight. May be used by athletes in sports that have weight categories. May also be used to flush the body of other substances.

This category of drugs will promote removal of fluid from the body.

Effects: Rapid weight loss & flush out other substances from the body.

Side effects: Dehydration, Dizziness or light headed.

Misused by boxers and jockeys.

WEEK 7 and 8

Stimulants

Drugs that have an effect on the central nervous system - they increase mental and/or physical alertness.

Effect: Reduces tiredness, increased alertness & endurance.

Side effects: Raise blood pressure, increased risk of heart attack or stroke, hide symptoms of fatigue & addictive. Important to sports where reaction time is essential e.g. sprinters.

Peptide hormones

Drugs that stimulate the production of naturally occurring hormones.

Erythropoietin (EPO) and Growth Hormones (GH) Are two common peptide hormones.

Effect: Stimulates red blood cell production and Increase oxygen transport. Therefore increasing endurance.

Side effects: Possible blood clots an cardiovascular problems.

Misused by endurance athletes like long distance runners and cyclists.

WEEK 9 and 10

Advantages of taking PEDs

- Increased chances of success.
- Beat records.
- Fame.
- Wealth.
- Athletes would be on an even playing field.

Disadvantages of taking PEDs

- It is cheating and immoral.
- There are too many associated health risks.
- Fines and bans for those caught.
- Significant reputation damage.
- Lose contract /sponsorship.

Disadvantages to the sport:

- Reputation - A sport can become known for cheating and may affect young people taking it up.
- Credibility - Performance will be difficult to believe and will affect the number of spectators.
- 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 11 CYCLE 1 - DESIGN TECHNOLOGY: Product Design

KEY VOCABULARY

Iteration - A design methodology based on a cyclic process of prototyping, testing, analysing, and refining.

Analysis - To examine in fine detail.

Evaluate - To make a judgement against a set of criteria.

Aesthetics - The way a product looks and feels.

Sustainability - To avoid the depletion of natural resources in order to maintain an ecological balance.

Percentile - The value below which a percentage of data falls.

WEEK 1

Iterative design process is a cycle of designing, prototyping and testing to develop an idea and achieve the best possible outcome.

Problem describes what you are aiming to solve. It does not say how you intend to solve the problem.

Design brief is a paragraph outlining what you plan to do, for whom, where it should be used and why you have decided to follow this route.

WEEK 2

1. **Market research** revolves around gathering in-depth information about customer or user needs and preferences.
2. **Context:** where the product will be used, what conditions it will have to endure and how it will be maintained.
3. **Existing products:** know what is already out there, the varying functions, differing prices and customer opinions.
4. **Designers and companies:** the work of past and present designers and companies to inform your own designing.

WEEK 3

Environment/sustainability

1. **The six Rs** are strategies used to help make more sustainable decisions as a consumer and as a designer:
   - Refuse
   - Rethink
   - Reduce
   - Reuse
   - Repair
   - Recycle
2. **Carbon footprint** is the amount of carbon dioxide released into the atmosphere as a result of the actions of an individual, organisation or community.

WEEK 4

1. **Design specification**

   A list of technical, measurable and justified criteria your product needs to address:

   A - Aesthetics

   C - Customer

   C - Cost

   E - Environment

   S - Size

   S - Safety

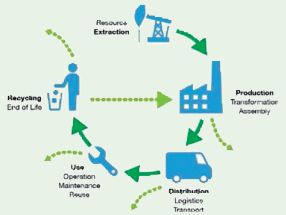
   F - Function

   M - Materials
2. **User centred design (UCD)** is an iterative design process where designers focus on the users and their needs in each phase of the design process.

WEEK 5

Life cycle assessment (LCA)

Evaluates the environmental impact of a product.



Planned obsolescence

Products that are only built to last a short amount of time.

WEEK 6

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 7

1. Natural wood is categorised as either:

   Hardwoods which come from deciduous trees, those that drop their leaves in the Autumn.

   Softwoods which come from coniferous trees, those that have needles and keep them all year round.
2. Metals are divided into two main categories:

   Ferrous metals which contain the element iron, also known as ferrite (Fe).

   Non-ferrous metals, which do not contain iron.

WEEK 8

1. **Polymers** are usually made from synthetic materials. Usually derived from crude oil or other finite resources, such as coal or natural gas
2. Plastics are categorised into two types:

   Thermoforming which can be remoulded without affecting the material's physical properties.

   Thermosetting which have strong chemical bonds between the molecules, which do not separate on heating.

WEEK 9

1. **Modern materials** are new and improved materials which are constantly being discovered and developed.
2. Modern materials include:
   - Fibre optics
   - Titanium
   - Flexible MDF
   - Polymorph
   - Coolmorph
   - Biodegradable polymers
   - Biopol
   - Graphene
   - Liquid crystal display (LCD)
   - Nanomaterials
   - Metal foam

WEEK 10

1. **Smart materials** react to an external stimulus by changing their characteristics and/or properties.
2. Smart materials include:
   - Self-healing polymer
   - Self healing concrete
   - Thermochromic pigments
   - Photochromic particles
   - Photochromic pigments
   - Shape memory alloy (SMA)
   - Quantum tunnelling composite
   - Piezoelectric material
   - Piezo transducer

YEAR 11 CYCLE 1 - PHOTOGRAPHY: Personal Project

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.

A01: Develop ideas through investigations, demonstrating a critical understanding of sources.

Task 1.

Gather inspiration: Find images from other photographers and artist who inspire you.

Task 2.

Image analysis: Use the analysing photographers help sheet on Teams to write about the work you have found.

The language of photography:

Line (diagonal), Texture (rough), Value (dark), Form (geometric), Colours (saturated), Composition (leading lines), Technique (collage or slow shutter speed), Mood (nostalgic), Context (culture), Style or Genre (abstract), Space (negative/positive).

Task 3.

Develop ideas: Using all your research start to develop your own ideas. Write your statement of intent for your project.

A02: Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.

Task 4.

Link: Use similar techniques, settings and processes to the photographer you have researched.

Task 5.

Experiment: Take a wide range of photos that link to your ideas and show that you can experiment. A minimum of 20 images per shoot.

Task 6.

Techniques: Explore different techniques, processes and materials to find out what effects you can achieve. Keep a record of all your experimenting.

Ideas to try: Print images in different sizes, add other media, draw over your images, experiment with water, create a 3D structure or a photomontage, use aperture/ shutter speed creatively, paint with light.

A03: Record ideas, observations and insights relevant to intentions as work progresses.

Task 7.

Contact Sheet: Print all your photos from a shoot and annotate it using the writing frame on Teams.

Task 8.

Annotations: Make sure you add notes alongside your photos/experiments that help to explain your thought process.

Task 9.

Organise & sequence: Your ePortfolio must show clearly the sequence of your thought pattern and development of ideas. Make organised sequences of photos to show how your ideas have progressed.

Task 10.

Draw: Create mini sketches to show photography shoot ideas, storyboards, drawing on contact sheets, drawing over photographs etc.

A04: Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.

Task 11.

Present: A personal response to your chosen theme or artist.

Task 12.

Evidence: Make sure you show evidence of links between your work and the sources you chose to research.

Task 13.

Understanding: Analyse and evaluate what you have done at each stage to show your understanding throughout the project. Demonstrate an understanding of visual language. For example:

Use compositional elements such as the rule of thirds, leading lines, negative space, blurring the background, symmetry, shape/pattern/texture/colour and tone.

YEAR 11 CYCLE 1 - SPORTS SCIENCE
R056: Developing Skills & Knowledge in Outdoor Activities

WEEK 1: LO1 - 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: LO1 - Provision of Outdoor Activities in the UK

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.

Factors affecting provision:
Media coverage; Location; Finance.

WEEK 3: LO2 - Understand the value of participating in outdoor activities

Physical - Social - Emotional - Intellectual

General benefits of participating in outdoor activities:

- Increased confidence
- Enjoyment and challenge
- Improved health and fitness
- Greater environmental awareness
- Increased motivation
- Opportunity to socialise

How participating in outdoor activities can help skills development:

- Social skills
- Team-building skills
- Decision-making skills
- Planning and organization skills
- Problem-solving skills
- Communication skills.

