Knowledge Organiser

Year 10 - OPTIONS

Cycle 1

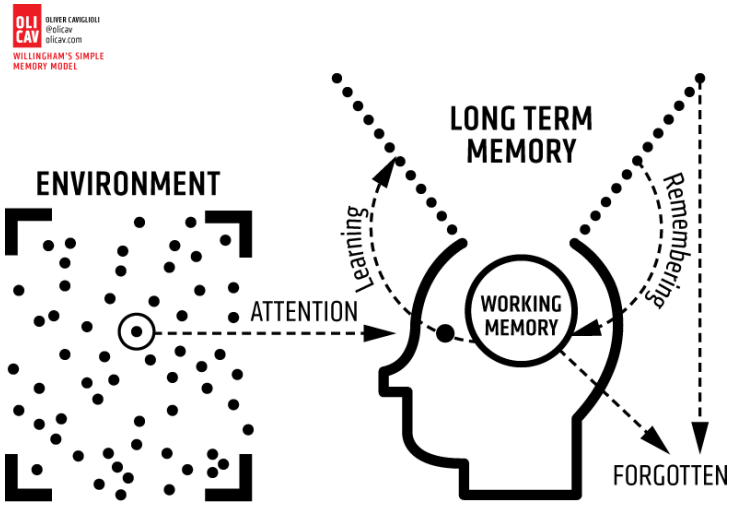
Name:

Inspiring Excellence

Using your Knowledge Organiser for homework

- Your Knowledge Organiser contains the essential knowledge that every student must know.
- Regular use of the Knowledge Organiser helps you to recap, revise and revisit what you have learnt in lessons.
- The aim is to help remember this knowledge in the long term and to help strengthen your memory
- You will use the Knowledge Organiser to help learn during homework.
- You will be assessed on the knowledge from your Knowledge Organiser; the more you revisit information the more likely it will be remembered for lessons, assessments and exams.

- For each homework you will be asked to look at a particular section of your Knowledge Organiser.
- Make sure you follow the homework timetable below so that you do the right homework for the right subjects each day.
- Each day (Monday to Friday) you will study 2 subjects for 30 minutes each.
- All Knowledge Organiser homework is completed in your blue Knowledge Workbooks
- All Maths and English homework is completed on SPARX and must be 100% completed each week.



Homework Timetable Year 10

	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	Science	Geog/History	Maths	Option Block F	Maths
Subject 2	English	Option Block E	English	Science	Option Block G

How to use your Knowledge Organiser

In your blue knowledge book you will always write the date, subject heading and ensure that they are underlined with a ruler.

Task 1: Questions

Where a subject includes questions to answer, you must answer these in your blue book. This is the main task to do as a minimum. If you have additional time, or where there are no questions, then do the following Tasks 2-4

Task 2: The Cover – Write – Check method

1. Study the relevant section of your Knowledge Organiser for several minutes.
2. Cover the Knowledge Organiser.
3. In your blue book, write out what you can remember.
4. Check the Knowledge Organiser to see if you got it right.
5. Correct any mistakes in purple pen.
6. Repeat the process – even if you got it 100% correct.
7. Complete sections that you have previously studied using the same process.

Task 3: Free recall

1. Pick a section of the Knowledge Organiser you have studied recently.
2. Without looking at the Knowledge Organiser write down everything you can remember about the topic.
3. Check the Knowledge Organiser to see how much you got right.
4. Correct any mistakes and add any missing parts in purple pen.

Task 4: Elaboration

1. Once you have completed the Cover – Write – Check method, add any additional details you can to your notes.
2. Remember your Knowledge Organiser only contains the core knowledge, there is much to learn beyond it so practise adding more detail when you can.

Year 10 Options Cycle 1

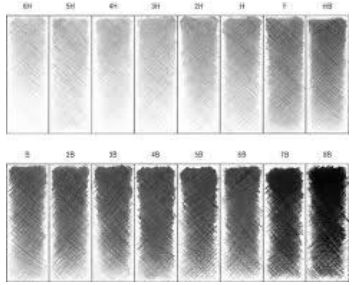
Knowledge Organiser Contents Page

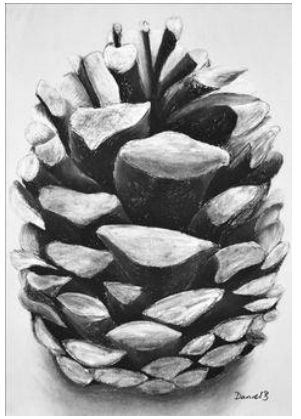
A. Visual Elements Keywords

Line	Line is the path left by a moving point. A line can be horizontal, diagonal or curved and can also change length.
Shape	A shape is an area enclosed by a line. Shapes can be geometric or irregular.
Form	Form is a three dimensional shape, such as a cube, sphere or cone.
Tone	This refers to the lightness or darkness of something. This could be a shade, or how dark or light a colour appears.
Texture	This is to do with the surface quality of something. There are two types of texture: Actual texture really exists, so you can feel it or touch it; Visual texture is created using marks to represent actual texture.
Pattern	A design that is created by repeating lines, shapes, tones or colours.
Colour	Red, yellow and blue are primary colours, which means they can't be mixed using any other colours.

B. Key Knowledge 1: USING TONE to CREATE 3D EFFECT

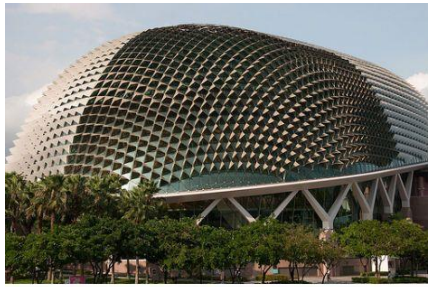
- Create different tones by using different grades of pencil
- HB means 'hard black' this is a standard pencil.
- H pencils are **lighter** as the number gets higher
- B pencils are **darker** as the number gets higher
- You can use pencils to make a variety of marks and tones by how much pressure you apply when using them





E. Expert Modelling: Designers inspired by nature

Zaha Hadid



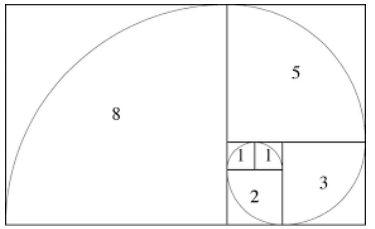
Heatherwick Studio

What Visual Elements can you see in this work?

CREATIVE ARTS
GCSE 3D DESIGN YEAR 10 – BIOMIMICRY

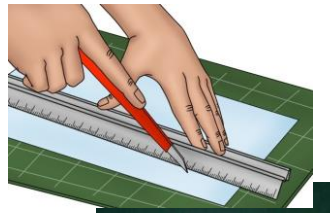
C. Key Knowledge 2: FIBONACCI SEQUENCE

The Fibonacci sequence follows the rule that each number is the sum of the two preceding ones, starting from 0 and 1. This is often found in nature as a growth pattern.



D. Key Knowledge 3: 3D Modelling

Use a scalpel and safety ruler to cut intricate shapes. Experiment with modelling in a variety of different found materials: corrugated card, toothpicks, lollipop sticks, ear buds, newspaper, scrap wood.



F. WIDER READING / THINKING

Amazing buildings inspired by nature

https://www.youtube.com/watch?v=KhSDH7-kyGU

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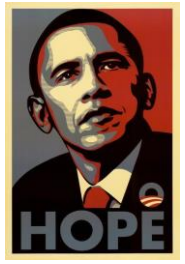
B. Key Knowledge 1: tick once mastered

- ❑ To know how to use a gridded scale to help you draw in scale and in proportion
- ❑ To understand how to paint the wide range of tones present in our skin
- ❑ monochromatic colours are all the colours in a single hue ranging from the lightest to the darkest.
- ❑ Understand basic photoshop skills to manipulate our own photographs
- ❑ To understand the process of lino and dry point printing
- ❑ A continual line drawing means you can take your pencil off of the paper, and blind line drawing means you cant look at the page.

E. Expert Modelling:

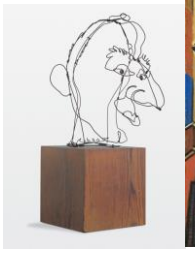
Mark Powell

Lucian Freud



Shepard Fairy

Miguel Ángel Belinchón



Alexander Calder

Pablo Picasso

Diane Komater

Francoise Nielly

What Visual Elements can you see in this work?

GCSE ART AND DESIGN. YEAR 10 – PORTRAITURE

Threshold Concepts:

1. Artists make marks, drawing our attention
2. Art communicates, in every sense
6. Art engages head, hands and heart

C. Key Knowledge 2: tick once you have used these colour relationships in a piece of work

- ❑ Complimentary colours sit opposite each other on the colour wheel. Split complimentary are the colours either side of on of the two complimentary colours.
- ❑ Monochromatic colours are the different tones within a hue from light to dark.
- ❑ Analogous colours are three that sit next to each other on the colour wheel.
- ❑ You need to use all the primary colours while mixing flesh tones to ensure you record all the colours present when

D. Key Knowledge 3

why is mark making important when working with lino?

Why is contrast important when you create art with this method?

How does this medium help the artist reflect the people in his portraits?

F. Wider thinking / further reading:

https://www.npg.org.uk/whatson/self/home/

check out these helpful videos and reading on portraiture!

Knowledge organiser – Enterprise – Component 3 –

Marketing and Finance for Enterprise

Enterprise use promotion to communicate with their current and potential customers. This is an important part of how they attract business.

Learning Aim A

Promotional Mix

The range of techniques and mediums an enterprise could use to communicate with potential customers.

Sales Promotions

Coupons A token in the packaging or a product which can be collected or traded in for a discount or gift.
Discounts Money taken off the original price of a product - e.g. 10% off.
BOGOF Buy one get one free, exactly what it says - get two products for the price of one - effectively a 50% discount
Loyalty cards Rewards for repeat custom. The customer builds up points/stamps on a card which can be exchanged for goods.
Free samples Encouraging people to try a new product by giving small samples in the hope that people will be tempted to buy the product.
Competitions Giving customers the chance to win a prize when they buy a product - e.g. a ticket inside the packaging with a chance of an instant prize

Personal Selling

Purpose – contacting the customer directly to sell a product/service. Pitch is adapted to suit the customer.

Method of selling	Advantages	Disadvantages
Phone	Direct interaction, Misconceptions cleared up quickly,	Can't see facial expressions Phone calls may annoy customer
Email	Lots of detail can be included Able to include images, videos, attachments and links	Email could go to spam or junk folder
Video Conferencing/Facetime	Can see facial expressions Can do live demonstrations and send information while talking.	Can be tricky to arrange a suitable time Reliant on connection speeds
Face to Face	Can see facial expressions/body language Misconceptions cleared up quickly,	Can be difficult to set up meeting and time consuming

Advertising

Purpose – Inform the public about your product/service.
- Persuade people to buy your product/service

Method of Advertising	Examples	Advantages	Disadvantages
1. Print	Posters, Flyers, Newspapers, Magazines, Billboards	Seen by lots of people +Can show images of the product + Can give detailed information	Not targeted at specific customers - Might be ignored or thrown away - Have to repeat the advertising - flyers and newspaper adverts are not there for long
2. Digital	Websites, Emails, Texts	+ Available 24/7 + Emails and texts can be targeted at specific + Can be linked to people's Internet searches	Might be ignored or go straight to spam folders - Customers have to have the right technology to receive the message - Could annoy customers rather than attract them
3. Audio	Radio adverts, Spotify adverts	+ Relatively low cost + Could get a celebrity voice to promote the product	- Not targeted at specific customers - Lower audiences for radio these days
4. Video	TV adverts, YouTube videos	+ You can show the product in action + High impact + Can get celebrity endorsements to attract customers	Not targeted at specific customers - Lots of people try to avoid the adverts - TV adverts can be VERY expensive

Types of market

B2C – Business to consumer – Any market where the customer buys directly from the business.

Consumer decisions are based on:

- Value for money
- Features of the product
- Brand Loyalty
- Quality
- Emotions (e.g. Impulse buying)

B2B – Business to business – e.g. Walkers sell their crisps to supermarkets

They use **PUSH** strategies e.g. offering a discount to supermarkets if they buy in bulk.

AND

PULL strategies e.g. TV marketing campaign to raise demand so that people are asking for the product.

Decisions are based on:

- Saving time,
- Improving revenue and profits,
- lowering costs,
- improving efficiency

Market segmentation - dividing the customers up into different groups so that you can target your marketing at specific people.	
Demographic	Dividing the customers up by age, gender, income, social class, level of education, religion, ethnicity or family size
Geographic	Different locations have different needs - e.g. Hot climate vs cold climate. Targeting customers based on where they live.
Psychographic	Targeting people based on their attitudes, lifestyle and personality. e.g. people who are interested in "Green" environmentally friendly products or "Luxury" chocolate.
Behavioural	Targeting customers based on how they interact with a product. How often they use it, brand loyalty (e.g. people who only wear Nike) and the desired benefits of the product (e.g. choosing a phone because of the features you want to use)

Direct Marketing

Contacting the customer directly to try to sell them something Purpose: To build a relationship with customers To introduce new products to existing customers The business must have the customer contact details already

Methods	**What does this mean?**
Direct Mail	Brochures, flyers and letters sent directly to the customers
Telemarketing	Phoning customers to tell them about the latest deals or new products.
Digital	E-Mails sent directly to existing customers - can include photos, attachments, links etc.
Catalogues	. Sending catalogues of products directly to the customers - including photos, descriptions and prices for a large range of products.
Magazines	Some businesses produce in-house magazines (e.g. Sainsbury's) showing off their products and stories related to their products.

Public Relations (PR)

Promoting a business by putting information into the media

Purpose: To encourage positive publicity, to raise awareness of a brand

Advantages	**Disadvantages**
1. Can reach very large audiences **2.** Can be free! - e.g. an interview with a newspaper **3.** Boosts the reputation of the company **4.** Increases awareness of the company and boosts sales	**1.** Can't really assess the impact on sales directly **2.** A story could be twisted to become a negative story by a journalist **3.** You can't guarantee that the story will get out it depends on other news on the day

Image
Peoples opinions of goods or services and what they associate with it.

Budget.
The amount of money designated for a specific activity or period of time.

Consumer
People who buy and use goods and services.

Choice of Promotion

Different businesses will choose different types of promotion

Small Businesses	**Large Businesses**
1. Small Budgets 2. Advertise locally 3. Use more free / cheap methods 4. Often done by the owner 5. Can't afford to run promotions all the time	1. Huge budgets 2. Advertise nationally / internationally 3. Large scale campaigns 4. Often have whole departments dedicated to marketing 5. Can attract celebrities to endorse the products

Knowledge organiser – Enterprise – Component 1 – Exploring enterprises

We often hear the word "enterprise" and may generally know what it means. However, just as people do, enterprises have characteristics that define them.

SCAN ME

Learning Aim - A

Attracting customers and retaining them.
Enterprises need to make sure they attract customers and retain them by meeting their needs and keeping them happy.
Smaller enterprises can compete with larger ones by using online methods such as:

- Social media promotions
- Newsletters
- Online comments/feedback
- Loyalty cards or credits

Customer service

As a customer you always hope to receive good customer service. When you are buying goods or a service, it is reassuring to feel that those selling them know their product and are as helpful as possible.
Having good customer service:

- **Attracts** new customers to try their goods/services.
- **Encourages** customers to come back and buy again.
- Encourages customers to be **loyal** and not shop elsewhere.
- **Happy customers** will share their positive experiences, therefore, improving the reputation of the enterprise.

Competition

Nearly all enterprises have to compete with each other because their goods and services are not unique. Other enterprises are called competition and customers need to have a reason to go to one enterprise over another.
Each enterprise needs to:

- Decide on the features/characteristics that make its goods/services different.
- Ensure customers are aware of what makes it different

Micro Enterprise

Consists of **1-9 employees**. Run by the owner who would be the sole owner, profit making or not-for-profit.

Small enterprise

Consists of **10 – 49 employees** and are often limited companies. Owners are liable for debts to the value of their investment.

Creativity and Innovation

SME's can be **flexible** and can change and adapt what they do to ensure customers are happy by obtaining feedback from customers, listen to the feedback and act on it.

Top be creative and innovative enterprises must:

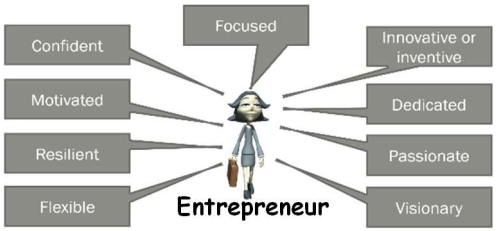
- Fill gaps in the market for goods and services
- Develop new ideas

Types of ownership

Sole trader – keep all profits but liable for all debts/losses. They have unlimited liability.
Partnership – Two or more owners who also have unlimited liability. Responsibilities are shared as well as profits and debts.
Ltd (Limited liability) – Have boards of directors, owners don't always run them. They may invest and allow others to run them. They will receive payments from their shares (investment)

Medium enterprise

Consists of **50 – 249 employees**, therefore, there are more roles for employees such as production, management and finance. They tend to me limited (Ltd) companies.



Objectives

Specific
Measurable
Achievable
Realistic
Time-related

Purpose of enterprise

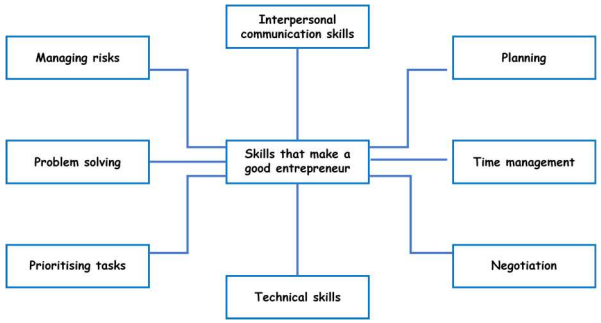
The purpose can have a big influence on how it is run and the decisions made.
The aims of an enterprise are the goals it wants to achieve, generally statements such as:

- Making a profit
- Surviving (time frame0
- Expanding
- Providing voluntary/charitable services
- Maximising sales
- Environmentally friendly
- Ethical

Why enterprises fail

Most enterprises are well thought but some fail because they:

- Expand too quickly
- Don't listen to customers
- Don't update/change to meet customer needs
- Don't offer anything unique
- Don't plan for growth
- Haven't the cash to buy products in advance



Location

Online
Office
Persons home
Physical store
Customers home

Unit 1: Patterns of Development This unit aims to develop your knowledge and understanding of child development. You will learn about five different areas of development – physical, cognitive, communication and language, emotional and social – and how these areas are linked. In each of these five areas there are expected patterns of development based on the norms for different ages. These developmental norms are sometimes referred to as milestones. They are useful for several reasons. Early years professionals and health professionals monitor children's progress in achieving these milestones. While it is usual for children to have different rates of progress, it is important for professionals to know when children are showing unusual progress or patterns in their development. This sometimes means that a child needs additional support. Knowing the expected patterns of development and associated milestones for each area of development also helps adults to anticipate the next stage of a child's development in each area. You will investigate how adults in early years settings can support children's development. As part of your course, you will learn about the expected patterns of development, and if you choose to work with children this will help you plan activities and understand why children are doing certain things.

Week 1 (Learning Aim A1) Growth and development	Growth • Key aspects of children's growth are changes to physical size, the skeleton, muscles and the brain • Children's height, weight and head circumference are measured to monitor growth, ensuring it is consistent with expected patterns, and to highlight potential issues at an early stage • Children's growth is plotted on centile charts. • Growth is determined by heredity, hormones, nutrition, sleep, illness and emotional influences. Development Child development is defined as the increasing acquisition of skills and knowledge gained by a child. • Development should be viewed holistically as children acquire skills at varying rates in different areas of development. • Developmental norms are sometimes called milestones. They have been determined by looking at the data of thousands of children and considering the average or 'typical' milestones. Using these norms or milestones helps to understand the patterns of development. Development can be broken down into the following five areas: • Gross motor and fine motor physical development is to do with movement – gross or large movement of limbs, developing locomotion, balance and coordination, and fine manipulative movement of fingers developing hand–eye coordination. • Cognitive development is the way children develop thought processes, perception, memory, imagination and problem-solving, and are able to increase their knowledge and understanding of their environment • Communication and language development is the way children communicate and develop speech, including reading and writing. • Emotional and behavioural development is how children develop feelings and express their emotions through behaviour and includes the development of self-concept and self-esteem. • Social development includes how children develop friendships with peers and cooperate with others and become aware of role models.	**Key Words** Growth Centile charts Heredity Hormones Nutrition Acquisition Holistically Developmental norms Milestones Gross motor skills Fine motor skills Cognitive development Communication and language development Emotional development Self-concept Self-esteem Social Development Role Models
Week 2 (Learning Aim A2) The links between areas of development and how each area may complement each other	Development should be viewed holistically as there are many ways in which areas of development relate to each other Language development helps children to understand new concepts and also to play with other children. Children with a language delay may become frustrated and this might affect their behaviour and also their ability to play with others. • Physical development helps children move to explore their surroundings, learn from new experiences and develop confidence in their abilities. • Cognitive and language development combine to help children express their thoughts and to develop reading and writing and problem-solving skills. • Emotional development helps children to develop secure attachments, enabling positive social relationships and friendships to evolve • Social development helps children to develop language through playing with others and interacting with adults.	**Key Words** Concepts Problem solving skills Secure attachments
Weeks 3 - 6 (Learning Aim B1)	Knowledge of the usual sequence in physical (gross and fine motor skills), cognitive, communication and language, emotional and social development **Birth up to twelve months** Gross motor development:	

Characteristics of children's development	Newborns are born with reflexes – sucking, rooting, startling, grasping – which help them survive. Movements are uncontrolled and uncoordinated: • at three months able to lift up head and chest when on their stomachs and bring hands together over body • at six months can roll over from back to front • at nine months can sit unsupported and is usually mobile by crawling or rolling, may pull up to stand alone and walk by holding on to furniture • at twelve months pulls up to stand, stands alone, walks holding on to furniture. Fine motor development: • no coordinated movement but newborns will grasp things put into their hands as a reflex action • at three months can watch their hands and hold a rattle for a moment • at six months can reach for a toy and move a toy from one hand to the other • at nine months can use a pincer grasp (index finger and thumb) to grasp objects, can deliberately release objects by dropping them • at twelve months can use pincer grasp to pick up small objects, points using index finger. Cognitive development: • at one month 'freezes' if hears a sound played softly • at three months can recognise familiar routines, alert and follows movement with eyes if objects are close • at six months can explore objects by putting in mouth, recognises voices • at eight or nine months can look for dropped objects and objects that they see being hidden • at twelve months enjoys throwing toys to the ground and watching their descent, learns by trying things out and repeating if successful. This approach to learning is called 'trial and error'. Communication and language development: • at one month can turn head to adult voice, at six weeks begins to coo • at three months smiles when hears a familiar voice • at six months makes short babbling sounds, such as 'da' and 'ba • at nine months understands 'no', vocalises in long strings of babbling • at twelve months knows own name and understands simple instructions. Emotional and social development: • at one month can focus on human faces with interest • at six weeks can smile • at three months enjoys being held and forms indiscriminate attachments • at six months can recognise and respond to emotions in others • from seven to eight months can form specific attachments and show wariness of strangers • from eight months develops specific attachments and imitates actions of others, such as clapping • from eight months experiences separation anxiety from primary carer(s). **Twelve months up to three years** Gross motor development: • at fifteen months can crawl upstairs and may walk hesitantly • at eighteen months can walk unaided, can walk upstairs with help and can squat to pick up toys • at two years can run, climb onto furniture and use sit-and-ride toys • at two and a half years can kick a large ball and can jump with two feet together from a low step • at three years able to run forwards and backwards, steer and pedal a tricycle, walk upstairs with alternate feet and throw a large ball. Fine motor development: • at fifteen months pincer grasp is precise, uses palmar grasp to hold crayons • at eighteen months can build a tower of three bricks, can feed self with a spoon and scribble using a crayon in palmar grasp • at two years can draw dots and circles, can put on shoes and fasten with Velcro® but not buckles and laces • at two and a half years starts to show a hand preference, can pull down items of clothing and starting to develop tripod grasp • at three years can use tripod grasp, draw a circle, hand preference is established for most tasks.

Cognitive development:
- at fifteen months explores objects by sight and sound
- at eighteen months very curious to explore environment, remembers where things belong
- at two years recognises self in mirror, can remember past experiences
- at two and a half years recognises self in photographs, with help can complete simple puzzles
- at three years understands the difference between past and present, can complete simple puzzles.

Communication and language development:
- at fifteen months communicates by pointing and vocalising, has up to six words
- at eighteen months has around 15 words, able to communicate wishes, understands simple requests
- at two years has up to 50 words, able to join words, enjoys looking at books
- at two and a half years has around 200 words, starting to use simple sentences, asks questions, uses personal pronouns, plurals and negatives
- at three years speech is clear to anyone unfamiliar with child, enjoys books and turns pages.

Emotional and social development:
- at eighteen months emotionally dependent on parents and key persons, plays alone but enjoys being near adults and siblings, insistent on immediate attention to needs and can copy adult actions
- at two years unable to wait for needs to be met, may be distracted from tantrums, plays in parallel with other children but unable to share toys
- at two and a half years plays alongside other children and engages in onlooker play, very dependent on adults and jealous of other children gaining attention, responds well to adult attention and praise and has tantrums when frustrated
- at three years finds it easier to wait, starting to take turns and share, enjoys being with other children and will comfort another child.

Three years up to five years

Gross motor development:
- from three to four years can hop on one foot, walk along a line, aim and throw a ball and kick it with force, ride a tricycle using pedals
- from four to five years can run avoiding obstacles, skip with a rope, throw a large ball to partner and catch it.

Fine motor development:
- from three to four years can button and unbutton clothes, use scissors to cut out simple shapes, draw a person with head, trunk and legs, eat with a knife and fork, thread beads to make a necklace
- from four to five years can form letters, write own name and colour in pictures.

Cognitive development:
- from three to four years can recognise and name primary colours, understands what is meant by 'more', can tell whether an object is heavy or light, arranges objects into categories, makes a connection between people and events
- from four to five years can count accurately up to 10, can add two sets of objects together, can match equal sets, understands the need for rules, names the time of day associated with activities.

Communication and language development:
- from three to four years, speech can be easily understood, although some words may be incorrect, uses questions and by four years language is fluent, with some speech immaturities
- from four to five years can count accurately up to 10, uses complex sentences with words such as 'because', can talk about what has happened and what might happen, uses language to argue and answer back.

Emotional and social development:
- from three to four years can cope with separation from primary carer with someone they know, is beginning to play cooperatively and show clear friendship preferences, and plays with others
- from four to five years can work out what other people may be thinking, which helps them to negotiate with others, able to understand the need for rules, develops close friendships develop, behaviour mostly cooperative and separates more easily from parents.

	Five years up to eight years Gross motor development: • from five to eight years can hop, skip and jump confidently, can swerve and dodge when running, balance on a beam, ride a bicycle and use roller skates • coordination is more proficient, allowing for tasks that require coordinated movements including improved ball skills, swimming activities, hopscotch. Fine motor development: • from five to eight years can tie and untie shoelaces, and accurately cut out shapes • from six years able to thread a large-eyed needle and sew large stitches, has good control over pencils and paintbrushes, allowing for more detailed drawings and clear handwriting. Cognitive development: • from five to eight years can recognise numerals up to 100, do simple calculations, show simple reasoning and be reasoned with • from seven years can 'conserve' quantities and numbers, complete a simple maze, is starting to tell the time, understands the need for and uses rules. Communication and language development: • from five to eight years uses language to reason and explain ideas, understands and enjoys jokes and riddles • uses more complex sentence structures and asks what, when, who, where, how, why questions • from seven years has mastered the basics of reading and writing. Emotional and social development: • from five to six years starts to compare self with others and becomes more aware of the feelings and needs of others • confidence in self may be shaken by 'failure' • from five to seven years has strong friendships, often of the same gender, can understand that others have different viewpoints than them, can read facial expressions of others accurately and recognise what others might be feeling.	
Week 7 (Learning Aim C1) Understand how adults in early years settings can support children's development	Gross motor and fine motor physical development: • meeting children's physical needs by providing a well-ventilated and relaxing sleep area for children to sleep at regular intervals • meeting diet and nutritional needs in accordance with policy and parental wishes • providing opportunities to be outdoors • providing age-appropriate resources and activities that encourage gross and fine motor skills both indoors and outdoors • providing resources and activities that encourage children to touch, feel and explore objects with their senses • providing opportunities for children to meet their physical needs. Cognitive development: • providing objects and games that encourage children to develop their memory and imaginative skills and helping them to think about others • providing age-and stage-appropriate activities and resources that encourage problem-solving skills • providing opportunities for children to visit different places and experience new things • encouraging children to ask questions, helping children to link new experiences to past ones (memory and recall). Communication and language development: • taking time to talk and smiling and maintaining eye contact to encourage listening skills • encouraging speaking and listening skills by using nursery rhymes, picture books, telling stories, reciting rhymes, 'show and tell', and by asking questions such as 'what' 'where' 'who' to encourage speaking • providing role play activities for pretend play • encouraging writing skills by copying their own name and familiar names and words • encouraging creative expression through stories, poetry, dance, drama and making music. Emotional and social development: • encouraging bonding through holding children close, maintaining eye contact, talking in appropriate tone	**Key Words** Bonding Proximity Transitions

	• maintaining proximity as key person, responding to changing behaviour such as clinging, resistance, temper tantrums by helping children express their emotions positively without hurting others • supporting children through appropriate transitions such as moving home, new sibling, change of carer • encouraging confidence and self-esteem, encouraging children to express their feelings through activities and resources, and encouraging children to share and help other peers or other adults • maintaining appropriate proximity to children while allowing them to express themselves freely and safely • encouraging children to develop positive relationships and encouraging children to challenge negative comments and actions from others • helping children to understand their changing emotions and dealing with them positively through discussion or role play • introducing everyday routines to establish security • providing age appropriate play to encourage children to interact with other children, support others and learn to share and take turns • encouraging children to be thoughtful and cooperative with others by praising them and being a positive role model • encouraging children to develop a range of friendships.	

Unit 2: Promoting Children's Learning through Play You will learn that the nature of play is enjoyable and motivating for children of all ages. It is used in early years settings to support children's development. You will come to understand that children at different ages/stages of development have different play needs as this is essential in providing play that ensures that children are sufficiently challenged, are engaged, find play enjoyable and learn new skills.		
Weeks 1 - 2 (Learning Aim A1) Describe how children play at each age range.	**Play from birth up to two years**: • significant time spent playing with adults, e.g. playing close to familiar adults, watching other children playing • focus on moving and touching things, and until around eighteen months putting things in their mouths, e.g. exploring objects and their surrounding environment • games and actions are repeated and remain enjoyable, e.g. knocking down towers of blocks, jack in the box, pushing toy cars down a slope. **Play at two up to five years:** • increasing interest in being with others and from three years starting to actively play with others, e.g. playing alongside other children, starting to take turns in play and beginning to learn to share • play becomes more complex and requires greater gross and fine motor coordination, e.g. balancing on climbing equipment, throwing and kicking balls • talk becomes central to play, especially during construction and imaginative play, e.g. talking through their actions and their experiences during play • children may need adults to play with them and to provide supervision and support, e.g. wanting adult encouragement and reassurance. **Play at five up to eight years:** • begin to increasingly organise and structure their play with minimum adult support, e.g. making decisions about how they want to play and what resources they need • they may introduce their own rules, e.g. making games more challenging, choosing who can join in • play is complex and requires increasing levels of skill, e.g. involving physical challenge and a combination of skills.	**Key Words** Unoccupied play: Young babies looking at things around them ie; mobile Solitary play: Playing alone Parallel play: Playing next to, but not with, other children Looking on Play: Watching other children play Associative play: Playing with other children Co-operative play: Playing together to achieve a goal
Weeks 3-4 (Learning Aim A2) Describe how and why adults support play at different ages to support development	Adults roles:- **Birth up to two years**: • playing with children to help them learn that play with others is enjoyable, e.g. finger rhymes, Humpty Dumpty • choosing items that are safe, e.g. identifying choking hazards, selecting items that are safe if put in the mouth • holding out toys and resources to a child to encourage interest, e.g. rattles, puppets • showing how toys are used to help children play with them, e.g. pop-up toys, stacking blocks, peg and hammer toys, shape sorter. **Two up to five years**: • encouraging children to select resources to develop independence, e.g. easy access, resources put at child's height, asking children to make choices • supervising children to ensure safety, e.g. stopping boisterous behaviour, intervening when children become angry with each other • joining in play with children to show how to take turns, share equipment and be cooperative • setting up play opportunities attractively to encourage children to try them and so learn new skills, e.g. sensory materials, home corner, collage materials. **Five up to eight years**: • allowing children longer periods in which to play with minimum adult supervision in order for children to develop imagination, turn taking and confidence • teaching children how to play games that require logic, or counting to support mathematical skills, e.g. noughts and crosses, board games, chess • providing more challenging opportunities for physical play, e.g. greater height, balance, team games • discussing with children how they might play safely to help them learn to manage risk, e.g. boundary setting, writing rules.	**Key words** Identify - establish or indicate who or what (someone or something) is. Describe - give a detailed account in words of. Explain - make (an idea or situation) clear to someone by including relevant facts or examples. Discuss - write about (a topic) in detail, taking into account different issues or ideas. Assess – judge the ability, or quality of.
Weeks 5-6 (Learning Aim B) Know how play opportunities promote skills in the areas of development and how each play opportunity could	**Birth up to two years**: • physical play provision of equipment to promote fine and gross motor skills, e.g. rattles, baby gym, push and pull toys, stacking beakers • heuristic play – play with collections of objects and everyday materials of different shapes, textures and sizes in a treasure basket for babies until mobile and in containers for toddlers, to promote concentration, imagination and learning about shape, size and texture • games played with an adult – e.g. knocking down stacking beakers whereby babies learn to take turns and make eye contact, hiding toys under a cushion • sensory play – e.g. water, shaving foam, dried pasta, gloop (mixture of cornflour and water) to help concentration, fine motor skills, learning about texture and promotion of confidence • imaginative play with adults – e.g. toy telephones, puppets, toy kitchens • construction play with adults (from nine months) – e.g. stacking beakers, using small wooden bricks, lift up puzzles. **Two up to five years:** • physical play to help children learn coordination and balance, and to develop gross motor movements and learn social skills, e.g. balls, climbing frames, hoops, tricycles • heuristic play, e.g. play with collections of objects and everyday materials of different shapes, textures and sizes to encourage sorting skills and language, and to allow children to discover new objects • simple board games (from three years) , e.g. picture lotto, snap, magnetic fish game to promote turn taking, counting, problem-solving • sensory play, e.g. sand, water, dough to help concentration, fine motor skills, early writing movements, encouraging communication • imaginative play, e.g. dressing-up clothes, home corner, toy cars, toy farm animals	**Key Words** **G,CHIPS** = Games Construction Play Heuristic Play Imaginative Play Physical Play Sensory Play