WEEK 4: LO3 - 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: LO3 - 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 11 CYCLE 1 - SPORTS SCIENCE
R056: Developing Skills & Knowledge in Outdoor Activities

WEEK 6: LO4 - 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 7: LO4 - 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 8: Orienteering and Kayaking

Orienteering - What is it?

- Orienteering is an exciting outdoor adventure activity/sport, which involves walking or running whilst navigating around a course using a detailed map and sometimes a compass. The aim is to navigate in sequence between a set of control points and decide the best route to complete the course in the quickest time.
- Orienteering can take place anywhere from a remote forest to an urban park, a school playground to the countryside.

Local facilities for orienteering:

- Haldon Forest; River Exe- Haven Banks; School site; Barton Fields.
- Equipment needed:
- Control Points, Compass, Map, Scorecard.

Kayaking:

- What is it?
- Water sport using a kayak or canoe that can be done on rivers, lakes and in the sea.

Local facilities for Kayaking:

- River Exe - Haven Banks; Red Rock - Exmouth. Watersports; Adventure Okehampton; Devon. Windsurf and Canoe Centre; Sea Sports South West; Wimbleball Lake; Tiverton Canal.

Equipment needed:

- Kayak.
- Paddle (1 per paddler), plus spare.
- Personal flotation device (1 per paddler).
- Bilge pump.
- Spray skirt (for cold weather/water).
- Dry bag for personal items.
- Headlamp/light with extra batteries (in case you're out after dusk).
- Signalling whistle.

VOCABULARY AND TERMINOLOGY

Backpacking - To go on a hike with a backpack and equipment to enable a person to stay outdoors overnight.

Boating - To ride a boat (power boat, canoe, kayak, sail boat) for pleasure.

Camping - To go into nature and live for a time in a tent or camper while on vacation.

Hiking - Walking for a long distance, usually in the woods or just in a place away from a town and many people. (Note: Different from backpacking because a hiker does not have to have equipment to stay in the woods for the night).

Surfing - An activity carried out on the shore of the ocean in which a person rides waves while standing a board (a surfboard).

YEAR 11 CYCLE 1 - STATISTICS: FURTHER MATHS
AQA Lvl 2 Certificate in Further Maths

PAPER 1: Written paper (Non-calculator) - 40% of assessment. 1h30mins - 70 marks

PAPER 2: Written paper (Calculator) - 60% of assessment. 2hours - 105 marks

- Number
- Algebra
- Co-ordinate Geometry
- Calculus
- Matrix Transformations
- Geometry

	(0, 0), radius r is $x^2 + y^2 = r^2$	centre (0, 0) and radius The application of circle geometry facts appropriate: eg the angle in a semi-circle perpendicular from the centre to a chord chord, the angle between tangent and r
3.8	Understand that $(x - a)^2 + (y - b)^2 = r^2$ is the equation of a circle with centre (a, b) and radius r	Including writing down the equation of a given centre and radius

4 Calculus

Differentiation

4.1	Know that the gradient function $\frac{dy}{dx}$ gives the gradient of the curve and measures the rate of change of y with respect to x	
4.2	Know that the gradient of a function is the gradient of the tangent at that point	
4.3	Differentiation of kx^n where n is a positive integer or 0, and the sum of such functions	Including expressions which need to be simplified first Given $y = (3x + 2)(x - 3)$ work out $\frac{dy}{dx}$
4.4	The equation of a tangent and normal at any point on a curve	
4.5	Use of differentiation to find stationary points on a curve: maxima, minima and points of inflection	Understand the terms 'increasing functi 'decreasing function' and applying them the nature of stationary points
4.6	Sketch a curve with known stationary points	

5 Matrix Transformations

		All calculations will be restricted to 2 × 2 or 2 × 1 matrices
5.1	Multiplication of matrices	Multiplying a 2 × 2 matrix by a 2 × 2 matrix or by a 2 × 1 matrix Multiplication by a scalar
5.2	The identity matrix, **I**	2 × 2 only
5.3	Transformations of the unit square in the $x - y$ plane	Representation by a 2 × 2 matrix Transformations restricted to rotations of 90°, 180° or 270° about the origin, reflections in a line through the origin (ie $x = 0$, $y = 0$, $y = x$, $y = -x$) and enlargements centred on the origin
5.4	Combination of transformations	Using matrix multiplications

6 Geometry

6.1	Knowledge of perimeter and area of rectangles, triangles and circles, including area of a triangle $= \frac{1}{2}ab\sin C$ and volume of solids is expected Knowledge of angle properties of parallel and intersecting lines, triangles, all special types of quadrilaterals and polygons	Understand and use circle theorems: Angle at the centre is twice the angle at the circumference; angles in the same segment are equal; opposite angles in cyclic quadrilateral add up to 180°; alternate segment theorem; the theorems listed in the notes of section 3.7
	Geometric proof	
6.2	Understand and construct geometrical proofs using formal arguments	The use of theorems listed in the notes of 3.7 and 6.1
	Trigonometry in triangles	
6.3	Sine and cosine rules in scalene triangles	Knowledge and use of trigonometry to solve right angled triangles is expected
	Pythagoras' theorem	
6.4	Use of Pythagoras' theorem in 2D and 3D	Recognise Pythagorean triples; 3, 4, 5; 5, 12, 13; 8, 15, 17; 7, 24, 25 and simple multiples of these
6.5	Be able to apply trigonometry and Pythagoras' theorem to 2 and 3 dimensional problems	Including the angle between a line and a plane and the angle between two planes
	Ratios of angles and their graphs	
6.6	Sketch and use graphs of $y = \sin x$, $y = \cos x$ and $y = \tan x$ for $0° \leqslant x \leqslant 360°$	
6.7	Be able to use the definitions $\sin\theta$, $\cos\theta$ and $\tan\theta$ for any positive angle up to 360° (measured in degrees only)	Angles measured anticlockwise will be taken as positive
6.8	Knowledge and use of 30°, 60°, 90° triangles and 45°, 45°, 90° triangles	The use of the ratios $1:\sqrt{3}:2$ and $1:1:\sqrt{2}$
6.9	Use of $\tan\theta = \frac{\sin\theta}{\cos\theta}$ and $\sin^2\theta + \cos^2\theta = 1$	Including expressions to be simplified, proofs of identities and equations solved
6.10	Solution of simple trigonometric equations in given intervals	Equations will be restricted to single angles: $\sin x = 0.5; \sqrt{2}\sin x = \cos x$ for $0° \leqslant x \leqslant 360°$; $\sin^2 x = \frac{1}{\cdot}$ for $0° \leqslant x \leqslant 360°$

3 Co-ordinate Geometry (2 dimensions only)

The straight line

3.1	Know and use the definition of a gradient	
3.2	Know the relationship between the gradients of parallel and perpendicular lines	Show that A (0, 2), B (4, 6) and C (10, 0) form a right angled triangle
3.3	Use Pythagoras' theorem to calculate the distance between two points	
3.4	Use ratio to find the coordinates of a point on a line given the coordinates of two other points.	Including midpoint
3.5	The equation of a straight line in the forms $y = mx + c$ and $y - y_1 = m(x - x_1)$	Including interpretation of the gradient and y-intercept from the equation
3.6	Draw a straight line from given information	

The co-ordinate geometry of circles

3.7	Understand that the equation of a circle, centre (0, 0), radius r is $x^2 + y^2 = r^2$	Including writing down the equation of a circle given centre (0, 0) and radius The application of circle geometry facts where appropriate: eg the angle in a semi-circle is 90°, the perpendicular from the centre to a chord bisects the chord, the angle between tangent and radius is 90°
3.8	Understand that $(x - a)^2 + (y - b)^2 = r^2$ is the equation of a circle with centre (a, b) and radius r	Including writing down the equation of any circle given centre and radius

4 Calculus

Differentiation

4.1	Know that the gradient function $\frac{dy}{dx}$ gives the gradient of the curve and measures the rate of change of y with respect to x	
4.2	Know that the gradient of a function is the gradient of the tangent at that point	
4.3	Differentiation of kx^n where n is a positive integer or 0, and the sum of such functions	Including expressions which need to be simplified first Given $y = (3x + 2)(x - 3)$ work out $\frac{dy}{dx}$
4.4	The equation of a tangent and normal at any point on a curve	
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Geometric proof

6.2	Understand and construct geometrical proofs using formal arguments	The use of theorems listed in the notes of 3.7 and 6.1

Trigonometry in triangles

6.3	Sine and cosine rules in scalene triangles	Knowledge and use of trigonometry to solve right angled triangles is expected

Pythagoras' theorem

6.4	Use of Pythagoras' theorem in 2D and 3D	Recognise Pythagorean triples; 3, 4, 5; 5, 12, 13; 8, 15, 17; 7, 24, 25 and simple multiples of these
6.5	Be able to apply trigonometry and Pythagoras' theorem to 2 and 3 dimensional problems	Including the angle between a line and a plane and the angle between two planes

Ratios of angles and their graphs

6.6	Sketch and use graphs of $y = \sin x$, $y = \cos x$ and $y = \tan x$ for $0° \leqslant x \leqslant 360°$	
6.7	Be able to use the definitions $\sin\theta$, $\cos\theta$ and $\tan\theta$ for any positive angle up to 360° (measured in degrees only)	Angles measured anticlockwise will be taken as positive
6.8	Knowledge and use of 30°, 60°, 90° triangles and 45°, 45°, 90° triangles	The use of the ratios $1:\sqrt{3}:2$ and $1:1:\sqrt{2}$
6.9	Use of $\tan\theta = \frac{\sin\theta}{\cos\theta}$ and $\sin^2\theta + \cos^2\theta = 1$	Including expressions to be simplified, proofs of identities and equations solved
6.10	Solution of simple trigonometric equations in given intervals	Equations will be restricted to single angles: $\sin x = 0.5$; $\sqrt{2}\sin x = \cos x$ for $0° \leqslant x \leqslant 360°$; $\sin^2 x = \frac{1}{4}$ for $0° \leqslant x \leqslant 360°$

YEAR 11 CYCLE 1 BIOLOGY

KEY VOCABULARY

1. **Aerobic respiration: c**hemical reaction releasing energy using oxygen.
2. **Alveoli:** air sacs found in the lungs. The site of gaseous exchange.
3. **Anaerobic respiration:** chemical reaction releasing a small amount of energy without oxygen present.
4. **Arteries:** blood vessels which carry oxygenated blood around body.
5. **Biomass:** the dried living mass of an organism.
6. **Capillaries:** small blood vessels that reach cells.
7. **Decomposers:** micro-organisms responsible for decay.
8. **Erythrocytes:** red blood cells, these carry oxygen.
9. **Lactic acid:** the product of anaerobic respiration.
10. **Lymphocytes:** a type of white blood cell which releases antibodies to neutralise pathogens.
11. **Phagocytes:** a type of white blood cell which engulfs pathogens to detect its type.
12. **Plasma:** watery content of blood which carries dissolved glucose, urea and mineral ions.
13. **Platelets:** cell fragments found in blood which are responsible for clotting.
14. **Respirometer:** used to measure the rate of respiration.
15. **Trophic** level: a level in a food chain**.**
16. **Urea:** toxic waste product from amino acids, excrete in urine.
17. **Veins:** blood vessels which carry deoxygenated blood around the body.

WEEK 1

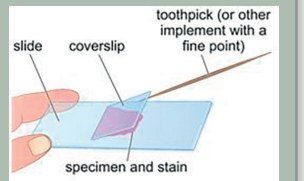
1. **All animal cells** have the same organelles: **nucleus, cytoplasm, cell surface membrane, mitochondria and ribosomes.**
2. **Ribosomes** are where protein synthesis takes place.
3. **Mitochondria** are where **aerobic respiration** occurs.
4. Cells from different **tissues** have different adaptations (shapes, sizes and functions). They are **specialised.**
5. **Plant** cells have thick **cell walls (made of cellulose)** and may have some other features not found in animal cells: **chloroplasts** and a **permanent vacuole.**
6. Animal and plant cells have a nucleus and are described as **eukaryotic.** Bacteria cells do not have a nucleus and are described as **prokaryotic.**

WEEK 2

1. **There are two main types of microscopes; light and electron microscopes.**
2. **Electron microscopes have a greater magnification and resolution which has increased our understanding of sub-cellular organelles.**
3. **Magnification = Image size + Actual size**

To focus:

a. Use the smallest objective lens.
b. Place the slide on the stage
c. Turn the focusing wheel slowly to obtain a clear image.



B Lowering a coverslip slowly and carefully means a slide is less likely to contain air bubbles.

WEEK 3

1. There are many substances that need to be transported in and out of body organs:
   a. **Oxygen:** from alveoli (in lungs) to blood
   b. **Carbon dioxide:** from blood to alveoli
   c. **Food molecules:** from small intestines to blood
   d. **Urea:** from cells to blood and into kidney
2. These substances **diffuse** across surface membranes.
3. **The alveoli** in the lungs are adapted for gaseous exchange in the following ways:
   a. **Large capillary network** to increase exchange rate
   b. **One cell thick** to speed up diffusion
   c. They have a **large surface area**
4. **Surface area to volume ratio (SA:V)** is calculated using **SA÷V**

WEEK 4

1. There are 4 main components of blood: **erythrocytes** (red blood cells), **white blood cells** (phagocytes and lymphocytes), **plasma and platelets.**
2. There are 3 types of blood vessel:
   a. **Veins carry deoxygenated blood to heart.**
   - Large lumen (internal hole)
   - Valves to keep blood moving in one direction back to heart.

   b. **Arteries carry oxygenated blood away form heart.**
   - Thick layers of muscle to withstand the high-pressure generated by left ventricle
   - Elastic tissue

   c. **Capillaries: site of exchange between blood and body tissues**
   - one cell thick to enable rapid diffusion

YEAR 11 CYCLE 1 BIOLOGY

WEEK 5

1. **The circulatory system** is made up of the **heart, blood vessels** and **blood.**
2. Humans have a **double circulatory system** - two circuits joined together.
3. The walls of the heart are mostly made of **muscle tissue.**
4. The heart has **valves** to prevent blood flowing backwards.
5. The heart has **4 chambers.**
6. Deoxygenated blood flows in to the **right atrium** and then into the **right ventricle**, where it is pumped to the lungs to take in oxygen.
7. The **pulmonary vein** carries oxygenated blood from the lungs to the **left atrium,** into the **left ventricle**, where it is pumped to the other organs of the body. The oxygen carried by the blood then **diffuses** into cells.

WEEK 6

1. **Respiration is the chemical reaction which takes place in the cells. Its purpose is to release energy. It is an exothermic reaction.**
2. **Aerobic respiration:**
   a. Takes place in the mitochondria of cells
   b. Releases a large amount of energy
   c. Reaction uses oxygen
   d. Glucose + oxygen -> carbon dioxide + water
3. **Anaerobic respiration:**
   a. Takes place in the cytoplasm of cells
   b. No oxygen is present
   c. Less energy is released
   d. A by-product called lactic acid is formed
   e. Glucose -> lactic acid
   f. Lactic acid causes muscle fatigue

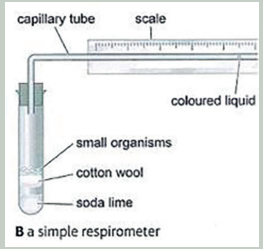
WEEK 7

Effects of exercise on the body:

1. As the muscles contract and relax, there is an increased demand for energy.
2. The body tries to meet this demand by:
   a. **Increasing the heart rate** so that oxygenated blood is pumped around the body faster
   b. **Increasing the breathing rate** so that the exchange of oxygen and carbon dioxide between the air and body happens faster
   c. **Vasodilation** of blood vessels leading to and form muscles
   d. **Vasoconstriction** of blood vessels to organs not required in exercise, e.g. stomach
3. If **insufficient oxygen** is supplied to the muscle cells then **anaerobic respiration** occurs.