promote more than one area of children's development	and people, in order for children to develop communication, social skills and imagination • construction play, e.g. wooden blocks, building blocks to encourage turn taking and imagination, and for children to learn about textures, shapes and problem-solving. Five up to eight years: • physical play and games, e.g. climbing frames, scooters, football, skipping – to help children learn co-ordination and balance, and to develop gross motor movements and learn social skills • heuristic play (loose part play), e.g. play with natural and synthetic objects left outdoors for children to find and discover their properties, to support children's cooperation, language, problem-solving and imagination games • games, usually board games with rules, e.g. noughts and crosses, beetle drive, happy families, this promotes logic, counting, problem-solving and memory; word games e.g. I Spy, twenty questions to support communication, problem-solving and literacy • sensory play, e.g. paint, provision of art and craft areas to help children develop imagination, fine motor movements and confidence • imaginative play, e.g. dressing up, re-enacting films, television shows, plays to help children learn, explore ideas, develop confidence, support communication and literacy skills, express emotions and creativity • construction play, e.g. building dens outdoors, technical kits to make models – to encourage children's imagination, problem-solving, creativity and physical skills.	
Weeks 7-8 (Learning Aim C) Understand the different ways play is structured and the benefits to children's development	**Adult-led play** in which the adult plans, organises and leads the children in a play activity, e.g. playing peek-a-boo with babies, cooking, gardening. BENEFITS • enable children to carry out higher risk activities e.g. cooking, arts and crafts and learn how to use tools and equipment safely e.g. knives, scissors • supports acquisition of specific skills and experiences, e.g. counting, visiting a zoo • enhances language development, e.g. introducing new vocabulary, discussion. DISADVANTAGES • learning is not always effective, e.g. child may not be given enough time to solve problems, practice skills or develop their own ideas and concentration may be affected if adults are leading the play • learning may be limited, e.g. no opportunity for child's own creativity, independence, asking questions. **Adult-initiated play** in which the adult puts out resources and toys that prompts children to play in a certain way, e.g. hiding coins in a sand tray to support counting. BENEFITS • encourages children to develop new concepts and practise skills, e.g. using equipment, counting • effective learning may take place, e.g. perseverance, concentration, increased interaction. DISADVANTAGES • children may not learn expected skill or concept, e.g. ignore play opportunity, not understand what to do. **Child-initiated play** in which children choose resources and how to play with them, e.g. making available a wide range of toys, equipment and sensory materials for children to self-serve without asking permission. BENEFITS • encourages children to develop and persist with own ideas, e.g. increased concentration, making models, creating dens • opportunities for children to develop social skills, e.g. cooperation, turn taking. DISADVANTAGES • children may develop or practise skills in just one area, e.g. play repetitively, choose limited range of resources • learning may be limited, e.g. without adult help children may not learn concepts, know about numbers, be able to do complex tasks.	

2.1.1 Computational thinking

Definition

Computational thinking is a set of problem-solving methods that involve expressing problems and their solutions in ways that a computer could also execute.

Other computational methods

Data mining:
This aims to spots trends and patterns in data.

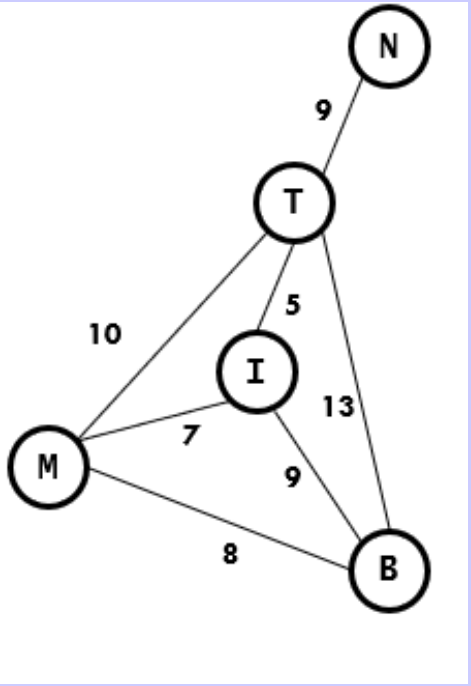
Algorithms:
A rough list of instructions used to solve a problem.

Pattern recognition:
Used to find similarities and make problems easier to solve.

Abstraction

Definition

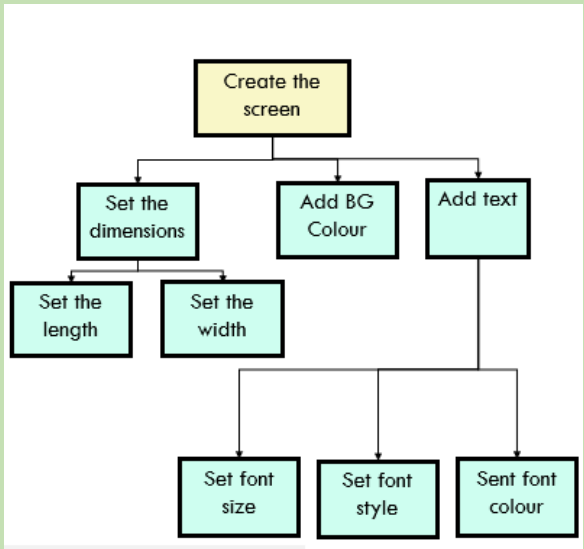
Abstraction is the removal of unnecessary elements so that the important parts remain, thus making the problem easier to solve.



Decomposition

Definition

Decomposition is the process of taking a problem and breaking it down into smaller chunks (known as sub-tasks).



2.1.2 Designing, creating and refining algorithms

Constructing algorithms

Algorithms can be constructed in many different ways. It could be a basic list of instructions, pseudocode or as a flow chart.

Syntax and Logic errors:

Syntax error:

This error occurs when the syntax used does not meet the rules set by the language. A common example is a grammatical mistake (e.g. print spelt incorrectly)

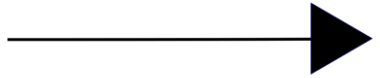
Logic error:

The program will appear to be working however, it might do what it's intended to do. A common example would be the use of an incorrect operator.

Flow chart symbols:

	**Start/Stop:** This signals the beginning and the end of each algorithm.
	**Input/Output:** Used if data is being inputted into the system. If any data needs to be displayed then output could be used. (e.g. print)
	**Process** This is used to process instructions. This could be used to store variables and their associated values. It could be used to process calculations.

Flow chart symbols:

	Decision This is used if there is a condition which could lead to an alternative path on the flow chart. Used for Selection Statements
	**Subroutine** This is used to identify any instructions that can be/or need to be re-used over and over again. (e.g. functions and procedures.)
	**Connector** The line used to link all the symbols together. This helps to establish a logical structure to the algorithm.

2.1.2 Designing, creating and refining algorithms

Trace tables

A trace table is a technique used to test algorithms in order to make sure that no logical errors occur while the calculations are being processed.

Example:

X	Y	Output
1	3	
2	4	
3	6	
4	9	
5	13	
6	18	
7	24	31

```
Y = 3
for x = 1 to 7
    y =y + x
next x
print (y)
```

Why is the output column only populated with the final value?

This is because the print line is outside of the loop.

Example:

Total	Number	Output
0	3	
3	13	
16	21	
37	28	
65	0	65

```
Total = 0
input Number
while Number > 0:
    Total = Total + Number
    input Number
endwhile
print(Total)
```

Why are they used?

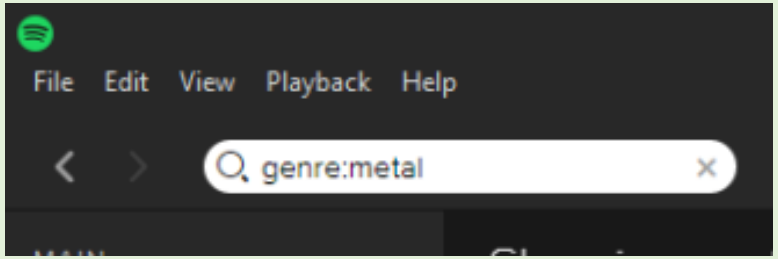
It allows the programmer to have a better understanding og the program.

2.1.3 Searching & Sorting algorithms

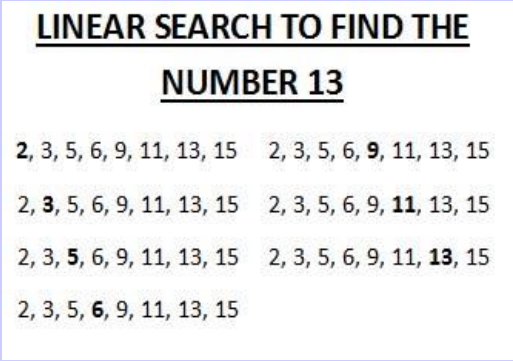
Searching algorithms

Searching Algorithms are designed to check/retrieve an element from any data structure where it is stored.

Real life examples:



Linear Search:



Pro

Quick if the data required is at the beginning of the list.

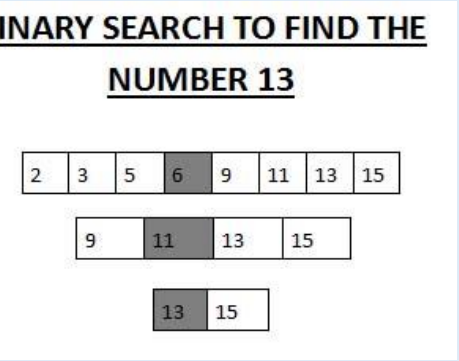
Con

As the list grows, it may become inefficient.

Stages:

- Examine the first value held in the list.
- Check to see if the value at that position matches the value searched for.
- If it matches, the value is found.
- If not, move to the next item in the list and repeat steps 1-3 until found.
- If all the items have been checked and no match is found, send a message.

Binary Search:



Pro

The 'divide and conquer' approach means it will remove half of the result after each search.

Con

Will not always outperform a linear search.

Stages:

- Start by setting the counter to the middle position in the list to find the media value.
- If the value held there is a match, the search ends.
- If the value at the midpoint is less than the value to be found, the list is divided in half. The lower half of the list is ignored and the search keeps to the upper half of the list.
- Otherwise, if the value at the midpoint is greater than the value to be found, the upper half of the list is ignored and the search keeps to the lower half of the list.
- Repeat steps 1 to 3 until found.

2.2. Programming fundamentals

2.2.1 The use of variables, constants, operators, inputs, outputs and assignments.

An assignment operator is used to assign a value to a variable or constant. However, there are a range of operators that a serve a different purpose.

Variables and Constants:

```
num1= int(input("Enter first number"))
num2 = int(input("Enter second number"))
num3 = 10
print(num1+num2+num3)
```

Variable

A named storage location that is used to store a value that can change at any point during the program.
For example, in the code above, num1 and num2 are variables because the input could be different every time the program is run.

Constant

A named storage location that is used to store a value that cannot change automatically and will remain the same each time to program is run. It can only change if the user manually changes the value.
For example, in the code above num3 is a constant.

Comparison Operators:

Operator	Meaning
==	Equal to
!=	Not equal to
>	Greater than
<	Less than
=>	Equal or more than
<=	Equal or less than

Logical Operators:

AND

OR

NOT

Arithmetic Operators:

Operator	Python representation	Meaning
+	+	Addition
-	-	Subtraction
*	*	Multiplication
/	/	Division
DIV	//	Floor Division
^	**	Exponentiation (Powers)
MOD	%	Modulus (Remainder)

2.2 Programming Fundamentals

2.2.1 Programming Constructs

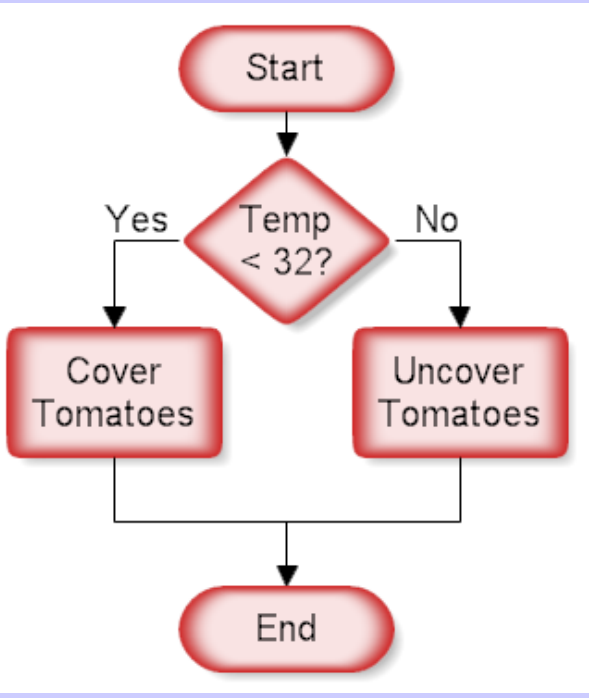
Programming constructs are the building blocks used for any program developed and they are: Sequence, Selection and Iteration.

Sequence

```
num1= int(input("Enter first number"))
num2 = int(input("Enter second number"))
num3 = 10
print(num1+num2+num3)
```

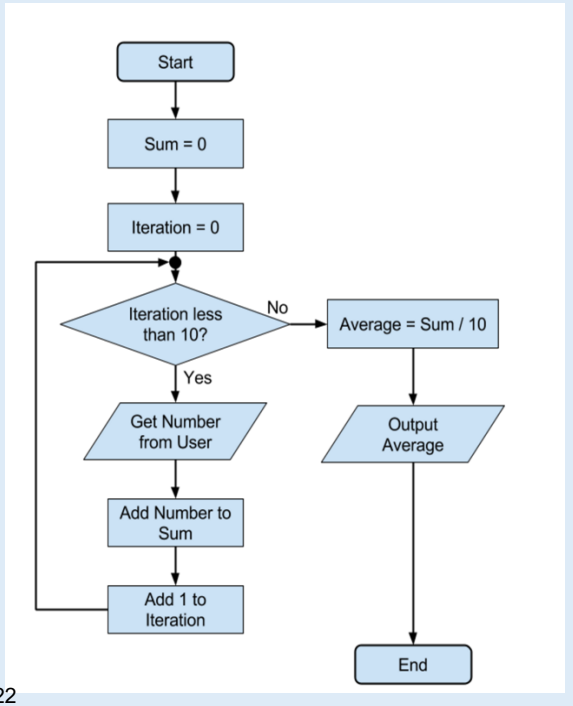
Definition:
A sequence refers to a logical order of items. In the context of programming, algorithms always use a sequence because it's written line by line.

Selection



Definition
Selection is the process in which an outcome depends on whether a certain condition is met. In programming, selection (IF) statements are commonly used for this.

Iteration



Definition
Iteration is the process of repeating steps. In programming, there are two common types used: FOR Loops and WHILE Loops.

A FOR loop is a counter-controlled loop. This means code will only repeat a certain number of times.
A WHILE loop is a condition-controlled loop. This means the code will continue to repeat until a certain condition is met.

2.2 Programming Fundamentals

2.2.2 Data types

This is a particular kind of data item, as defined by the values it can take, the programming language used, or the operations that can be performed on it.

Data types:

Integer
Used to represent a whole number.

Float/Real
Used to represent real values so this could be numbers that include a decimal value.

String
A collection of alphanumeric characters enclosed in quotation marks.

Character
Represents a single character from a string..

Boolean
An outcome represented by one of two states (TRUE/FALSE)

Context:

Float/Real
Specific distance in miles (e.g. 1.5 miles)

Integer:
Speed and Yards as a whole number

String:
Mph for Miles per hour

Character:
The letter P for Parking

What is casting?