WEEK 8

1. **Respiration core practical:** to investigate the rate of respiration in living organisms.
2. **A respirometer** is used to measure the uptake of oxygen by an organism.
3. **A water bath** is used to bring the organisms to a set temperature.
4. **Cotton wool** is placed in between the organisms and soda lime as the soda lime is **corrosive.**
5. **Soda lime** is used to absorb carbon dioxide so this does not affect the position of the liquid.



B a simple respirometer

WEEK 9

1. Inherited characteristics can be **dominant** or **recessive.**
2. **Alleles:** different **forms** of the **same gene.**
3. **Dominant: allele** will always have an effect.
4. **Recessive:** an **allele** that will only have an effect if the **other allele** is **also recessive.**
5. **Punnett** squares can be used to determine the **probability of inheriting certain characteristics.**
6. **Male** sex chromosomes: **XY.**
7. **Female** sex chromosomes: **XX.**
8. **Genotype:** the alleles present in an organism.
9. **Heterozygous**: when the **alleles** for a gene are **different** in an organism (e.g. Rr).
10. **Homozygous:** when the **alleles** for a gene are the **same** in an organism (e.g RR, rr).

WEEK 10

1. **Digestive enzymes break down:**
   a. **Amylase:** starch into glucose.
   b. **Lipase:** lipids (fats) into fatty acids & glycerol.
   c. **Protease:** protein into amino acids.
2. The rate an enzymes breaks down a substance can is calculated by:

   $$\text{Rate (g/min)} = \frac{\text{amount of substance broken down (g)}}{\text{time taken (min)}}$$

3. **Factors that affect rate of activity:**
   a. **Temperature:** as it increases the rate of reaction increases until it reaches **optimum** past this point the enzyme denatures
   b. **pH:** past the **optimum** the enzyme will **denature**.
   c. **Substrate concentration:** as it increases the enzyme activity increases until all active sites contain substrate molecules.

YEAR 11 CYCLE 1 - MUSIC: Job Roles in the Music Industry

WEEK 1

Venues:

Small venues:

- Pubs
- Community hall
- Church

Uses:

- Used by local groups/performers
- More unknown artists with smaller fan base.
- Musicians wants a more ntimate atmosphere.

Advantages:

- Cheap
- More intimate atmosphere
- More accessible

Disadvantages:

- Small capacity
- Might not have good acoustics
- May not get as much interest than you would at a larger venue.
- Less publicity

Large venues:

- Stadiums
- Areas
- Fields (festivals)
- Beaches (Festivals)

Uses:

- More well known artists
- Bands with larger fan base
- More publicity
- Larger capacity

Disadvantages:

- Higher cost
- If not very busy could lead to lack of atmosphere
- May be less accessible to get to.

WEEK 2

Musical Director (Conductor):

7 Responsibilities:

1. Unify performers
2. Set the tempo & execute clear indications by conducting
3. Execute clear indications & shape the sound
4. Guide the orchestra/choir
5. Choose the music & study the scores
6. Relay ideas to the performers
7. Schedule rehearsals

Live Sound Technician:

5 Responsibilities:

1. Choose suitable microphones & equipment
2. Position & rig-up microphones
3. Do sound-checks
4. Operate the sound desk during shows/recording
5. Look after the equipment

Roadie:

4 Responsibilities:

1. Carry equipment
2. Set up before event
3. Look after the equipment
4. Pack away at the end of the event

Instrumental Support:

3 Responsibilities:

1. Look after the instrument
2. Fix when broken (broken strings)
3. Give advice regarding best use of equipment

WEEK 3

Musician:

3 Examples: Orchestral player, Conductor (musical director), Backing vocalist

4 Responsibilities:

1. Train and practise regularly to keep skills to a high standard
2. Turn up to rehearsals on time and prepared
3. Look after instrument
4. Learn new music for a show

Composer/Song-writer:

5 Responsibilities:

1. Compose music for a TV programme
2. Compose a song for a famous singer
3. Compose music for a special event (coronation)
4. Keep to a deadline
5. Work with the performer so that the song/composition is at their level of singing/performance

Producer:

6 Responsibilities:

1. (Known as Record producer) Oversee & manage the recording of an artist's music
2. Gather ideas for the project & select songs
3. Hire musicians for the project
4. Coach the artist in the studio
5. Control the recording session
6. Supervise the entire process through mixing to mastering

WEEK 4

Promoter:

5 Responsibilities:

1. Publicise a concert
2. In charge of 'putting on' the show
3. Work with artists' agent
4. Work with venues to arrange for a show
5. Promote the even through advertisement & publicity

Marketing:

5 Responsibilities:

1. Design and implement marketing (i.e selling) plans: album sales, streams
2. Gather prices for advertisements and promotions
3. Devise promotional events, giveaways, sponsorships
4. Have a radio/ online campaign for an artist
5. Create the artist's image/brand

A&R (Artists and Repertoire):

5 Responsibilities:

1. Scouting for new talent & sign to a record label
2. Oversee all the aspect of the process from delivery to finished recordings
3. Development of artist as they grow & mature
4. Manage the recording process
5. Help find songs appropriate for the artist

WEEK 5

Recording Studio Personnel:

3 Examples: Sound engineer, Producer, Instrument technician

5 Responsibilities:

1. Hire engineers & set-up workers & other technical staff
2. Select & purchase equipment, ordering repairs
3. Establish a schedule
4. Oversee mixing & mastering
5. Coordinate with client schedules & use of studio space & equipment

Producer:

5 Responsibilities:

1. Work closely with sound engineers & audio technicians
1. Work closely with recording artist
1. Enhance recordings (add instruments to existing tracks)
1. Schedule recording times
1. Oversee overall production quality of a song

Session Musician:

5 Responsibilities:

1. Turn up on time
2. Rehearse music & keep instrumental level high
3. Follow instructions given by producer/conductor
4. Bring instrument & take care of it
5. Contribute partly (at times to the writing of an arrangement)

YEAR 11 CYCLE 1 - MUSIC: Job Roles in the Music Industry

WEEK 6

Mastering:

3 things a mastering engineer does:

1. Complete the audio mastering process for an album
2. Prepare & transfer audio from one raw format to a desired mater format
3. Refine the sound quality & make subtle nuances to create an appealing sound

3 things a CD manufacturer does:

1. Master CDs of high quality
2. Transport to distribution outlets (stores or online)
3. Duplicate CDs

Music Journalist/Blogger:

3 examples of what they do:

1. Write reviews about an artist's concert/ album
2. Attend shows, concerts, events
3. Listen to CDs, online music, new talent

Broadcaster (TV & radio):

3 examples of what they do:

1. Interview artists
2. Select music for a show
3. Present music show & discuss trends

WEEK 7

Software Programmer/ App Developer:

3 examples of what they do:

1. Create apps, musical programmes: sequencing (Logic), notation software (Sibelius), music games
2. Up-date the programme regularly
3. Create computer programmes that assist musicians with their training (aural tests, music theory)

Retail & Distribution:

3 examples of what retail does:

1. Record shop/store/online that sells recorded music
2. Online: iTunes, Spotify, Amazon
3. Shops: HMV, specialist shop

3 examples of what distributors do:

1. How albums get into shops
2. Sign deals with record label that gives them the right to sell that label's products
3. Takes a cut of the income from each album sold

WEEK 8

Employment Patterns:

Full-time:

Standard is 37-40 hours/week. Contract may include pension, paid holidays, sick time. Will usually be long-term.

Part-time:

A contract as above, but not full-time. Can vary from one day- four days. Will usually be long-term.

Freelance:

Self-employed & is not committed to a particular employer long-term. No long-term contract!

Self-employed:

Working for yourself rather than for a business or someone else.

Permanent v causal:

Permanent offers guaranteed work for a certain length of time & job security.

Casual is not secure as it varies according to the work on offer, but it does give flexibility and choice as to organising your time.

WEEK 9

Artistic/Talent Management:

6 Responsibilities:

1. Organise & confirm show dates
2. Liaise with record companies
3. Assist with studio planning
4. Can function as a lifestyle coach for the artist (support)
5. Take care of high quality standard
6. Exploit marketing opportunities

Venue Management:

5 Responsibilities:

1. Ensure that all services are opened and fully functional during scheduled times
2. Check Health & Safety is up-ta-date
3. Give consistent and excellent level of service to clients
4. Book artists
5. Assist with preparations of shows & supervise the whole process

Studio Management:

5 Responsibilities:

1. Administrative control of the studio's operation
2. Schedule times & liaise with clients
3. Engage engineers, session musicians, technical engineers
4. Promotion & marketing of studio
5. Ensure all equipment is H&S and up-to-date

WEEK 10

You are recording your single at HCC Recording Studios.

10 of your responsibilities:

1. Arrive on time to rehearsals
2. Practice my part thoroughly
3. Make sure my instrument (including voice) is in good condition
4. Bring any music or other equipment needed (capo, pick, score)
5. Be ready to work hard and go over a section several times until it is perfect
6. Work as a team with the recording personnel and other members of the band
7. Listen to recording and perfect it until it is of the best quality
8. Promote the recording on social media
9. Go on tour in the area to promote single
10. Keep developing musical style and learning from the experience: always grow and improve (practise)

YEAR 11 CYCLE 1 - PERFORMING ARTS: Dance Pathways

Component 1: Exploring the Performing Arts Industry

KEY VOCABULARY

Collaborate - Work jointly with others to produce defined outcomes.

Communicate - To convey ideas or information to others.

Compare - Identify the main factors relating to two or more items/ situations, explain the similarities and differences, and in some cases say which is best and why.

Competent - Having the necessary knowledge or skill to do something suitably or sufficiently in amount or extent.

Creative - Using techniques, equipment and processes to express ideas or feelings in new ways.

Define - State or describe exactly the nature, scope or meaning of something.

Describe - Give a clear, objective account in their own words, showing recall, and in some cases application, of relevant features and information. Normally requires breadth of content coverage.

Explain - Provide details and give reasons and/or evidence to support an argument.

Investigate - Carry out research or trial activities to increase understanding of the application of factual information.

Influence - be inspired by something/body.

Reflect - Think carefully and review information and/or performance, includes articulating ideas, concepts, activities, findings or features.

Review - Assess formally based on appropriate evidence or information with the intention of instituting change if necessary.

State - Express something definitely or clearly.

Stage Dance - A performance that is live.

Theme - A topic that is played out to an audience.

WEEK 1: Cinderella/Vocabulary 1 & 2

1. **Sir Matthew Bourne OBE** is a successful choreographer and director. He creates and directs dance for musicals, opera, theatre, film as well as his own highly successful, award-winning companies.
2. **Plot Synopsis:** It's 1940, and Britain is at war with Germany. Air-raid sirens sound their warnings, and a Pathé News announcement advises citizens what to do during a bombing offensive. As we hear the opening bars of Prokofiev's score we see black and white film footage of London in The Blitz - of crumbling buildings and homes on fire.
3. **The main characters.**
   - Cinderella
   - Wicked Step Mother
   - Fairy God Mother/The Angel The Prince/Pilot
   - The Ugly Sister/Step sisters and brother

WEEK 2: Cinderella/Vocabulary 3 & 10

1. **Influences:**

   Matthew has taken inspiration from a great many productions of the fairy-tale. Matthew recalls the Disney's animated movie from 1950, as well as the National Theatre's pantomime version from the mid 1980's. Frederick Ashton's production of Cinderella, made for the Royal Ballet, in 1948, that had the biggest impact on Matthew, and which inspired him to create his own version.
2. **Themes:**

   Family is one of the key themes in the original version of Cinderella, as well as in Matthew Bourne's version.

   The show is also filled with antagonistic themes such as:
   - Life and death
   - Good and evil
   - Hope and fear
   - Destiny and freewill

WEEK 3: Paper Birds - Thirsty/Vocabulary 5 & 6

1. **Paper Birds:** Formed in 2003 upon graduation from Bretton Hall, Leeds University, The Paper Birds was founded upon friendship and a mutual love of contemporary theatre. A movement and desire to make work that placed female roles centre stage.
2. **Plot Synopsis:** Based on the nation's love affair with alcohol, Thirsty weaves together real booze based confessions collected from a 'drunken hotline' and hundreds of questionnaires answered by young and old. Thirsty relays tales from the happy hours to the early hours. Fusing live music, verbatim text and stunning physical theatre, The Paper Birds examine binge drinking culture in the UK; lost memories, gained traumas, tales of bruised knees and uncontrollable laughter**.**

WEEK 4: Paper Birds - Thirsty/Vocabulary 7, 8 & 10

Influences: Movement and the desire to make work that placed female roles centre stage.

In 2008, They utilised the method of interviewing people and placing verbatim material within the script. This developed organically throughout the process of making 'In a Thousand Pieces' and became a defining shift in the direction of the company.

Thousand Pieces tells a story of agirl's journey to the UK from Eastern Europe. It is one of many other performance produced by the company such as Blind, Broke, Mobile .

Phrases within the company 'Give Voice' aim to give voice to the voiceless

The main Characters
Devised & Performed by: Jemma McDonnell & Kylie Walsh

YEAR 11 CYCLE 1 - PERFORMING ARTS: Dance Pathways

Component 1: Exploring the Performing Arts Industry

WEEK 5: Chicago/Vocabulary 4 & 9

1. Chicago

Chicago js an American musical with music by John Kander, lyrics by Fred Ebb, and book by Ebb and Bob Fosse, Set in Chicago in the jazz age, the musical is based ona 1926 play of the same name by reporter Maurine Dallas Watkins about actual criminals and the crimes on which she reported.

2. Plot Synopsis

Nightclub sensation Velma murders her philandering husband, and Chicago's slickest lawyer, Billy Flynn , is set to defend her. But when Roxie also winds up in prison, Billy takes on her case as well - turning her into a media circus of headlines. Neither woman will be outdone in their fight against each other and the public for fame and celebrity.

WEEK 6: Chicago/Vocabulary 12 & 13

1. The Main Characters

- Roxy Hart - An aspiring vaudevillian and murderess who kills her paramour after a spat and is sent to jail.
- Velma Kelly - A vaudevillian and murderess who is on trial for killing her cheating husband and sister. She is represented by Billy Flynn and competes with Roxie Hart for him.
- Billy Flynn - Velma and Roxie's lawyer who has a perfect track record and makes celebrities of his clients to win sympathy and sway public opinion.
- Mary Sunshine - The newspaper reporter
- Matron "Mama" Morton - The matron of the Cook County Jail. Grants the inmates favours in exchange for bribes
- Amos Hart - Roxy's good natured but simple husband who nobody pays attention to.

2. The Theme

The story is a satire on corruption in the administration of criminal justice and the concept of the "celebrity criminal".

WEEK 7: Component Vocabulary 1-8

1. **Collaborate** - Work jointly with others to produce defined outcomes.
2. **Communicate** - To convey ideas or information.
3. **Compare** - Identify the main factors relating to two or more items/ situations, explain the similarities and differences, and in some cases say which is best and why.
4. **Competent** - Having the necessary knowledge or skill to do something suitably or sufficiently in amount or extent.
5. **Creative** - Using techniques, equipment and processes to express ideas or feelings in new ways.
6. **Define** - State or describe exactly the nature, scope or meaning of something.
7. **Describe** - Give a clear, objective account in their own words, showing recall, and in some cases application, of relevant features and information.
8. **Explain** - Provide details and give reasons and/or evidence to support an argument.

WEEK 8: Component Vocabulary 8-15

8. **Explain -** Provide details and give reasons and/or evidence to support an argument.
9. **Investigate** - Carry out research or trial activities to increase understanding of the application of factual information.
10. **Influence** - be inspired by something/body.
11. **Reflect** - Think carefully and review information and/ or performance, includes; articulating ideas, concepts, activities, findings or features.
12. **Review** - Assess formally based on appropriate evidence or information with the intention of instituting change if necessary.
13. **State** - Express something definitely or Clearly.
14. **Stage Dance** - A performance that is live.
15. **Theme** - A topic that is played out to an audience.

WEEK 9: Paper Birds - Thirsty/Vocabulary 5 & 6

1. Creative intentions

- Theme
- Issue
- Response to stimulus
- Style/genre
- Contextual influences
- Collaboration with other practitioners
- Influences by other practitioners.