Casting is when you convert from one data type to another. In the example below the input function would be set as a default to a string. By adding int in front of the input, we're telling the program that we would like to user to enter an integer.

```
num1= int(input("Enter first number"))
num2 = int(input("Enter second number"))
num3 = 10
print(num1+num2+num3)
```

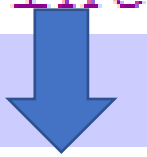
2.2. Programming fundamentals

2.2.3 String Manipulation

A string is a sequence of characters that contain letters, numbers and symbols. It is commonly enclosed in quotation marks however, there are techniques we can use to change the way the string looks.

Substrings:

```
firstname = "Donald"
surname = "Trump"
print(firstname[:1])
print(surname[:2])
```



```
Don
T
```

Description:
A substring is used to take a portion of the string.

OCR Exam Reference Language Equivalent:

- firstname = “Donald”
- surname = “Trump”
- print(firstname.substring(0,1))
- print(surname.substring(0,2))

How to check the length of a string:

```
print(firstname, "is", len(firstname),"characters long")
print(surname, "is", len(surname),"characters long")
```

Description:
The len function will check the length of a string. In the OCR Exam Reference Language it will be referred to as *length*.

Upper and Lower functions:

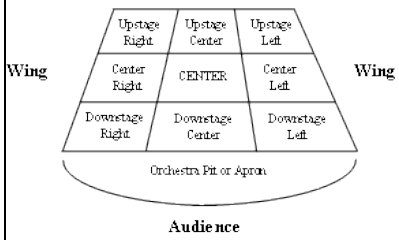
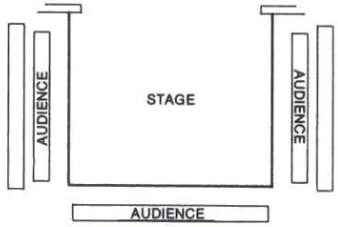
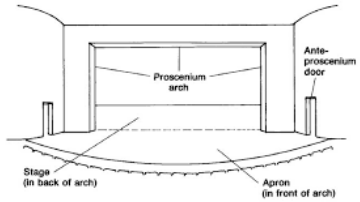
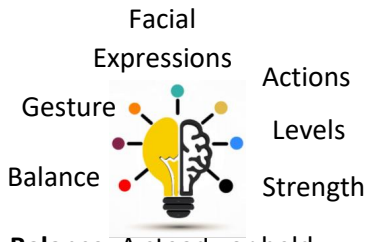
```
firstname = "Donald"
surname = "Trump"
print(firstname[:3])
print(surname[:2].upper())
```

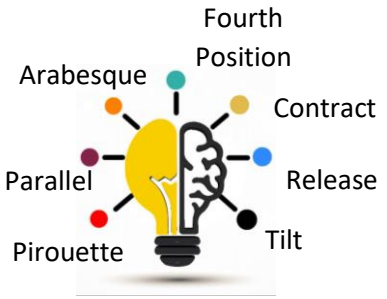
```
Don
TR
```

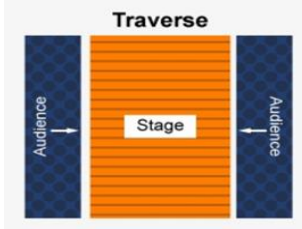
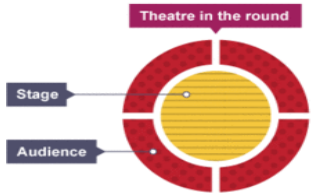
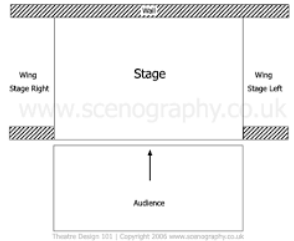
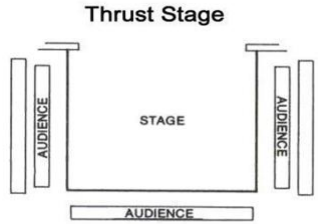
Description:
The upper function which switch the string to an uppercase letter. Lower can be used to make the string lowercase.

OCR Exam Reference Language Equivalent:

- firstname = “Donald”
- surname = “Trump”
- print(firstname.substring(0,3))
- print(surname.substring(0,2)).upper

	Week 1	Week 2	Week 3	Week 4	Week 5
YEAR 10 DANCE – CYCLE 1	**Stage positions**  **Staging Types:** Thrust Stage Audience is on three sides. Thrust Stage  Proscenium Arch or End on. Audience at the front of the stage area.  **Key Vocabulary:** **Motif:** A collection of movements which link directly to your stimulus; Repeated movement forming a pattern.	**Theatre Makers** **Choreographer: The person** who creates choreographies and teaches the routines. **Designer**: A designer decides what the stage, lighting, sound and costume could look like. They create / make the different production elements. **Dancer:** a person who dances or whose profession is dancing. They listen to the Choreographer. **Key Vocabulary:** **Assignment Brief** This is your assessment criteria, tasks and topic given to you each term. Clearly highlighting how to achieve your grades. **Unit** The course is made up of 3 different units, each having a different topic, aim and skills. **Logbook** This is a piece of coursework, you will reflect on your progress in each session, setting targets to improve **Evidence** What you must produce to pass the course. Pieces of homework, video recordings, choreography.	**Physical Definitions**  **Balance:** A steady or held position achieved by an even distribution of weight. **Gesture:** as the movement of face, body or limbs to express ideas and emotions, or anything done to communicate a purpose or feeling. **Facial expressions:** How you use your expressions to communicate mood, emotions, reactions and character. **Actions:** Human movement. It can include **dance** steps, facial movements, partner lifts, gestures, and even everyday movements such as walking. **Levels:** Using different levels and heights from the ground to add dynamics to chorography. **Strength:** Muscular power.	**Evaluating Key Words** **Identify:** Provide a single word or short response to pick out the key factor(s) or element(s). **Describe:** Giving an account of something including a series of features/points/trends/factors; **Explain:** Provide sufficient detail and/or understanding in responses. Learners use linkage words such as 'therefore', 'so that' and 'because' to expand on the initial point made. **Analyse:** Examine in detail to discover the meaning or essential features of a theme, topic or situation. Break something down into its components, examine factors methodically and in detail to recognise patterns by applying concepts and making connections to predict consequences. **Assess**: Provide sufficient detail and/or understanding in responses. Learners will break something down into its components, examine factors methodically and in detail to present logical and coherent reasoning	**Structure of Chorography** **Structure**: The sections of movement which make up your whole choreography **Binary AB:** Your dance has two contrasting sections carrying some similarities (music, style, tempo, etc.) **Tenary ABA:** A three part choreography structure where the second section contrasts the first, the third section is a repetition of the first section with possible developments **Rondo ABACADA:** A structure with three or more themes which occur throughout. **Episodic ABC:** The sections of the dance are all different from each other. **Narrative ABCDEF:** A structure which follows a story line with the use of characters **Arch ABCBA:** This is similar to Rondo and Ternary – Section C is the climax with the first two sections repeated. 

	Week 6	Week 7	Week 8	Week 9	Week 10
YEAR 10 DANCE – CYCLE 1	**Key Features of Contemporary Dance**  **Pirouette**: Turning on one leg, with one feet pointed at your knee. **Parallel**: Standing with feet under your hips, toes pointing forward. **Arabesque**: Standing on one leg with the other straight out behind you. **Fourth position:** One arm is straight up, the other is straight out at shoulder height. **Contract:** Pulling your stomach muscles in to create a curve with your spine. **Release**: Moving your body in a relaxed weightless dynamic. **Tilt**: Tipping to the side with a straight back, arms and leg to create a 'T' shape.	**Key Features of Contemporary** **Graham** This style looks at contraction and release of the spine, focusing on how your body moves on the ground and through travelling. **Cunningham** This style believes all movement should originate from the spine – including the 5 movements of the spine with almost every movement. Moving this body part before any other. **Musical Theatre** This is the style most used in theatres today, telling a narrative, performing as characters and often using the words for choreography. **Horton** This style originates from the hips, using sharp angles and strong, straight backs and legs.	**Definitions** **Social background of the dance**. When researching social context you should consider how the dance reflects the worries and concerns of society and events in the outside world. Consider news articles of the time (these can be found in on line). Consider what popular programmes are on TV and radio, how do these depict what is happening in society? Consider the fashion of the day. You must also consider the social values of the time. **Historical background of the dance.** When researching historical context you should consider what historical events are happening at the time and how world events might have impacted on our own Country. You should also consider performance conditions.	**Revision for Knowledge Organiser test:** Pick three sections you feel you need revise. You may choose to look over one week in particular you feel you don't know as well. Use the following to support you with your revision: LOOK COVER WRITE CHECK Draw a picture to represent your chosen word/section. Create flash cards that include your words/sections and their definitions. Put your word/section into a scenario. For example, "I would flex my feet during the style of Jazz". Create a Mind Map 	**Key Vocabulary:** **Motif**: A collection of movements which link directly to your stimulus; Repeated movement forming a pattern. **Musicality:** Performing in time with the rhythm of the music, with both dynamics and placement. **Dynamics:** The way in which you execute your movements – strong, sharp, controlled, relaxed etc. **Contract:** Pulling your stomach muscles in to create a curve with your spine. **Parallel**: Standing with feet under your hips, toes pointing forward. **Binary AB:** Your dance has two contrasting sections carrying some similarities (music, style, tempo, etc.) **Facial expressions:** How you use your expressions to communicate mood, emotions, reactions and character. **Actions:** Human movement. It can include **dance** steps, facial movements, partner lifts, gestures, and even everyday movements such as walking.

	Week 1	Week 2	Week 3	Week 4	Week 5
YEAR 10 DRAMA– CYCLE 1	**Design Elements of Lighting** **Back Projection** A method of projecting images onto a translucent screen from behind. Often used for projected scenery or special effects. **Barn Door** A rotatable attachment consisting of two or four metal flaps (hinged) which is fixed to the front of a Fresnel lantern to cut off the beam in a particular direction(s). **Cyclorama** A fabric drop hung from a curved or segmented batten, or a curved wall at the back of the stage, upon which light can be cast to create effects (*cyc* for short). **Flood** To wash the stage with general lighting. The name given to a basic box-shaped lantern with a simple reflector used to achieve this effect. **Gel** A sheet of plastic usually composed of a coloured resin which creates coloured light on stage.	**DNA Original Performance Conditions** Directed by Paul Miller Set, Costume and Video Designer by Simon Daw Lighting Designer by Paule Constable  Sound Designer by Rich Walsh Associate Video Designer by Paul Kenah  **DNA** had a forensic quality slowly moving through and exploring the spaces in which the play is set including a wood and a field.	**Design Skills** **Costume** What a performer wears to evoke the appearance of a particular character. Costumes maybe realistic or stylised. They may be 'period' (appropriate to the historical setting of the play) or deliberately modern in look. **Costume in DNA** The characters in DNA are in a gang, but they are teenagers and still are in school. 1.The characters can wear school uniform, but this can be adapted to represent how they do not respect the correct uniform rules. Maybe the shirts are untucked, tie are loosen or even not worn. 2.The characters could wear different jackets or hoodies. These could be branded and/or of different colours to represent the characters personalities. 3.Each gang member could have something that links them as a gang. For example this could be hats, bandaners or scarfs. 	**Design Skills of Staging** **Staging** This plays a very importance role and the performer needs to consider how and why the characters move in a particular way and how they use the stage effectively in order for the audience to understand the aims and intentions of the play extract. **Types of Staging** **Traverse** This type of staging is when the audience is on two opposite sides of the stage facing towards each other.  **Theatre-in-the-round** Is a form of theatrical staging in which the acting area may be raised or at floor level, is surrounded by the audience.  	**Design Element of Staging** **Types of Staging** **Proscenium Arch** A stage where the audience sits on one side only is called a proscenium stage (you might know this as end-on staging). The audience faces one side of the stage directly, and may sit at a lower height or in tiered seating. The frame around the stage is called the proscenium arch.  **Thrust Staging** This type of staging is one that extends into the audience on three sides and is connected to the backstage area by its upstage end. A thrust has the benefit of greater intimacy between performers and the audience than a proscenium. 

	Week 6	Week 7	Week 8	Week 9	Week 10
YEAR 10 DRAMA – CYCLE 1	**Britain in the 2000's** There are no explicit references to actual historical events within DNA and Dennis Kelly wanted the play to be timeless. Kelly's main concern was the way that young people can behave in groups (gangs). However although Kelly wanted the piece to be 'Timeless' the play contains suggestions of issues that were affecting Britain in the 2000's. Within this time adults were concerned about behaviour of young people without adult supervision. British newspapers called young people 'hoodies, chavs, or feral,' and linked to violent behaviour.	**Component Three DNA questions.** Section A includes two questions and both are written from the perseptive of a Performer. **An Example of Section A (i) question.** You are going to play Mark. Explain two ways you would use vocal skills to play this character in this extract. (4 marks) **An Example of Section A (i) question.** You are going to play Leah. She is desperate for Phil's attention. As a performer, give three suggestions of how you would use performance skills from her entrance at the start of the extract to the end. You must provide a reason for each suggestion. (6 marks) Performance Skills include Vocal. Physical and use of Space (Proxemics).	**Component One** **Protest and Resistance** **The White Rose** In the early summer of 1942, a group of young people formed a non-violent resistance group in Nazi Germany, consisting of a number of students from the University of Munich and their philosophy professor. The group became known for an anonymous leaflet campaign, lasting from June 1942 until February 1943,that called for active opposition to the Nazis regime. Calling themselves the White Rose, they instructed Germans to passively resist the Nazis. **Theatre Practitioner Konstantin Stanislavski 1863 to 1938 created The System/The Method for actors.** Stanislavski believed in creating naturalism in Theatre. He wanted the audience to become emotional involved in the play and completely believe the characters and their emotions. Stanislavski created a rehearsal system for the actor and created different ways that the actor would become the character.	**Revision for Knowledge Organiser test:** Revise areas on Performance and Design skills. Learn the types of staging and the different lighting elements. You may choose to look over all the performance and design elements and use the following to support you with your revision: LOOK COVER WRITE CHECK Ensure you have knowledge of DNA. This includes understanding of the characters, the themes and knowledge of the original performance conditions. Remember how you used the performance and design elements when creating your drama work on key scenes from Act 1.	**Component Three DNA Section B Questons.** Section B includes two questions and both are written from the perseptive of a Director. **An Example of Section B (i) question.** There are specific choices in this extract for a director. As a director, discuss how you would use one of the production elements below to bring this extract to life for your audience. You should make reference to the context in which the text was created and performed. Choose one of the following: • costume • staging • props/stage furniture (9 marks) **An Example of Section B (ii) question.** As a director, discuss how Jan might demonstrate her age and anxiety to the audience in this extract and the complete play. (12 marks) You must consider: ● voice ● physicality ● stage directions and stage space.

GCSE Food preparation and nutrition

Week 1
Carbohydrates in the diet

Functions of carbohydrates

Carbohydrates are present throughout the body and is required for **ENERGY** needed for movement, growth and chemical reactions and processes.

Starch

Starch – Main food source in plants
Pectin – natural in fruits
Glycogen – energy storage in humans

Sugar

Fructose – Fruit and honey
Sucrose – Sugar, golden syrup
Glucose – Ripe fruits and vegetables
Maltose – Found in cereals and beer
Lactose – milk, yoghurt, cream

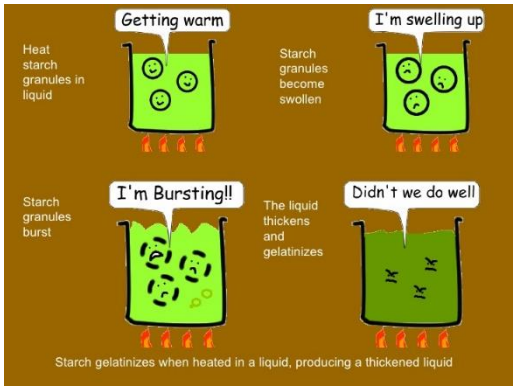
Fibre

Insoluble – passes through
Wholegrain foods, brown rice, wheat bran, nuts and seeds
soluble fibre -fuller for longer
Oats, nuts, legumes, fruits, vegetables.

Excess	Deficiencies
• A diet rich in cereals can reduce the body's ability to absorb calcium and iron • Could lead to weight gain. • Cause tooth decay, weight gain and even type 2 diabetes	• A deficiency of fibre can contribute towards constipation and this could lead to an increased risk of bowel cancer • Sugar deficiency is rare

Week 2
Chemical functions of carbohydrates

Gelatinisation



Gelatinisation is the **thickening** of a liquid. **Starch** warms it begins to swell, starch begin to burst due to the liquid and heat. This occurs between **75 and 83 degrees**. Starch bursts **amylose** is released which thickens the product.
Complete at 100 degrees

Factors that affect gelatinisation:

- Sugar
- Acids
- Stirring
- Temperature
- Amount of liquid
- Types of starch used

Dextrinization

- starch is broken down into dextrin by dry heat for example baking, grilling or toasting. Dextrin adds a sweet taste to baked products

Caramelisation

- Caramelisation causes changes to a food's colour and flavour.
- Caramelisation occurs when food products containing sugar come into contact with heat. It is the process of sugar turning brown through heat being applied.