2. Purpose

- To educate
- To inform
- To entertain
- To provoke
- To challenge viewpoints
- To raise awareness
- To celebrate.

3. Performance roles

- Actor
- Dancer

WEEK 10: Paper Birds - Thirsty/Vocabulary 7, 8 & 10

Actor/Dancer/Singer - Depict Characters, voice, appearance, gestures.

Artistic Director - Oversee the artistic activities within a company.

Backstage - A crew who carry out work behind the scenes.

Choreographer - Creates dance routines.

Director - In charge of the business.

Front of House - The business of the theatre that concerns the audience.

Lighting Designer - Works with the directors and choreographers to organise the lighting.

Make-Up Designer - Bringing the character to life.

Marketing Director - Responsible advertising.

Playwright - Writes the play/scrips.

Producer - Responsible for the managerial aspect.

Property Master - Creates the props.

Scenic Artist - Paint the props.

YEAR 11 CYCLE 1 CHEMISTRY

KEY VOCABULARY

1. **Addition reaction:** a reaction In which reactants combine to form one larger molecule and no other product
2. **Condensation polymerisation:** when monomers join together and eliminate a small molecule, such as water
3. **Finite resource:** a non-renewable resource that will eventually run out (e.g. fossil fuel)
4. **Functional group:** an atom or group of atoms in a molecule that is mainly responsible for the molecule's chemical reactions and properties
5. **Homologous series:** a family of compounds that have the same general formula and similar properties, but have different numbers of carbon atoms
6. **Monomer:** a small molecule that can join with other molecules like itself to form a polymer
7. **Organic compound:** a compound that has a central framework of carbon atoms onto which hydrogen and other atoms are attached
8. **Oxidising agent:** a substance that causes another substance to be oxidised in an oxidation reaction
9. **Polymer:** a long-chain molecule made of by joining many smaller molecules (monomers) together
10. **Saturated:** a molecule that contains only single bonds between the carbon atoms in the chain
11. **Synthetic polymer:** a polymer that is manufactured in a laboratory or a factory
12. **Unsaturated:** a molecule that contains one or more double bonds between carbon atoms in a chain

WEEK 1

1. **Crude oil is:**
   a. a mixture of hydrocarbons
   b. a finite resource
   c. made up of hydrogen and carbon
   d. atoms only
   e. an arrangement of carbon atoms in chains or rings
2. **Crude oil is a non-renewable fuel.**
3. **Petrol, kerosene** and **diesel oil** are **fossil fuels** that are obtained from **crude oil.**
4. **Methane** is a **non-renewable** fossil fuel made from **natural gas.**

WEEK 2

1. **Fractional distillation:** the **separation** of crude oil into **simpler** more useful mixtures.
2. **Fractions** from fractional distillation are from the same **homologous** series:
   a. Differ by an increasing methyl (CH_2) group
   b. Have similar chemical properties
   c. Have a gradual increase in boiling point

WEEK 3

1. **Complete combustion** of **hydrocarbons** occurs when **oxygen** is **present** and **releases carbon dioxide, water** and **energy.**
2. **Incomplete combustion** of **hydrocarbons** occurs when there is **not enough oxygen present** and can **produce carbon, carbon monoxide** and **water.**
3. **Sulfur dioxide** can be produced due to **impurities** in **fuels.**
4. **Acid rain** occurs when **sulfur dioxide dissolves in rain water.**
5. **Oxides** of **nitrogen** form when **oxygen** and **nitrogen** react in **engines.**
6. A **high temperature** is needed for **oxygen and nitrogen to react.**
7. **Oxides** of **nitrogen** are **pollutants.**

WEEK 4

1. **Cracking** is a process of **breaking larger saturated** hydrocarbon chains down into smaller more useful ones.
2. Cracking is needed to **meet the demands of fuel supply.**
3. To test for **oxygen put a glowing splint** over the test tube and it will **relight.**
4. **Oceans** have formed due to the **condensation** of **water vapour.**
5. The amount of **carbon dioxide** in the atmosphere has **decreased** because it **dissolved** in the **oceans.**
6. The amount of **oxygen** in the atmosphere has **increased** as primitive **plants** grew and released **oxygen** via **photosynthesis.**

YEAR 11 CYCLE 1 CHEMISTRY

WEEK 5

1. **Methane, carbon dioxide** and **water** are **greenhouse gases** found in the atmosphere.
2. **Methane** is produced from **livestock.**
3. **Carbon dioxide** is produced from the **burning** of **fossil fuels.**
4. Greenhouse gases **absorb** heat **radiated** from the Earth and re-emit it which keeps the Earth **warm.**
5. **Hydrocarbons differ by:**
   a. Boiling point
   b. Viscosity
   c. Ease of ignition
   d. The number of carbon and hydrogens

WEEK 6

1. **Alkanes and alkenes are hydrocarbons**
2. **Alkanes are:**
   a. **Saturated -** have **no** carbon carbon **double bonds**
   b. Have the general rule C_nH_{2n+n}
   c. Their names end in **'ane'**
3. **Alkenes are:**
   a. **Unsaturated - do** have carbon carbon **double bonds**
   b. Have the **general rule** C_nH_{2n+n}
   c. Their names end in **'ene'**
4. **The carbon number links to prefix:**
   a. one =meth
   b. two=eth
   c. three = pro
   d. four=but

WEEK 7

1. An **addition** reaction occurs when **bromine** reacts with an **alkene.**
2. Bromine water can be used to **determine** if a hydrocarbon is an **alkane** or an **alkene.**
3. Bromine water mixed with an **alkene** will go **orange to colourless.**
4. Bromine water mixed with an **alkane** will stay orange.
5. When **hydrocarbons burn** and **complete** combustion takes place **oxidation** occurs forming **carbon dioxide** and **water.**
6. **Ethanol** is produced by the **fermentation** of **carbohydrates** using **yeast** which provides **enzymes.**

WEEK 8

1. **Alcohols:**
   a. Have a **hydroxide functional** (-OH) group
   b. Have the general rule $C_nH_{2n+n}OH$
   c. Are **organic** compounds
   d. React with **oxygen** to form **water** and **carbon dioxide**
2. Alcohols can be **dehydrated** to form **alkenes.**
3. Alcohols release **energy** when they are **burnt.**
4. The **higher** the **carbon number** the **more energy** that is **released.**
5. The **mass** of **fuel burnt** can be measured and the **energy change per gram** can be calculated.
6. Temperature change/mass of fuel burnt = energy change per gram.

WEEK 9

1. **1. Carboxylic acids:**
   a. Are **organic** compounds
   b. Have the **functional group** (-COOH)
   c. Acidic
   d. Names end in **'oic'**
   e. Are members of the same **homologous group** and have **similar reactions.**
2. A**lcohols** can be **oxidised** to form **carboxylic acids.**
3. **Methanol** is **oxidised** to form **methanolc acid.**
4. **Carboxylic acids** use the same **prefix's as alkanes, alkenes and alcohols.**
   1 - **meth**anoic acid
   2 - **eth**anoic acid
   3 - **pro**panoic acid
   4 - **but**anoic acid

WEEK 10

1. A **polymer** is substance made of **small repeating** units with a **high molecular mass.**
2. The **uses** of polymers are **related** to their properties.
3. A **polymerisation** reaction is an example of an **addition** reaction.
4. **Poly(ethene)** is a polymer of **ethene** and is an example of polymerisation.
5. **Polyester** is formed by a **condensation reaction.**
6. **Polyester:**
   1. Is formed from **2 monomers**
   2. Each monomer contains **2 functional groups**
   3. One monomer has **2 alcohol groups**
   4. One monomer has **2 carboxylic groups**

YEAR 11 CYCLE 1 PHYSICS

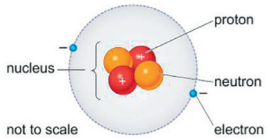
KEY VOCABULARY

1. **Background radiation:** is the radiation that we are constantly exposed to.
2. **Becquerel's (Bq):** is the unit of activity of a radioactive isotope.
3. **Contamination:** If radioactive particles enter body or get on skin.
4. **Count rate:** the number of alpha or beta particles or gamma rays detected by a Geiger-Miller tube in a certain time.
5. **Daughter nucleus:** the nucleus produced when an unstable nucleus splits in two.
6. **Dose:** the amount received at one time.
7. **Geiger-Muller (GM) tube:** a device used to measure the count rate of radiation.
8. **Ion:** an atom or group of atoms with an electrical charge due to the gain or loss of electrons.
9. **Ionising radiation:** radiation that can cause charged particles (ions) to be formed.
10. **Irradiation:** Exposure to radiation.
11. **Isotope:** two atoms of the same element with the same number of protons but different number of neutrons.
12. **Mutation:** a change to a gene caused by a mistake in copying the DNA base pairs during cell division, or by the effects of radiation or certain chemicals.
13. **Nucleon:** a particle found in the nucleus (neutron or proton).
14. **Radioactive decay:** happens when the nucleus of an atom is unstable and it emits a particle.
15. **Weight:** The force pulling an object downwards. It depends on the mass of the object and the gravitational field strength. The units are newtons (N).

WEEK 1

1. **Structure of the atom:**
2. **An isotope** is where two atoms of the same element have the same number of protons but a different number of neutrons, as a result they have the same atomic number but different mass number.

Subatomic Particle	Relative charge
Proton	+1 (positive)
Neutron	0
Electron	-1 (negative)



3. **Ionisation** is where atoms form ions, due to the loss or gain of electrons.
   a. If electrons are lost **positive ions** are formed.
   a. If electrons are and gained **negative ions** are formed.

WEEK 2

1. **Background radiation** maybe from cosmic rays (from the sun or stars), food and drink, medical equipment and exposure to radon gas.
2. **Types of radiation:**
   a. Alpha α - Helium nucleus, blocked by paper.
   b. Beta β - High energy electron, blocked by 3mm aluminium.
   c. Gamma γ - Part of EM spectrum, blocked by several m of concrete or lead**.**

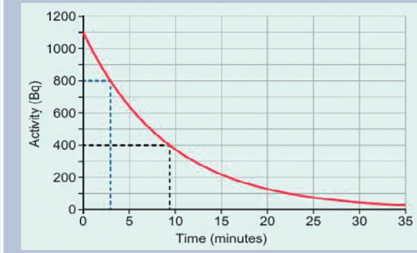
Subatomic Particle		Mass Number	Atomic Number
α	2 protons 2 neutrons emitted	↑4	↓2
ß-	Neutron becomes a proton and an electron is emitted	No change	↑1
ß+	Proton becomes a neutron and a positron is emitted	No change	↓1

WEEK 3

1. **Nuclear equations show the products formed when a substance decays. The mass numbers on either side of the equation must always be equal.**

$$^{226}_{88}Ra \rightarrow {}^{4}_{2}He + {}^{222}_{86}Rn \qquad {}^{131}_{53}I \rightarrow {}^{0}_{-1}e + {}^{131}_{54}Xe$$

2. **Half-life: The time it takes for half of the un-decayed nuclei to decay by half.**



WEEK 4

1. Using Radiation
   a. **Irradiation** can be used to preserve fruit and to sterilise surgical instruments.
   b. **Radioactive isotopes** can be used as tracers (e.g. to detect leaks in water pipes).
   c. Other uses include: checking thickness of paper and in smoke alarms.
2. **Dangers of Radiation**
   a. Large amounts of ionising radiation can cause tissue damage **(radiation burns).**
   b. Small amounts of ionising radiation over a long time can damage **DNA** inside a cell.
   c. This damage is called a **mutation** and may cause cancer.

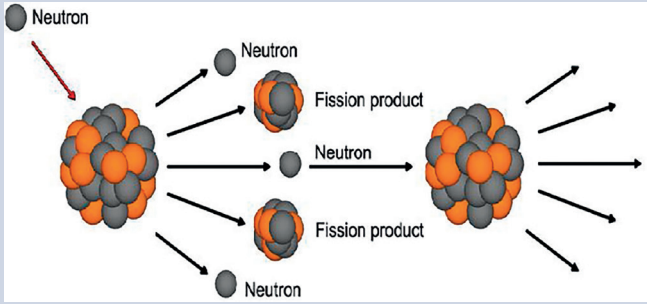
YEAR 11 CYCLE 1 PHYSICS

WEEK 5

1. **1. Uses of radiation in medicine:**
   a. **Tracers** (a gamma source) is given to patient and then located using gamma cameras.
   b. Radioactive glucose is used to detect fast growing cancer cells.
   c. PET scans detect activity of the brain using radioactive isotopes.
2. Treating cancer:
   a. **Internal radiotherapy** - beta emitter placed inside tumour or nearby. Doesn't always need surgery but patient stays alone in room while source is in place.
   b. **External radiotherapy** - beams of gamma rays, x-rays or protons directed at tumour from outside body. Lots of low strength beams can be directed at tumour minimising damage to surrounding tissue.

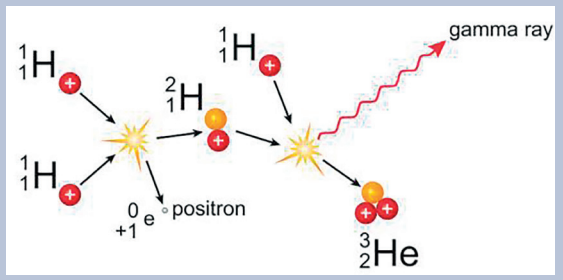
WEEK 6

1. **Nuclear fission** is when large nuclei break down to form smaller nuclei and release energy. This can trigger a **chain reaction,** which if uncontrolled forms an atomic bomb. However controlled can be used in nuclear power stations.
2. In a nuclear reactor the fuel is made into **fuel rods** and inserted into holes in a material called a **moderator,** which slows the neutrons down.



WEEK 7

1. **Nuclear fusion** is when small nuclei combine together to form larger ones.
   a. The mass of the new nucleus formed is slightly less than the total masses of the two smaller nuclei.
   b. Lost mass is converted into **energy.**
   c. Fusion reactions happen in **stars** (hydrogen nuclei combine to form helium nuclei).



WEEK 8

1. **Structure of the Solar System.**
   a. The Sun, the Earth's **star**, is the largest object in the Solar System. The Sun's huge gravitational field keeps many other objects - planets, dwarf planets, asteroids and comets in orbit around it.
   b. There are 8 **planets** in our Solar System: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.
   c. Moons are natural **satellites** that orbit a planet.
   d. Dwarf planets - the Solar System contains hundreds of dwarf planets, including Pluto.
   e. Asteroids - these orbit the Sun in highly **elliptical** orbits, are made of metals and rocky material.
   f. Comets are similar to asteroids, but are made of rocky material, dust and ice.

WEEK 9

1. **Life cycle of a star.**
   a. The Sun is currently a **main sequence** star and will remain so for another 4-5 billion years.
   b. All stars begin life in the same way. A cloud of dust and gas, also known as a **nebula**, becomes a **protostar,** which goes on to become a **main sequence** star. Following this, stars develop in different ways depending on their size.
   c. Stars that are far greater in mass than the Sun follow the path: red super giant star -> **supernova** -> neutron star, or a black hole (depending on size).
   d. Stars that are about the same mass as the Sun follow the path: red giant star > white dwarf star - black dwarf star.

WEEK 10

1. **The Big Bang theory of the Universe.**
   a. According to the **Big Bang** theory, about 13.8 billion years ago, the whole Universe was a very small, extremely hot and dense region. From this tiny point, the whole Universe expanded outwards.
   b. Red shift data provides evidence that the Universe, including space itself, is expanding.
   c. Astronomers have discovered that, in general, the further away a galaxy is, the more **red shifted** its light is. This means that the further away the galaxies are, the faster they are moving.
   d. Astronomers have also discovered a **cosmic microwave background radiation (CMBR).** This is the remains of the thermal energy from the Big Bang.

YEAR 11 CYCLE 1 - HEALTH AND SOCIAL CARE: Component 3 Health and wellbeing

Learning Aim A: Physical and lifestyle factors

How can factors such as health and lifestyle choices affect us? Understanding these factors is essential knowledge for your component 3 Health and Social Care exam.