Week 3
Protein in the diet

Protein is needed for:

Growth of all body cells and tissues
Energy – secondary source of energy
Repair of body tissues
Maintenance of the body

GERM

HBV	LBV
Meat, chicken, pork, beef bacon, sausages Fish and seafood Milk Yoghurt Eggs Soya beans Quinoa	Cereals, e.g. wheat, rice, oats, barley Cereal products e.g. bread, pasta, rice Sweetcorn Peas, beans, lentils Nuts and nut products e.g. peanut butter Seeds

Biological value of proteins:

20 different amino acids found in plants and animals. The essential amino acids cannot be made in the body and therefore need to be consumed in the diet
Children+2 = 10
Adults +2 = 8.

Protein complementation:

LBV + LBV = HBV - All essential amino acids are present

1. Peas and rice
2. Beans on toast

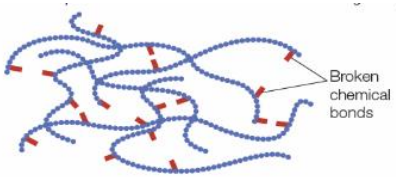
Deficiency and excess:

Kwashiorkor is a deficiency that mostly occurs in children. They will have poor growth rates, suffer hair loss and persistent infections.

Too much protein can be harmful to the kidneys and liver

Week 4
Chemical functions of protein

Denaturation



Changing in the structure of a protein

Denaturation occurs by:

1. Use of a marinade by adding acid
2. Use of heat
3. Mechanical agitation e.g. whisking eggs

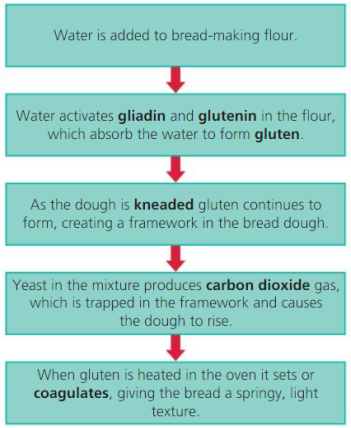
Coagulation

Coagulation is when the protein in food sets. This occurs when the protein is heated.

Foam formation

A foam is when a gas is spread throughout a liquid. Eggs are excellent at foam formation. Whisking eggs produces a gas-in-liquid foam.

Gluten formation



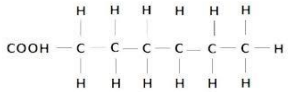
Week 5
Fat in the diet

Functions of fat:

1. Protection of vital organs
2. Insulating the body
3. Energy

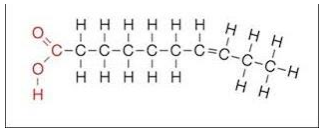
Animal fat	Vegetable fats
Butter, ghee, goose fat, suet	Vegetable and plant oils e.g. olive oil
Meat e.g. pork, lamb, chicken, bacon	Avocados and olives
Oily fish e.g. tuna salmon	Seeds, e.g. sesame seeds

Saturated fat



- Fully saturated in hydrogen
- Solid at room temp

Unsaturated fat



- Double bond, less hydrogen
- Liquid at room temp

There are two types of unsaturated fats:

1. Monounsaturated fatty acids
2. Polyunsaturated fatty acids

   Monounsaturated fats have just one double bond whereas polyunsaturated fats have many double bonds.

Essential fatty acids

Omega 3- Found in oily fish, seeds and green leafy vegetables

Omega 6 – found in vegetables, grains, seeds and chicken.

Excess fat: Saturated fat can raise our bad cholesterol levels in the body, which increases the risk of heart diseas3.

Week 6
Chemical functions of fat

Shortening

Shortening is when fat coats the flour preventing the absorption of water, which results in a crumbly texture.

Plasticity

Plasticity describes the ability of a solid fat over a range of temperatures.

Plasticity is very important when choosing which fat to use in food preparation. There are many different types of fat. Solid fat does not melt immediately but soften over a range of temperatures.

Plasticity affects the spreading, creaming and shortening ability of the fat.

Emulsification

Fats and oils do not mix with water. This means they are 'immiscible' and they cannot be mixed. When two immiscible liquids are forced together, tiny droplets of one liquid such as oil, are spread throughout another liquid.

An emulsion is a special type of liquid where tiny droplets of one liquid, such as oil, are spread throughout another liquid such as water.

Aeration

Aeration is when air is trapped in a mixture.

Air needs to be added to a cake mixture in order to give a springy and well-risen texture to the baked cake.

When making a cake, fat and sugar are creamed together. When the fat and sugar are creamed together, they enclose tiny bubbles of air.

Week 7 Micronutrients	**Week 7** Micronutrients	**Week 8** Reducing loss of nutrients
<u>Vitamin A</u> Needed for vision, healthy skin and mucous membranes, bone and tooth growth, immune system health <u>Vitamin D</u> These nutrients are needed to keep bones, teeth and muscles healthy. Vitamin D helps regulate the amount of calcium and phosphate in the body <u>Vitamin E</u> Vitamin E helps maintain healthy skin and eyes, and strengthen the body's natural defence against illness and infection (the immune system <u>Vitamin K</u> Vitamin K is needed for blood clotting, which means it helps wounds heal properly. <u>Vitamin B1</u> Break down and release energy from food. keep the nervous system healthy <u>Vitamin B2</u> keep skin, eyes and the nervous system healthy the body release energy from food <u>Vitamin B9</u> The body form healthy red blood cells. Reduce the risk of central neural tube defects, such as spina bifida in unborn babies <u>Vitamin C</u> Helping to protect cells and keeps them healthy, maintaining healthy skin, blood vessels, bones and cartilage and helping with wound healing <u>Antioxidants – ACE</u> Antioxidants help to protect healthy cells from the damage caused by free radicals	<u>Calcium</u> Helping build strong bones and teeth regulating muscle contractions, including heartbeat making sure blood clots normally A lack of calcium could lead to a condition called rickets in children and osteoporosis in adults Sources include: • Milk, cheese and other dairy foods • green leafy vegetables **<u>Iron</u>** Iron is important in making red blood cells, which carry oxygen around the body. A lack of iron can lead to iron deficiency anaemia Sources include: • Liver (but avoid this during pregnancy) • Meat **<u>Potassium</u>** Potassium is a mineral that helps control the balance of fluids in the body, and also helps the heart muscle work properly. Sources include • Fruit – such as bananas • some vegetables – such as broccoli, parsnips **<u>Sodium</u>** Sodium and chloride are minerals needed by the body in small amounts to help keep the level of fluids in the body balanced. Chloride also helps the body digest food. Having too much salt is linked to high blood pressure, which raises your risk of serious problems like strokes and heart attacks Sources include: • ready meals • meat products – such as bacon	**<u>How preparation and cooking affect nutritional properties of food</u>** Vitamin B and C are significantly affected by either cooking, preparing or storing these foods. **<u>Reducing the losses when cooking:</u>** **During cooking** • Use only a little water for cooking, so only small amounts of nutrients dissolve in it • Boil the water first, then add the food so that they start cooking quickly • Cook vegetables for a minimum time until they are just tender • Steaming instead of boiling vegetables • Serve food straight away • Save cooking water from vegetables, use it in gravy/soup/sauces • Cook meat, fish for the shortest time possible • Oil that can be used for frying should be changed regularly to avoid harmful chemicals as a by-product of heating and cooling of oil. **During food storage:** • Store away from heat and light • Store food in an airtight container • Store food for as little time as possible **During food preparation:** • Avoid buying damaged and bruised fruits and vegetables • Cut, grate, squeeze, chop fruit and vegetables just before cooking and serving to minimise exposure to oxygen Avoid peeling fruits and vegetables where possible as skin holds many nutrients

Week 9 Role of water in the diet	**Week 10** Diet, health and nutrition	**Week 11** Life stages
Body temperature is 37°C. If the temperature increases by just a few degrees, then body cells will be damaged. To prevent this, the body sweats The evaporation of this water allows the body to cool down You sweat more: • In hot conditions • When you are exercising • When you are ill and your temperature rises Therefore, in hot conditions, when exercising and during illness you should drink more water. **Functions of water** 1. Cooling the body 2. Removing waste from the body 3. Helping the body to use the food you eat **How much water is needed each day?** Depends on many factors, such as: • Your age • Your size • How active you are • The climate (weather) Most people need about 1.5–2 litres of water each day – this is about 8 average sized glasses. **Signs of dehydration:** • Feeling thirsty • Dark urine • Headaches • Lack of energy • Feeling lightheaded	 The Eatwell guide divides food into groups, depending on their nutritional role and shows the proportions of each of the groups needed for a healthy, varied diet. As well as food groups extra information has been included such as: • Hydration stating 6-8 cups/2 litres of water per day. • Nutritional labelling to remind you that you should choose foods that are lower in fat, sugar and salt. • The average energy needs of men and women have been included to remind you that all foods and drinks contribute to the total energy intake **8 Tips for a healthy diet** 1. Base your meals on starchy foods 2. Eat lots of fruit and vegetables 3. Eat more fish, including a portion of oily fish each week 4. Cut down on saturated fat and sugar 5. Eat less salt (no more than 6g per day) 6. Get active and be a healthy weight 7. Don't get thirsty 8. Don't skip breakfast	**Young Children Years 1-4** • Vitamin D and calcium are crucial for development of bones. • Solid foods introduced after first 6 months. • Sufficient fibre should be eaten to avoid constipation **School children Years 5-12** • key nutrients for growth, repair and maintenance of the body, and provide a regular supply of energy. • given smaller portions • Regular consumption of water • contain plenty of dietary fibre • try new foods and eat a varied diet **Teenagers** Full range of nutrients to provide them with the materials they need to grow and develop normally. Key nutrients include: • Iron • Calcium and Vitamin D • Protein • Dietary fibre **Adults 19+** Nutritional needs should be met by following dietary guidelines and maintaining their general health. **Elderly** • Very unique nutritional needs • Antioxidants – Help prevent disease • Reduced macronutrients as less active • Increased iron to prevent deficiencies • Increased Zinc to maintain immune system • Increased vitamin D and calcium to support bone function and maintain bone health

<table>
<tr><td>Seneca completion</td><td><u>How to complete a timeplan for your assessed practical</u></td></tr>
<tr><td>Week 1:
4.2.1 temperature control
4.2.2 ambient foods and food labels
4.2.3 preparing, cooking and serving food
Week 2:
2.1.4 Carbohydrates
2.1.5 Carbohydrates
Week 3:
2.1.1 Protein
2.1.2 Protein
Week 4:
3.2.1 Protein and carbohydrate
Week 5:
2.1.3 – Fats
3.2.2 – Fats and oils
Week 6:
2.4.1 – End of topics test – Food science
Week 7:
2.2.1 Fat soluble
2.2.2 Water soluble vitamins
2.2.3 minerals and water
Week 8:
2.2.4 – Minerals and water 2
2.2.5 – End of topic test – Macro and micronutrients
Week 9:
Week 9:
Timeplan for assessed practical
Week 10:
1.1.1 – General practical skills
1.1.2- Knife skills
1.1.3.Preparing fruit and vegetables and using equipment
Week 11:
2.3.2 - Informed choices for a balanced diet 2
Week 12:
Evaluation of Seneca – complete any outstanding Seneca in preparation for cycle 2</td><td>Your timeplan should include:
• Timings: Within your three hour timing how long will steps take.
• Mise en place: this demonstrates your understanding of what would happen in a professional kitchen, where the preparation of ingredients for a range of dishes is a key stage in the efficient production of a menu.
• Order of work: this is the method that you will follow throughout the practical. This must be detailed enough to allow anyone to follow it.
• Health and safety/additional comments: What health and safety points do you need to think about when making. Think about physical, chemical and biological issues.

An example:
<table><tr><th>Time</th><th>Order of work</th><th>Health and safety</th></tr><tr><td>9:00 – 9.15</td><td>Mise en place
• Personal hygiene: wash hands; remove jewellery, put on a chef jacket.
• Weigh ingredients for each recipe
• Collect equipment</td><td>Hands washed using hot soapy water to remove bacteria and dirt</td></tr><tr><td>9.15- 9.20</td><td>Butterfly the chicken breast by slicing the chicken breast part way through with a sharp knife, and then open them out like a book. Place each breast between two sheets of baking paper and bash with a rolling pin until about 5mm thick. Cover in cling film and store in the fridge for use in a kiev recipe</td><td>Chicken must be stored in fridge until needed to reduce bacterial growth
Red chopping board used to prepare chicken to prevent cross-contamination.</td></tr><tr><td>9.25</td><td>Lay the butterflied chicken breast on a sheet of cling film and place a roll of cheese at a long edge before rolling up tightly and sealing in the cling film. Store in the fridge until needed for poaching later.</td><td>Wash hands before and after handling raw meat. Red chopping board used to prepare chicken to reduce cross contamination.
Store in fridge until needed to reduce bacterial growth.</td></tr></table>
Ensure your timeplan is detailed and realistic – top tip use a recipe to help get the steps you need and add extra detal into your steps.</td></tr>
</table>

Year 10 French Knowledge Organiser cycle 1

Complete your weekly assignment on Seneca

Extensions:

- Create revision cards for each of the main tenses studied to help you remember how to form them.
- Find a picture in a magazine/online and write a photo description
- Do 10 minutes of Duolingo every day to build your vocabulary
- Write a glossary of vocabulary we see in class – memorise it and test yourself at home.

Start with Week 1. Each week, complete the next colour block. Write each word out 3 times and each definition once. Check it all with a purple pen. Tick what is correct, fix what is wrong. For the 'Digging Deeper' task, follow the instructions in the box.

Coombeshead Academy *Inspiring Excellence*		GCSE Media Studies			*Year 10 Cycle 1*
wk	**keyword**	definition	example		
Week 1	**Medium**	A device of method of communication.	Films, magazines and radio are three different **mediums.**		**Digging Deeper:** Have a look at the front page of the newspaper below. Write a small **summary*** to explain how the person is being **portrayed***. *summary: the main points of something *portrayed: shown/presented. 
	Language	The words we use.	Emotive language and writer's methods are collective terms for the **language** we have studied in English.		
	Representation	The ways in which things are presented to an audience.	Stereotypes are one form of **representation.**		
Week2	**Industry**	A particular form or branch of commercial activity.	The media **industry** includes TV and film.	**Week2**	**Digging Deeper:** Study the film poster here. Make notes on who the intended audience is- how do you know this? Refer to details on the poster.  Think about: • The colours used • The positioning of figures • Hints given to the audience
	Audience	The group of people that a medium is created for.	A medium is designed with a particular **audience** in mind.		
	Regulation	Rules made by an authority in order to maintain order.	There are several bodies that provide **regulation** of the media.		
Week 3	**Software**	Programs used by a computer.	PremierePro is an example of a piece of **software.**	**Week 3**	**Digging Deeper:** Imagine that you are creating a new product to sell. You need to create a logo for it. 1. Design a logo. 2. Annotate it with notes on why you made the design decisions you did. Think about images and colours. 3. How will you market your product? Why?
	Advertising	The act of producing something to promote a service or product.	Film trailers are used as a way of **advertising** the film before release.		
	Marketing	The action of promoting a product or service.	Advertising is one form of **marketing.**		

Week 4	**Denotation**	The meaning of a word.	The **denotation** of 'weapon' is an item that is used to inflict actual harm.		Week 4	**Digging Deeper:** This picture is used to promote 'Of Mice and Men'. 1. What images can you pick out? 2. Why do you think the designer chose these? 3. What are the connotations of this imagery? 
	Connotation	The associated meanings of a word.	The **connotations** of 'weapon' include power, violence and aggression.			
	Imagery	The collective term for visual images.	Film trailers are made up of selected **imagery** from the film itself.			
Week 5	**Narrative**	A written or spoken account of events.	Film posters tell audiences certain points of the **narrative** in the film.		Week 5	**Digging Deeper:** 1. Research some songs that you like to listen to. What intertextual references can you find in them? 2. Create a plan for a classic narrative, according to Propp's theory. Annotate your plan to explain how you fit each of his character profiles.
	Codes	Tools that have come to be accepted by audiences as having certain meaning.	An example of a **code** would be a camera shot fading to black indicating that time has passed.			
	Intertextual	Links across texts/mediums.	Taylor Swift mentioning 'Romeo and Juliet' in her song 'Love Story'.			
Week 6	**Imperative**	A word or phrase that gives a command or order.	"You must go now!" would be an example of an **imperative.**		Week 6	**Digging Deeper:** 1. Find some examples of magazine covers. What examples of imperatives can you find? 2. Find a variety of print products and find some examples of visual and language codes.
	Typography	The style and size of font used.	Different magazines might uses different **typographies** to appeal to certain audiences.			
	Emotive Language	Language that is particularly positive or negative.	**Emotive language** aims to get a particular emotion from the audience, such as shock.			

Week 7	**Analysis** **Ana/la/sis**	A detailed examination of something.	In Media, we **analyse** media to get an understanding of their deeper meaning.		Week 7	**Digging Deeper:** 1. Research the unique selling points of 3 products of your choice. 2. Design a product of your choice. On your drawing/piece of work, write down what your product's unique selling point would be. 
	Brand	The name of a product or manufacturer of the product.	'Nike', 'Fortnite' and 'Xbox' are all examples of **brands.**			
	Unique selling point **u/nee/k**	Something that makes a product different from similar products.	A **unique selling point** of 'Coca-Cola' is that you are able to buy a bottle with your name on it from the supermarket.			
Week 8	**Stereotype**	An oversimplified image of a person or group, based upon assumptions about that person/group.	A **stereotype** of women would be that they are worse drivers than men.		Week 8	**Digging Deeper:** 1. What stereotypes are associated with men and women? 2. Research and write down some examples of stereotypes being upheld and subverted in the media.
	Uphold	To uphold a stereotype means to encourage it.	'Outnumbered' **upholds** stereotypes about teenagers only being interested in their phones.			
	Subvert	To subvert a stereotype means to go against it and present an alternative truth.	Many hospital dramas have male characters that are nurses- this **subverts** the stereotype that they are all female.			
Week 9	**Distribution**	The way in which a product is delivered to media audiences.	Digital methods of **distribution** are increasingly popular, e.g. Netflix.			**Digging Deeper:** 1. Ask your teacher for the set products that you need to study for this course. Research and learn the names of the organisations that produced them. 2. Create some revision cards with key information about these products (names of producers, dates, any interesting facts about production).
	Consumption	The way in which the audience 'takes in' the product.	Netflix often releases entire series in one day to allow 'binge watching'. This is one way the audience **consumes** media.			
	Production	The stage where a media product is produced.	Teams, budgets and equipment are all planned prior to **production** to ensure it can be done efficiently.			
Week 10	**Demographics**	The characteristics of a person of group that allows media producers to target products effectively.	Examples of **demographics** include age, gender and socio-economic group.		Week 11	**Digging Deeper:** 1. Research 'The Lego Movie'. - Who is the movie intended for? Be specific. - How has the audience been targeted in the theatrical release posters?

	Context	The background information that helps to shape a product.	Some older Bond movies appear quite sexist towards women. This is because of the **context** of the time in which they were produced.			- Include examples of media language and representations. .
	Editing	Lots of codes are used post-production to ensure that TV, film and music products are edited to be as successful as possible.	**Parallel and continuity editing** are two examples of how shots may be organised to tell a narrative.			

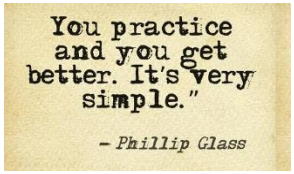
Year 10 Extension Task: Create your own storyboard of your own comedy show. Add annotations to show the codes you have used and why.

GCSE Music

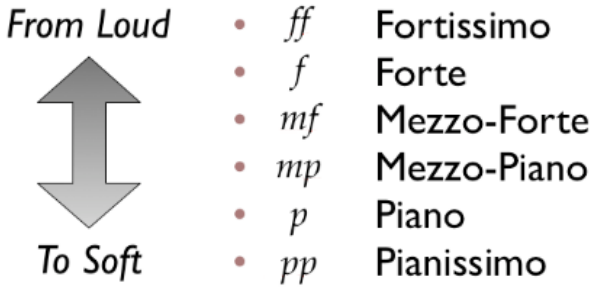
KNOWLEDGE ORGANISER – Instrumental Practice

KEY CONCEPTS

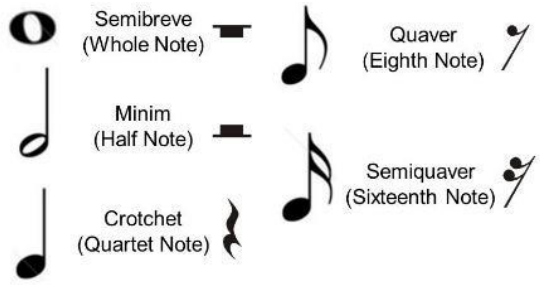
Reviewing your performance	Watching a video of your performance and using it to amend or set new targets
Solo performance skills	Understanding the techniques needed when performing as a soloist and being able to demonstrate them
Preparing for performance	Using rehearsal time and peer/self-assessment to prepare for a performance to a wider audience
Stage Presence	Researching what stage presence is and how to achieve it

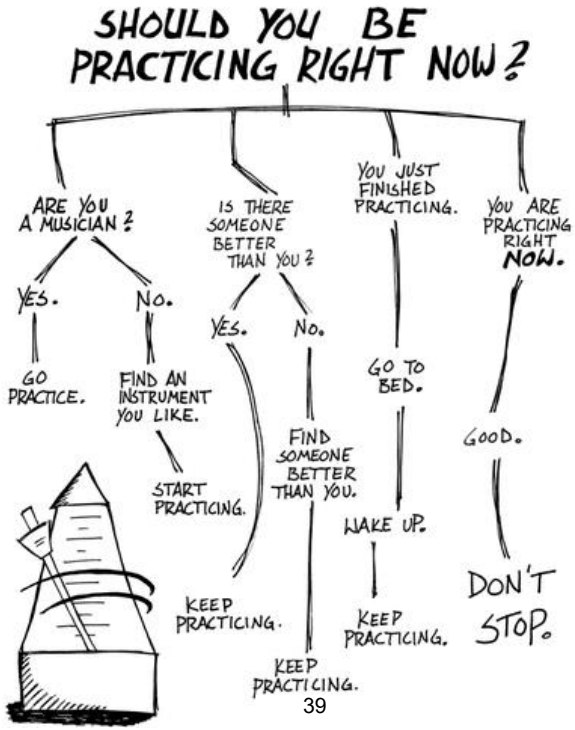


DYNAMICS



NOTE VALUES





KEYWORDS

Technique	ability and control of an instrument
Pitch	high or low sound
Timing	the ability to stay in time accurately
Rhythm	A repeated pattern of sound
Phrasing	the shape of a sequence of notes
Confidence	a belief in your ability to succeed
Repertoire	a collection of pieces
Musical Interaction	the relationship between performers
Practice	developing skills to aid performance
Strength	something you are good at
Weakness	something you need to develop
Time Management	planning and using your time sensibly and profitably – not wasting it
Consistency	always doing something
Focus	keeping your attention on one thing
Fluent	performing with no gaps or hesitations
Accurate	making no mistakes

Musical Elements - DR SMITH

Dynamics – volume
Loud, quiet, soft

Rhythm – long and short beats
Syncopation, dotted, swung, straight, off beat, back beat

Structure – organisation of the music
Verse/chorus, intro/outro, 12 bar blues

Melody – the tune
Stepwise, scalic, triadic, chromatic, leaping

Metre – how many beats in a bar
6 4 3
8 4 4

Instrumentation – the instruments used
Guitar, bass, drum kit, drum machine, voice, tech effects

Texture – the layers in the music
Melody and accompaniment, homophonic,

Tempo – speed
Fast, slow

Tonality – key
Major, minor, pentatonic

Harmony – chords
Chord sequence, power chords, parallel chords

1960s-1970's Rock Music

Rhythm - Opening drum fill, regular beat, syncopated not ostinato, back beat, 2/4, 4/4, 2/2, C, Common Time/Split Common Time,

Melody - short phrases, repetitive melodic ideas, 'hook' (in chorus/on words of title), riff, sequences

Styles:

Psychedelic rock – based on the culture of perception-altering hallucinogenic drugs like LSD, tries to recreate the experience

Heavy metal – loud, aggressive sounding, powerful chord sequences and repetitive driving rhythms, amplified distorted guitars

Rock 'n Roll – came before Rock Music, walking bass line, primary chords, developed from Blues

Film Music

Music contained in the action – digetic music e.g. radio on in the scene

Background music – underscoring, helps to establish mood, time, and place, supports dramatic development and character, moves action forward, adds to dramatic impact, provide continuity across edits

Micky Mousing

Use of Leitmotif

Instrumental colour is very important

Popular Music, Rock Music, Musicals, Film and Game Music

Game Music

Designed to repeat indefinitely

Lacking lyrics and playing over gameplay sounds

Limited polyphony for earlier game music - only three notes can be played simultaneously on the Nintendo so complex rapid sequences of notes.

Modern game music more cinematic

Including devices like fanfares, a hero's theme etc.

Pop music from 1990's to present

RnB - strong backbeat, use of drum machine, 4/4, clear melodic lines, repetitive phrases, use of melodic fills (at the end of vocal phrases), (mostly) consonant harmonies, clear harmonic progressions, sometimes use a hip hop beat (closed hi hat semiquavers, open on the off beat, hand clap off the beat)

Rock 'n Roll - steady / rock /4 beat / 8 beat rhythm, driving rhythm (in drum kit), emphasis on 2 & 4 / backbeat / off-beats, typically three guitars and drum kit, strong bass, repetitive melody lines, memorable 'hook'

Guitar based pop – 4/4 drum beat, drum fills, effects pedals on guitars (distortion) use of riffs and hooks, repeated chord sequences, **Soft Rock** (combined with folk music to produce softer sound), **Country** (acoustic instruments with vocal harmonies, often banjo or violin)

Music of Broadway 1950s to 1990s

4 main types of song: solo character, duet character, action song, chorus number

Ballads – slow romantic, reflective, comedy songs, - funny, music illustrates the lyrics, production numbers –full company, changes in location or plot

Themes based on original stories, Shakespeare, political themes

Songs often 32 bar form, often have a middle 8

Catchy riffs and hooks, catchy melodic lines

Harmony and instrumentation will reflect the musical style e.g. jazz (Bernstein), Rock (We Will Rock You), etc.

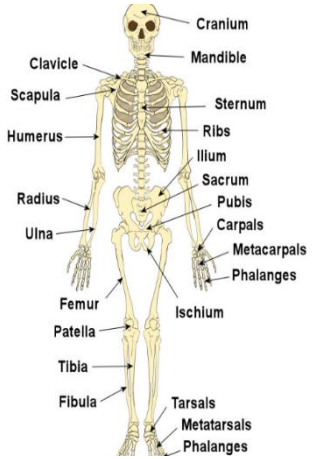
Orchestral or band accompaniment

Word painting used to reflect the lyrics in the songs

Year 10 GCSE PE Cycle 1

Week 1

The Skeletal system



Functions of the Skeleton

- Protection
- Movement
- Support
- Shape/Structure
- Blood cell production
- Storage of minerals

Types of bones in the body

Articulating bones = bones that meet at a joint to enable movement.

Long - Longer than they are wide and facilitate movement.

Short – Shorter than they are wide. They are good for strength and bearing weight.

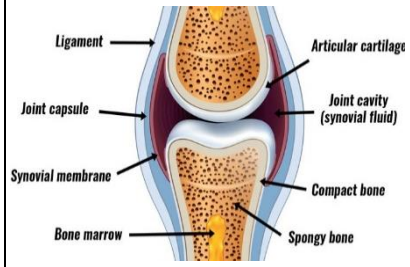
Flat – Main function is to protect vital organs.

Irregular – They have complex shape and do not fit in any other category.

Week 2

Joints and movement

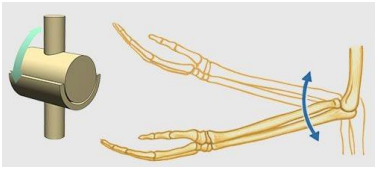
Synovial Joint: An area of the body where two or more articulating bones meet.



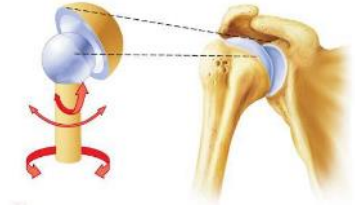
- Joint Capsule
- Tendons
- Synovial membrane
- Ligaments
- Bursae
- Cartilage
- Synovial fluid

Types of freely moveable joints:

Hinge Joint- these can be found in the elbow, knee and ankle.



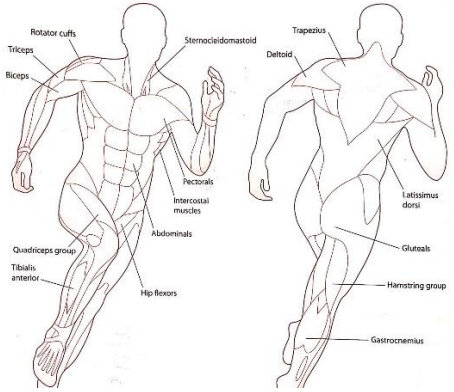
Ball and Socket joint- these can be found In the shoulder and hip.



Week 3

The Muscular system

Muscles are attached to the skeleton by tendons and movement occurs when the muscles contract and pull.



Shoulder: deltoid, trapezius, petorals, lattisimus dorsi, biceps, triceps, rotator cuff.

Elbow: Biceps and triceps.

Hip: Gluteals and Hip flexors.

Knee: Quadriceps and Hamstrings.

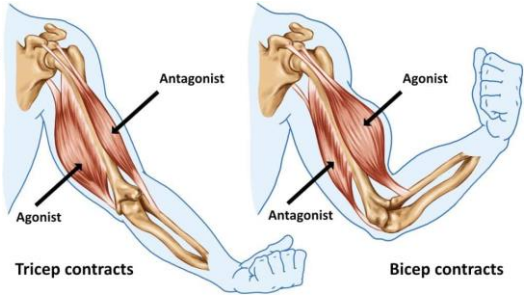
Ankle: Tibialis anterior and gastrocnemius.

Week 4

Antagonistic pairs

Muscles can only pull and not push they are therefore arranged in pairs on either side of the joint.

One muscles contracts and one muscle relaxes.



The muscle that contracts is called the **prime mover or agonist.** The muscles that relaxes is called the **Antagonist.**

Examples of antagonistic pairs in the body:

- Biceps and Triceps (Flexion and Extension)
- Hip flexors and gluteals (Flexion and Extension)
- Hamstring and quadriceps (Flexion and Extension)
- Tibialis anterior and gastrocnemius (Dorsiflexion and plantar flexion)

Muscle contractions:

ISOTONIC – Muscle changes length when it contracts resulting in the limb moving. Isotonic contractions can be **Concentric** – Muscle contracts & shortens and **Eccentric** – Muscle contracts & lengthens

ISOMETRIC – Length of the muscle does not change when it contracts.

Year 10 GCSE PE Cycle 1

Week 5

Types of movement

Flexion
- Decrease in the angle of bones at a joint.

Extension
- Increase in the angle of bones at a joint.

Abduction
- Movement of a bone/limb away from the midline of the body.

Adduction
- Movement of a bone/limb towards the midline of the body.

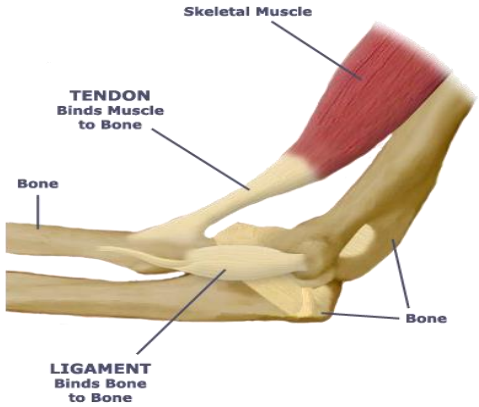
Rotation
- A circular movement around the joint. A movement around an axis.

Plantar flexion
- Movement at the ankle joint that points the toes and increases the angle at the ankle joint.

Dorsi Flexion
- Movement at the ankle joint that flexes the foot upwards and decreases the angle at the ankle joint.

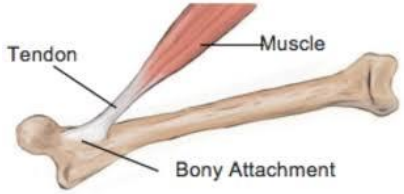
Week 6

Connective Tissues and Linkage



Connective Tissues

Tendons: Tendons connect muscles to bones.
Very strong, non-elastic cords.

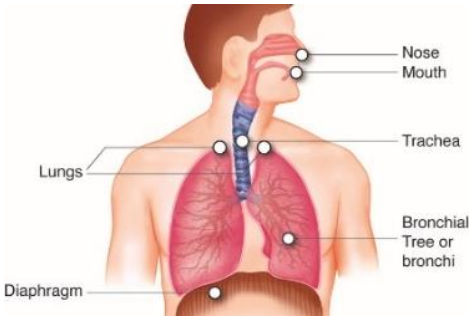


Ligaments: Ligaments connect bones to bones.
Bands of elastic fibre. They keep the joints stable by restricting movement.