WEEK 1 and 2: Health and wellbeing

Not just the absence of disease but a holistic attitude:

1. **Physical** - healthy body & diet, sleep, shelter and personal hygiene.
2. **Intellectual** Healthy brain, learn new knowledge, communicate & solve problems.
3. **Emotional** - Security, express & deal with emotions, self-concept.
4. **Social** - friendships and relationships.

Ill Health

A physical factor which can have a negative effect on health & wellbeing.

1. **Acute** - Illness starts quickly, lasts fora short period of time. Usually cured e.g. flu.
2. **Chronic** - Comes on more slowly, lasts a long time. Usually treated but not cured e.g. diabetes.

WEEK 3 and 4: Genetic Inheritance

Genes inherited from both parents:

1. **Inherited characteristics** - height, eye colour, hair colour.
2. **Inherited conditions** - Some alleles (genes) can be faulty & pass on conditions.

   Dominant condition - One parent passes faulty allele on e.g. Huntington's.

   Recessive condition - Both parents pass faulty allele on e.g. Cystic fibrosis.
3. **Genetic predisposition** - Some people are more likely to develop a condition due to genetic makeup i.e. heart disease.

WEEK 5 and 6: Diet - The balance of foods a person eats

1. **Foods to avoid**

   Salt - raises blood pressure

   Saturated fat - raises cholesterol, heart disease

   Sugar - rots teeth, high in kcals (energy)

   Water is important to stay hydrated

Section	Nutrient	Needed for
Starchy foods	Carbohydrates (fibre if wholemeal)	Carbohydrates - Provides energy Fibre – Digestive system/prevents constipation
Fruit & vegetables	Vitamins Fibre	Vitamins - Keep the body healthy Fibre – Digestive system/prevents constipation
Meat, fish, eggs, beans	Protein	Growth and repair of cells and muscles
Dairy	Calcium	Strong bones and teeth
Oils	Unsaturated fats	Reduces cholesterol, Keeps the body warm, Protects organs

WEEK 7: Physical Activity

1. **Exercise types** - Gentle e.g. walking/Moderate e.g. light jog/ vigorous e.g. football.
2. **How much?** - Adult: approx. 150 mins moderate exercise per week.
3. **Exercise Benefits** - lowers BMI, strengthen bones & muscle. Better memory & thinking skills. Increases confidence and relieves stress. Social interaction and teamwork.
4. **Lack of exercise** - Stiff joints, Poor stamina/strength, Obesity, Stroke, Heart disease and Osteoporosis.

WEEK 8: Personal Hygiene

1. **Good personal hygiene** - Prevents spread of infection/Improves self-concept/ Washing/Brushing and washing hair/Brushing teeth/ Clean clothes.
2. **Effect on PIES of poor hygiene** - **Physical** - Catching & spreading disease, Poor body odour, poor oral hygiene / **Intellectual** - Reduction of opportunities / **Emotional** - poor self-concept, bullied / **Social** - social isolation, loss of friendship.

WEEK 9 & 10: Substance Misuse

1. **Alcohol** - Men & women should drink less than 14 units/week, 1 unit = one single spirit, 1.5 units = 1 pint, 1 small glass of wine. Can increase risk of addiction & cancers.
2. **Smoking & Nicotine** - Cigarettes contain nicotine (addictive drug), tar, carbon dioxide & soot which are all harmful. People smoke to relieve stress, peer pressure, or are unable to quit.
3. **Drugs - Legal**

   Prescription misuse - when people become addicted to them, take excess, or take someone else's.
4. **Drugs - Illegal**

   Stimulants - Increase alertness i.e. Cocaine.
   Depressants - calm, relax the body i.e. Cannabis.
   Hallucinogens - cause hallucinations i.e. LSD.

YEAR 11 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 Secondary 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 11 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:

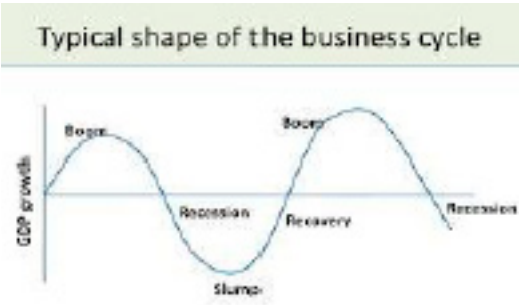
- Copyright
- Patents
- Product safety
- Health and safety
- Employment legislation
- Permission

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 11 CYCLE 1 - COMPUTER SCIENCE

WEEK 1: Systems Architecture

CPU - Performs the Fetch, Decode, Execute Cycle, performs calculations and sends and receives data, instructions & addresses to / from RAM.

Cache - Frequently used processes stored in cache rather than the RAM.

Cores - The more cores, the faster your PC. Programs can be designed for multiple cores but there is still only one Control Unit (CU).

Registers - Temporarily holds data.

ALU - Performs the mathematical calculations.

WEEK 2: Primary Storage

Embedded System -A device which performs one specific task.

RAM - Volatile, large, Read and Write.

ROM - Non-Volatile, small, Read Only.

RAM - Temporarily holds the operating system and other open programs' data.

ROM - Stores the initial start up instructions for the computer (Bootstrap).

Virtual Memory - When the RAM is filled, secondary storage can be used as well.

WEEK 3: Secondary Storage

Secondary Storage - Is needed for longer term / non-volatile storage of data. Capacity- bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte.

Optical - Pits and lands in CDs, DVDs and Blu Ray.

Magnetic - polarised sections on a metal disc e.g. HDD, Magnetic Tape, Floppy Disc.

Solid State - Gates are flashed with electricity to make 1 and Os e.g. Pen Drive, SSD, SD Card etc.

WEEK 4: Data Representation

1000 bytes ~ 1 kilobyte (KB)

1000 kilobytes ~ 1 megabyte (MB)

1000 megabytes ~ 1 gigabyte (GB)

1000 gigabytes ~ 1 terabyte (TB)

1000 terabytes ~ 1 petabyte (PB)

Binary = base 2
= on or off
= 1 or 0

Denary = base 10
= 'normal' numbers
= 0,1,2,3,4,5,6,7,8,9

WEEK 5: Wired and Wireless Networks

LAN - Computers connected over small geographical areas.

WAN - Computers connected over large geographical areas.

Bandwidth - The amount of data that can be transferred.

Server - a device that provides services for other devices.

Client - receives information from a central server.

P2P - computers connect directly to each other.

WEEK 6: Network Hardware

NIC - Network Interface Card allows computers to connect to wired networks via CATS copper cables.

WAP - Wireless Access Points allow computers to connect to wireless networks.

Switches - Used on LANs to divide the bandwidth up between users/devices equitably.

Routers - Used on WANs to divide the bandwidth up between users/devices equitably.

Cables - the cables in a network can be twisted pair cables, coaxial cables or fibre optic cables.

WEEK 7: Network Topologies, Protocols and Layers

Star - if the central switch fails, the whole network fails.

Mesh - Each device is connected to every other device so they can send data the fastest route. Protocols - are the rules for how devices communicate and transmit data across a network.

Layers - network protocols are divided into layers so that protocols with similar functions are grouped together.

WEEK 8: Network Security

Malware - malicious software intended to cause harm.

Penetration Testing - Organisations employ professionals to try and hack their network.

User Access Levels - Different employees have different levels of access to programs, websites and data.

Encryption - data is scrambled so that it cannot be understood if intercepted. It can only be decrypted with a key.

WEEK 9: Systems Software

Operating Systems - runs the computer, manages the hardware and applications.

Device Drivers - communicate with the peripherals and internal hardware.

User Interface - allows the user to interact with the device.

Multitasking - the operating system manages the programs.

User Accounts - the operating system manages the accounts of the different users.

WEEK 10: Ethical, Legal, cultural and environmental impacts of technology

Ethics - what is considered right and wrong by society.

Legal issues - computer use has brought new concerns and crimes.

Cultural issues - matters that influence the nature and culture of society.

Environmental issues - the manufacturing and use of computers has had a negative impact on the environment.

Privacy issues - once data is entered into a computer it can easily be copied or transmitted.