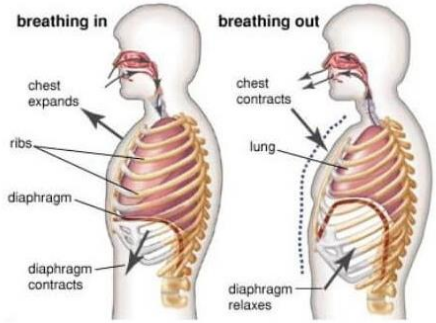
When we exercise these connective tissues increase in strength because they stretch further than normal. This increases the number of collagen fibres in the connective tissues increase.

Week 7

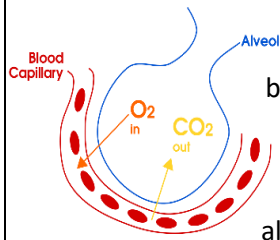
Respiratory System



Mechanics of breathing:

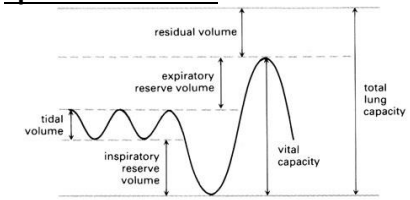


Gaseous Exchange:



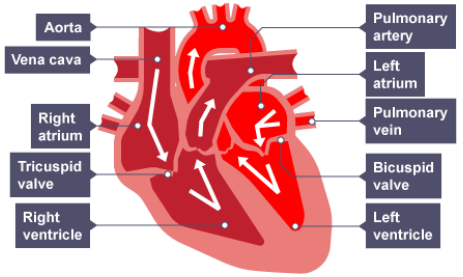
Alveoli = Blue ball sac of air
Capillaries = blood vessel surrounding the alveoli

Spirometer trace:



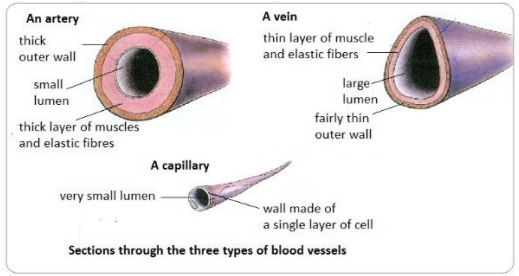
Week 8

Cardiovascular System

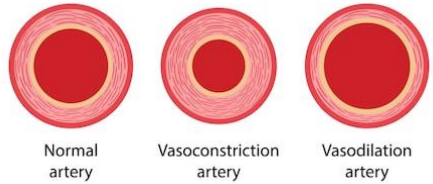


The cardiovascular system carries blood around the body and is the body's fuel supply. It comprises of the heart, blood and a series of arteries.

Blood Vessels:



Redistribution of blood during exercise



Heart Rate = The amount of times your heart beats per minute.
Cardiac Output = The amount of blood pumped out of the heart per **minute**.
Stroke Volume = the amount of blood pumped out of the heart per **beat.**
HR X SV = CO

A. Visual Elements Keywords

Line	Line is the path left by a moving point. A line can be horizontal, diagonal or curved and can also change length.
Shape	A shape is an area enclosed by a line. Shapes can be geometric or irregular.
Form	Form is a three dimensional shape, such as a cube, sphere or cone.
Tone	This refers to the lightness or darkness of something. This could be a shade, or how dark or light a colour appears.
Texture	This is to do with the surface quality of something. There are two types of texture: Actual texture really exists, so you can feel it or touch it; Visual texture is created using marks to represent actual texture.
Pattern	A design that is created by repeating lines, shapes, tones or colours.
Colour	Red, yellow and blue are primary colours, which means they can't be mixed using any other colours.

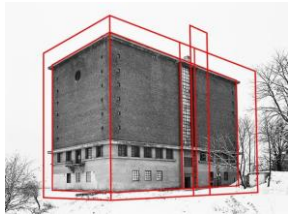
B. Key Knowledge 1: RULES of COMPOSITION

- ❑ **Rule of Thirds**
- ❑ **Balancing Elements**
- ❑ **Leading Lines**
- ❑ **Symmetry & Patterns**
- ❑ **Viewpoint**
- ❑ **Background**
- ❑ **Depth**
- ❑ **Framing**
- ❑ **Cropping**
- ❑ **Experimentation**

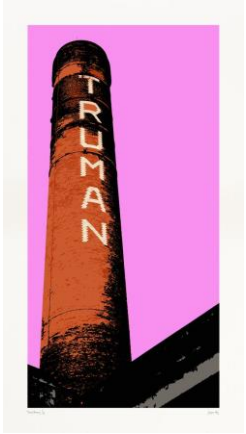
Tick once you have shown evidence of these in your photo shoots and edits

E. Expert Modelling:

Tom Manley



Alexey Bogolepov



Miles Donovan

Jayson Lilley

What Visual Elements / Rules of Composition can you see in this work?

GCSE PHOTOGRAPHY YEAR 10 – URBAN LANDSCAPES

Threshold Concepts:

1. Artists make marks, drawing our attention

2. Art communicates, in every sense

6. Art engages head, hands and heart

C. Key Knowledge 2: tick once you have used these techniques in Photoshop

- ❑ Adjusted and image to black and white showing various edits and grades of contrast
- ❑ Combined two or more images together manually and digitally
- ❑ Adjusted the colour of an image
- ❑ Imported hand made textures into Photoshop
- ❑ Combined and experimented all above techniques to create a digital image

D. Key Knowledge 3

How can Photography be used in different ways?

Why do we Photograph things / people / places?

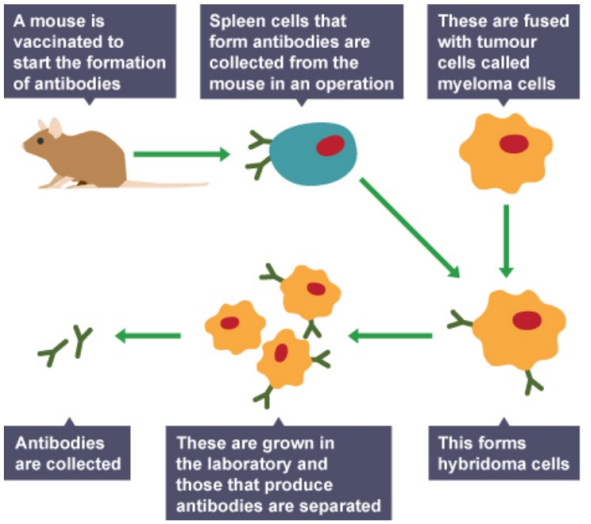
How has Photoshop changed Photography?

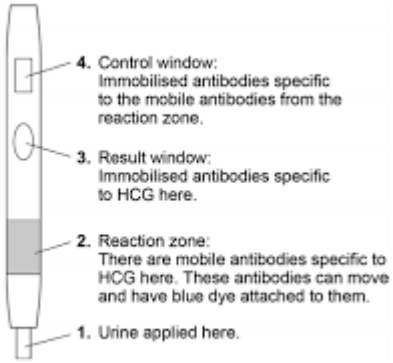
What different jobs can you do as a Photographer?

F. Wider thinking / further reading:

https://www.youtube.com/watch?v=n9oYwTMtAlw

Check out these helpful video tutorials in Photoshop

Lesson 1 Detection and Identification of Plant Diseases	Lesson 2 Plant Defences	Lesson 3 Making Monoclonal Antibodies
Plant diseases can be detected by: • Stunted growth • Spots on leaves • Areas of decay (rot) • Growths • Malformed leaves or stems • Discoloration • The presence of pests e.g. aphids  Identification can be made by: • Reference to a gardening manual or website • Taking infected plants to a laboratory to identify the pathogen • Using test kits that contain monoclonal antibodies **Plant diseases can be caused by:** • Pathogens (Tobacco Mosaic Virus and Rose Black Spot Fungus) • Insects e.g. Aphids • Mineral ion deficiencies: • Nitrate deficiency causes stunted growth • Magnesium deficiency causes chlorosis	Plants have developed physical and chemical defences. This stops them being eaten, and being infected by pathogens. **Physical Defences:** • A thick bark which forms an external layer of dead cells. • Cellulose cell walls act as a barrier against infection. • Leaves are covered with a thick waxy cuticle which stops their cells from becoming infected by bacteria and fungi. **Chemical defences** • Enzymes or toxic chemicals which attack insects, pathogenic bacteria and fungi. • Poisons to deter herbivores. • Stinging cells that inject irritating chemicals like histamines into herbivore skin, deterring the animals from consuming the plant. Plants have also developed **Mechanical adaptations:** • Thorns and hairs deter animals • Leaves droop or curl when touched • Mimicry to trick animals 	**Monoclonal antibodies are identical copies of one type of antibody.**  Monoclonal antibodies are produced from a single clone of cells. Using the above process allows a large amount of the antibody to be collected and purified. **Hybridoma** – a type of cancer cell which can quickly and indefinitely divide to yield monoclonal antibodies.

Lesson 4 Uses of Monoclonal Antibodies	Lesson 4 Uses of Monoclonal Antibodies (Continued)	
Monoclonal antibodies (MAB's) have many uses in diagnostics and disease treatment: • **Pregnancy test kits** – MAB's are specific to the Human Chorionic Gonadotropin Hormone produced in pregnancy. They will bind to the hormone if present and cause a colour change.  • **Diagnosis of Disease –** MAB's are specific to antigens found on the surface of pathogens, blood clots and cancer cells. • **Research –** to locate or identify specific molecules in a cell or tissue by binding to them with a fluorescent dye. • **Treatment of Disease -** for cancer MAB's are bound to a radioactive substance or a chemical which stops cells growing and dividing. It delivers the substance to the cancer cells without harming other cells in the body.	Monoclonal antibodies create more side effects than expected. They are not yet as widely used as everyone hoped when they were first developed.	

Lessons 1 & 2
Transition Metals

Physical properties of transition elements
Most metals are transition metals. They include iron, copper and chromium. The transition elements are in the central part of the periodic table.

The transition elements share some physical properties with all metals:
they conduct electricity in the solid and liquid states
they are shiny when freshly cut
Some properties of transition elements are different from those of the metals in group 1. Compared to other metals, most transition metals have:
higher melting points
higher densities
greater strength
greater hardness
Remember that these are typical properties – some transition metals may not show one or more of them. For example, mercury melts at just -39°C, so it is a liquid at room temperature.
The elements below have properties that are typical of transition elements:
chromium, Cr
manganese, Mn
iron, Fe
cobalt, Co
nickel, Ni
copper, Cu

The group 1 elements react quickly with oxygen in the air at room temperature. Most transition elements react slowly, or not at all, with oxygen at room temperature. Some transition metals react with oxygen on heating, for example:
copper + oxygen → copper oxide
$2Cu(s) + O_2(g) \rightarrow 2CuO(s)$
The group 1 elements react vigorously with cold water. Most transition elements react slowly with cold water, or not at all.
Iron reacts with water and oxygen at room temperature to form hydrated iron(III) oxide, or rust.
For more information on rusting, visit the **Using materials** study guide.
The group 1 elements react vigorously with the halogens. Some transition elements also react with halogens, for example:
iron + chlorine → iron(III) chloride
$Fe(s) + Cl_2(g) \rightarrow FeCl_3(s)$
Transition elements form ions with different charges. For example:
manganese forms Mn^{2+} and Mn^{3+} ions
copper forms Cu^{+} and Cu^{2+} ions
Metals that are not transition elements usually form white compounds. Transition elements form coloured compounds.

Lessons 3 & 4
Nano Particles + Applications of Nano Particles

Nanoparticles
Nanoscience is the study of structures that are between 1 and 100 nanometres (nm) in size. Most nanoparticles are made up of a few hundred atoms.

Particle	Diameter
Atoms and small molecules	0.1 nm
Nanoparticles	1 to 100 nm
Fine particles (also called particulate matter - $PM_{2.5}$)	100 to 2,500 nm
Coarse particles (PM_{10}, or dust)	2500 to 10,000 nm
Thickness of paper	100,000 nm

surface area to volume ratios
Nanoparticles have very large surface area to volume ratios compared to the same material in bulk, as powders, lumps or sheets.
For a solid, the smaller its particles, the greater the surface area to volume ratio. If the length of the side of a cube gets 10 times smaller, the surface area to volume ratio gets 10 times bigger.

Nanoparticulate materials
A substance that consists of nanoparticles is described as being nanoparticulate.
Some properties of nanoparticulate materials are different from the properties of the same material in bulk, as powders, lumps or sheets. This difference in properties is the result of two things:

- the tiny size of nanoparticles compared to the same material in bulk
- the large surface area to volume ratios of nanoparticulate materials compared to the same material in bulk

Properties and uses
Nanoparticulate materials have many uses. These include:

- medical treatments
- cosmetics, deodorants and sunscreens
- electronics
- catalysts

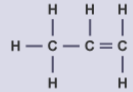
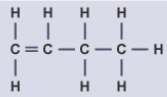
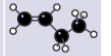
Small sizes
Sunscreens block harmful ultraviolet light from the sun reaching the skin. Zinc oxide blocks ultraviolet light, so is used in sunscreens. Bulk zinc oxide is white, but nanoparticulate zinc oxide is invisible on the skin. Many people prefer nanoparticulate sunscreen for this reason.

Lessons 5 & 6
Alkanes, Alkenes + Reactions of Alkenes

Alkenes
The alkenes form a homologous series. Like all homologous series, the alkenes:

- have the same general formula
- differ by CH_2 in molecular formulae from neighbouring compounds
- show a gradual variation in physical properties, such as their boiling points
- have similar chemical properties

General formula
The general formula for the alkenes is C_nH_{2n}, where n is the number of carbon atoms in the molecule.

Alkene	Molecular formula	Structure (showing all the covalent bonds)	Ball-and-stick model
Ethene	C_2H_4		
Propene	C_3H_6		
Butene	C_4H_8		

The ball and stick models on the right show that the covalent bonds are not really at angles of 90°, as shown in the structures.
The alkenes are unsaturated hydrocarbons:

- hydrocarbons, because they are compounds containing hydrogen and carbon only
- unsaturated, because they contain a C=C double bond, which means that they have two fewer hydrogen atoms than the corresponding alkane

The C=C bond is the functional group in the alkenes. It is responsible for the typical reactions of alkenes.

Reactions of alkenes
Like the alkanes, the alkenes undergo combustion. However, alkenes are less likely to combust completely, so they tend to burn in air with a smoky flame due to incomplete combustion.
Addition reactions of alkenes
The functional group, C=C, allows alkenes to undergo addition reactions. For example, ethene reacts with bromine to form 1,2-dibromoethane:
$CH_2{=}CH_2 + Br_2 \rightarrow CH_2BrCH_2Br$
It is easier to see what happens using structures with all their covalent bonds:

Lessons 7 & 8
Alcohols

Alcohols
The alcohols form a homologous series. Like all homologous series, the alcohols:

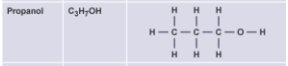
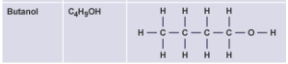
have the same general formula

differ by CH_2 in molecular formulae from neighbouring compounds

show a gradual variation in physical properties, such as their boiling points

have similar chemical properties

Functional group
The functional group in the alcohols is the hydroxyl group, -OH. It is responsible for the typical reactions of alcohols. Take care not to confuse the -OH group with the hydroxide ion, OH^-.

Alcohol	Formula	Structure (showing all the covalent bonds)
Methanol	CH_3OH	
Ethanol	C_2H_5OH	
Propanol	C_3H_7OH	
Butanol	C_4H_9OH	

Making ethanol by fermentation
Ethanol is the alcohol found in beer, wine and other alcoholic drinks. It is also used as a fuel for vehicles, either on its own or mixed with petrol. Ethanol can be produced by fermentation and concentrated using fractional distillation.
Fermentation
Fermentation is an anaerobic process:
glucose → ethanol + carbon dioxide
Yeast, a type of single-celled fungus, provides the enzymes needed for fermentation. If the yeast cells become too cold, fermentation happens very slowly, or may not happen at all. If the yeast cells become too hot, their enzymes become denatured and fermentation stops.
The typical conditions needed for fermentation include:

- sugars dissolved in water, and mixed with yeast
- an air lock to allow carbon dioxide out, while stopping air getting in
- warm temperature, 25-35°C

The yeast dies when the ethanol concentration reaches about 15%. Fermentation is a slow reaction and takes several days or weeks to finish. If air is present, the oxygen causes the ethanol to oxidise to ethanoic acid, so the drink tastes of vinegar

Lessons 9 & 10
Reactions of Alcohols

Reactions of alcohols
Uses of the first four alcohols
Methanol is used as a chemical feedstock. It is toxic, so it is deliberately added to industrial ethanol (methylated spirits) to prevent people from drinking it.
Ethanol is the alcohol present in alcoholic drinks. It is also used as a fuel and a solvent.
Propanol and butanol are also used as solvents and fuels.

Combustion
The alcohols undergo complete combustion to form carbon dioxide and water. For example, ethanol is used as a fuel:
ethanol + oxygen → carbon dioxide + water
$C_2H_5OH + 3O_2 \rightarrow 2CO_2 + 3H_2O$
When less oxygen is present, incomplete combustion will occur, producing water and either carbon monoxide or carbon.

Reactions with sodium
If a small piece of sodium is dropped into ethanol, bubbles of hydrogen gas are produced and the liquid contains sodium ethoxide. The reaction is:
sodium + ethanol → sodium ethoxide + hydrogen
$2Na + 2C_2H_5OH \rightarrow 2C_2H_5ONa + H_2$
Methanol, propanol and butanol undergo similar reactions.

Solubility in water
When the alcohols with the shortest hydrocarbon chains, eg methanol, ethanol or propanol, are added to water, they mix easily to produce a solution. However, the solubility decreases as the length of the alcohol molecule gets longer, so butanol is less soluble than propanol. It may not mix easily, and two distinct layers might be left in the container.

Oxidation of alcohols
The alcohols can also be oxidised without combustion to produce carboxylic acids. For example, ethanol can be oxidised to ethanoic acid using an oxidising agent.
It is easier to understand what happens if ethanol is shown as CH_3CH_2OH in the balanced equation:
ethanol + oxidising agent → ethanoic acid + water
$CH_3CH_2OH + 2[O] \rightarrow CH_3COOH + H_2O$
Each of the two oxygen atoms provided by the oxidising agent are shown as [O]. Notice that the left-hand side of the ethanol molecule is unchanged. The reaction involves the -OH group on the right-hand side.

Lessons 11 & 12
Carboxylic Acids and Making Esters

Carboxylic acids
The carboxylic acids form a homologous series. Like all homologous series, the carboxylic acids:

- have the same general formula
- differ by CH_2 in molecular formulae from neighbouring compounds
- show a gradual variation in physical properties, such as their boiling points
- have similar chemical properties

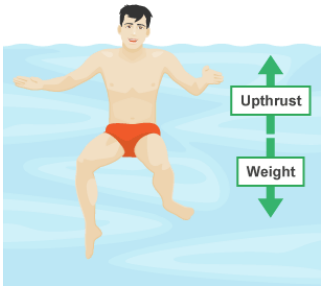
Functional group
The functional group in the carboxylic acids is the carboxyl group, -COOH. It is responsible for the typical reactions of carboxylic acids, which are weak acids.
Vinegar is a dilute solution of ethanoic acid.

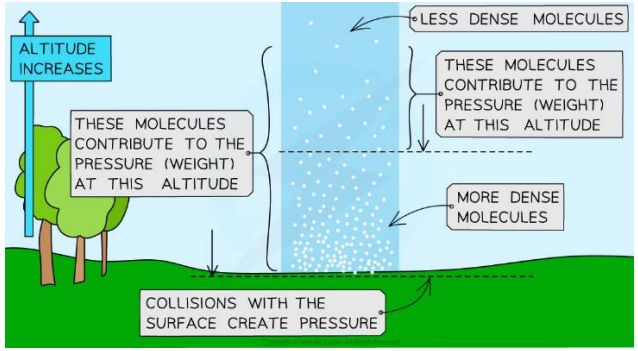
Name	Formula	Structure (showing all the covalent bonds)
Methanoic acid	HCOOH	
Ethanoic acid	CH_3COOH	
Propanoic acid	C_2H_5COOH	
Butanoic acid	C_3H_7COOH	

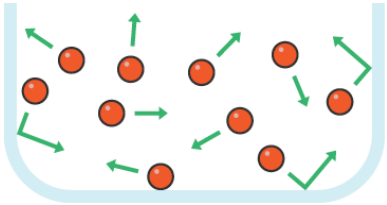
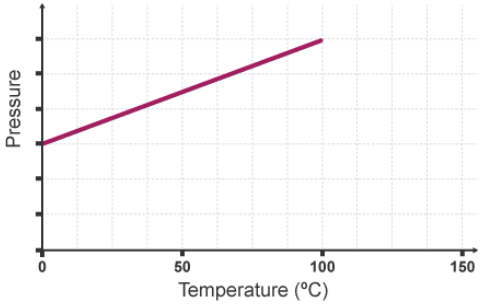
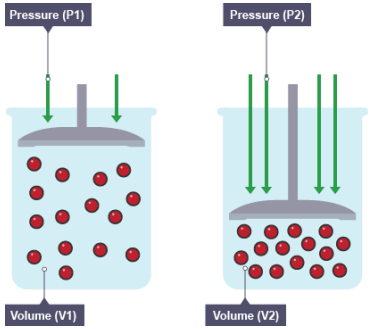
Acid properties
The carboxylic acids have the **typical properties of acids**. For example, they:

- dissolve in water to form acidic solutions with pH values less than 7
- react with metals to form a salt and hydrogen
- react with bases to form a salt and water
- react with carbonates to form a salt, water and carbon dioxide

These properties are due to the –COOH functional group.
Making esters
Carboxylic acids can react with alcohols to make esters. Esters are organic compounds which all contain the functional group -COO-. Esters have fruity smells and can be used as solvents.
The general equation for the formation of an ester is:
alcohol + carboxylic acid → ester + water

Lesson 1 Moments, Levers and Gears	**Lesson 2** Pressure in solids and fluids	**Lessons 3** Upthrust
The turning effect of a force is called the **moment** of the force. moment of a force = force × distance $M = Fd$ • moment of a force, *M,* is in newton-metres, Nm • force, *F*, in newtons, N • distance, *d*, is the perpendicular distance from the pivot to the line of action of the force, in metres, m Perpendicular distance means the distance between the force at the pivot, at right angles to the direction the force is acting in ("line of action"). If an object is balanced, the total clockwise moment about a pivot equals the total anticlockwise moment about that pivot. This is the **principle of moments**. Levers and gears act as **force multipliers** by increasing the turning effect of a force.	A fluid can be either a liquid or a gas. The pressure at the surface of a fluid can be calculated using the equation: pressure = force (normal to a surface)/ area (of that surface) $p = F/A$ • pressure, p, in pascals, Pa, • force, F, in newtons, N • area, A, in metres squared, m^2 Pressure in a liquid increases with depth due to the increased mass of fluid above that point. The pressure will also depend on the density of the fluid. pressure = height of the column × density of the liquid × gravitational field strength $p = h\rho g$ • pressure, p, in pascals, Pa • height of the column, h, in metres, m density, ρ, in kilograms per metre cubed, kg/m3 gravitational field strength, g, in newtons per kilogram, N/kg	A partially (or totally) submerged object experiences a greater pressure on the bottom surface than on the top surface. This creates a resultant force upwards. This force is called the upthrust. An object floats when its weight is equal to the upthrust.  An object less dense than the surrounding liquid displaces a volume of liquid equal to its own weight. So the less dense object will float. An object sinks when its weight is greater than the upthrust. An object denser than the surrounding liquid is unable to displace a volume of liquid equal to its own weight. The denser object sinks.

Lesson 4 Atmospheric pressure	**Lesson 5** Force as the rate of change of momentum	**Lesson 6** Conservation of momentum
The atmosphere is a thin layer of air round the Earth. The atmosphere gets less dense with increasing altitude. Atmospheric pressure decreases as the height of a surface above ground level increases. This is because, as the altitude increases: • the number of air molecules decreases • the weight of the air decreases • there is less air above a surface  	When a force acts on an object that is moving, or able to move, a change in momentum occurs. The equations F = m × a and a = (v – u)/t lead to the equation $F = \frac{m\Delta v}{\Delta t}$ where mΔv = change in momentum ie **force equals the rate of change of momentum** Airbags, seat belts and crumple zones all increase the time over which it takes a person to come to a stop in a collision. The rate of change of momentum is lower. This reduces the average force on the person, and decreases the chance of injury. Reducing the rate of change of momentum (i.e., the force) is how other safety features reduce the risk of serious injury: • Cycle helmets • Crashmats for gymnastics • Cushioned playground surfaces	Momentum is conserved unless an external force acts. momentum before = momentum after. Explosions: An “explosion” here just means two objects initially together at rest that move apart: • A person stepping off a stationary skateboard • Two spring-loaded trollies held together and released • An actual explosion (e.g., a gun or canon recoiling) Collisions: In a collision, two objects come together and move as one. This could be: • A moving object collides with a stationary one and they move off together (e.g., a car drives into a parked car) • A moving object collides with a slower moving one and they move off together • Two objects moving in opposite directions hit and move off together

Lesson 1 Pressure and volume in gases	**Lesson 2** Boyle's Law	**Lesson 3** Work done on a gas
The particles in a gas are constantly moving in random directions, and collisions between particles or with the wall of the container give rise to pressure.  As a gas is heated the particles move faster and the pressure increases.  If a balloon is squeezed, the volume of the balloon decreases and the pressure of the gas increases because collisions become more frequent. The volume of a gas is **inversely proportional** to the pressure in the gas.	Boyle's law states that for a fixed mass of gas at a constant temperature: $$pressure \times volume = constant$$ $$pV = constant$$ Where the pressure p is measured in pascals (Pa) and the volume V in cubic metres (m^3). If the temperature of a gas stays the same, the pressure of the gas increases as the volume of its container decreases. This is because the same number of particles collides with the walls of the container more frequently as there is less space. However, the particles still collide with the same amount of force. The change in volume or pressure for a gas at constant temperature before and after a change can be calculated with the equation: $$p_1V_1 = p_2V_2$$	The pressure in a gas can be increased by: • Increasing the temperature, which increases the rate of collisions and the force of each collision • Decreasing the volume, which increases the rate of collisions.  When a force is applied to compress a gas, energy is transferred to the gas and work is done on the gas. Mechanical work transfers energy from a person or machine's store of chemical energy to the internal energy store of the gas. The work done in compressing the gas can be calculated using the equation: $$work\ done = force \times distance$$ As the volume is reduced, the pressure in the gas increases. If the temperature is not fixed the increase in internal energy increases the kinetic energy of the gas particles and so the temperature of the gas increases.

Year 10 Spanish Knowledge Organiser cycle 1

Complete your weekly assignment on Seneca

Extensions:

- Create revision cards for each of the main tenses studied to help you remember how to form them.
- Find a picture in a magazine/online and write a photo description
- Do 10 minutes of Duolingo every day to build your vocabulary
- Write a glossary of vocabulary we see in class – memorise it and test yourself at home.

	Week 1	Week 2	Week 3	Week 4	Week 5-8
BTEC SPORT UNIT 2	Understanding the rules, regulations and scoring systems in two sports • Weblink to NGB and IGB and pictures of your main sport • Main rules and regulations in this sport. • number of players and substitutes, • Playing surface • Equipment required – • Health and safety in your sport • Facilities, • Time, how long do games lasts? • Scoring system • Any way you can improve the scoring systems in this sport? • What are the key rules of the sport for a 10-11-year-old to look out for? • Are there any unwritten rules in this sport?	the roles and responsibilities of each official. • name of the official e.g. umpire, referee, official, how many are there, referee and 2 assistant referees, • What is each officials jobs/role? • Appearance of the official, equipment they should have, fitness they should have and qualifications they should have. • How do the officials control the players? Are there rules to help them? • Why are good communication skills so important for an official? • Why is it that the official is accountable to the spectators? Link to fair play • How has or how could technology aid the officials in this sport? • How can you modify this sport for someone who can't physically take part in the full game?	filming for task videos – 1 sport 4 scenarios Plan four specific situations where you can demonstrate the rules. You need to be the official so you must know the rule. Badminton example: • The server hits the shuttlecock into the net during a serve. • One of the players hits the net with their racket. • The scores in a game are 29 each. • The shuttlecock lands on the back boundary line.	filming for task videos – 1 sport 4 scenarios For each situation, you must demonstrate to the children how the rules and regulations will be applied, what actions should be taken and how this should be done by the official who has responsibility for applying the rule.	Complete task

	Week 9	Week 10	Week 11	Week 12	Week 13-17
BTEC SPORT UNIT 2	Technical and tactical demands of the sport Understand the techniques you require for your sport e.g. passing, shooting, tackling, dig, set, spike, smash, serving, drop shots, bowling, catching, dribbling, heading etc Understand the tactical requirements you need for your sport. e.g. defending, attacking, decision making, offsides, set plays, choice of shot, use of space, change of direction, change of pace, marking, formations	plan drills and games Plan drills that demonstrate the technical requirements of each sport in isolated practices. This should include specific drills which are used to develop a performer's ability to apply the skill/technique correctly. Plan a game demonstrating the relevant techniques and tactics of each sport in conditioned practices/games. These could include adapted competitive situations which further develop skills and techniques and also includes tactical applications. E.g. 2 on 1, 3 on 1, 1 on 1. Finally, each video should show you performing in a competitive situation within each sport.	filming of drills This can be done in lessons or at your own training, practices or matches.	filming of games This can be done in lessons or at your own training, practices or matches.	Complete task

	Week 18	Week 19	Week 20	Week 21	Week 22-25
BTEC SPORT UNIT 2	Understanding the following demands in two sports: Physical demands Technical demands Tactical demands Use of video analysis Tally charts 10 points scales Analysis methods: graphs, Venn diagrams	Designing observation checklist d sport 1 sport 2	Completion of sport 1 checklist using video	Completion of sport 1 checklist using video	Complete task

	Week 1	Week 2	Week 3	Week 4	Week 5
BTEC SPORT UNIT 5	**SHORT TERM EFFECTS OF EXERCISE -** MUSCULOSKELETAL SYSTEM **<u>Skeleton</u>** ● **Increased production of synovial fluid** for joint lubrication and nourishment ● **Increased joint range of movement** due to increase in blood flow and increased muscle temperature **<u>Muscles</u>** ● **Micro-tears in muscle fibres**, causing the muscle to rebuild itself and become slightly bigger and stronger ● Exercise (high-impact activity) encourages **new bone formation** ● **Increased metabolic activity**. Burning more calories when active.	**SHORT-TERM EFFECTS OF EXERCISE -** CARDIORESPIRATORY SYSTEM ● **Increased heart rate** due to the heart having to work harder to pump oxygenated blood around the body ● **Increased breathing rate**, in order to supply more oxygen to working muscles and remove carbon dioxide ● **Increased blood flow** a higher rate means more blood is flowing around the body. The contracting muscles help pump the blood back to the heart ● **Sweat production** and skin reddening ● **Re-distribution of blood flow** via the vasoconstriction (narrowing) of arterioles supplying inactive parts of the body and vasodilation (opening) of arterioles supplying skeletal muscles with more blood and nutrients	**LONG-TERM ADAPTIONS** – MUSCULOSKELETAL SYSTEM **<u>Skeleton</u>** 1. **Bone Density** Thicker, stronger bones 2. **Decreased risk of Osteoporosis** Stronger bones decrease the risk of fractures **3. Connective Tissues** Ligaments and tendons strengthen **4. Increased Joint Stability** Decreases the chances of injury 5. **Cartilage** Becomes thicker protecting the joints **<u>Muscles</u>** 6. **Muscular Hypertrophy** Muscles become bigger and stronger 7. **Mitochondria** The energy factories of the cell become bigger and can create more energy 8. **Improved Posture** Less slouching/leaning	**LONG-TERM ADAPTIONS** – CARDIORESPITRATORY SYSTEM **1. Changes to your heart** Cardiac hypertrophy and bradycardia **2. Decreased risk of hypertension** Reduced blood pressure **3. Increase vital capacity** Breathing becomes stronger **4. Increased maximal oxygen uptake (VO2 max)** Greater delivery of oxygen to the working muscles **5. Increased efficiency of oxygen delivery and waste product removal** More oxygen and glucose to the muscles and more CO2 and lactic acid removed **6. Increased lung efficiency and gaseous exchange.** Capillarisation means more)2 and CO2 can be exchanged at the alveoli	TASK HAND IN

	Week 6	Week 7	Week 8	Week 9	Week 10
BTEC SPORT UNIT 5	**ATP** Aka adenosine tri-phosphate The energy currency of the cell. When it splits into ADP + P energy is released for all the cells requirements. **ATP-CP anaerobic system** Creatine phosphate (CP) splits with the phosphate (P) joining ADP to form ATP. The creatine then finds another P to join with. High intensity of performance – short duration. This system lasts 5-8s before running out but allows you to move very fast. e.g. weightlifting, shot put, kicking a ball as hard as possible, 80m sprint	**Glycolysis anaerobic system** The partial breakdown of glucose – used after the ATP-CP system has run out. Medium intensity of exercise – medium duration. This system releases lactic acid (because there's not enough oxygen) when creating ATP. This system can last 45s when working maximally or 3 mins when at 75% of maximal effort. e.g. 400m, 800m athletics, running around the football pitch/netball court with no rest.	**Aerobic energy system** The complete breakdown of glucose – often used once the ATP-CP and glucose anaerobic systems have run out. Low intensity of exercise – long duration. This system can also use fats. It doesn't release any fatiguing bi-products so can be used for up to two hours. e.g. marathon, jogging/walking around a football pitch. This system is also very important during recovery. This system is used all of the time when not exercising.	Complete task	Complete task