



BOURNEMOUTH SCHOOL

Year 9

Knowledge Organiser 4

Spring Term: 2024-25

Name: _____ Master Copy _____

Registration Form: 9

✓Hard Work

✓Discipline

✓Smart Appearance

✓Respect

Bournemouth School

Knowledge Organiser: Year 9 Spring Term 4

'Knowledge is power' by Francis Bacon

A knowledge organiser provides you with all the most important knowledge you need for each unit of study this half term. Your aim is to transfer all of this information into your long-term memory so you can use it in your lessons and further expand your understanding of this work.

How to use your knowledge organiser (KO):

1. Ensure you have your KO and Homework Learning journal with you at all times in school and when you need to do your homework at home.
2. In lessons when you have covered information that appears on your KO, your teacher will ask you to put a tick next to that section. This means that is now added to what you must learn for homework.
3. Initially, follow your homework timetable to decide what to revise each evening.
4. There are 4 strategies that you can use to revise. They are progressively more challenging so always start with the first in the list.

a. Look Cover Write Check

- i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.
- ii. LOOK carefully at the subject and section of your KO you want to revise and try to remember as much as you can. Remember this should be a ticked section.
- iii. Now COVER this information so you can't read it.
- iv. WRITE out what you can remember word for word in your Homework Learning Journal.
- v. CHECK what you have written by comparing it to your KO. Tick each correct word in green pen and correct any errors you have made.
- vi. Repeat this process until you are confident you can remember everything you need.

AIM:

You should be able to repeat the information by rote

b. Self or peer quizzing

- i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.
- ii. Write out a list of questions you could ask either yourself or a friend about this section of the KO. Write these in your Homework Learning Journal.
- iii. If you are working on your own, cover the KO and write a full answer to each question.
- iv. If you are working with a partner swap books and copy down their questions and have a go at answering them.
- v. Now uncover the KO and with a green pen correct your work.

AIM:

You should be able to repeat the information by rote but with a good understanding

c. Playing with words and sentences

- i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.

- ii. You now want to check how well you have learnt the information in your KO.
- iii. Definitions – look at words that are used in this section. Can you write a definition in your own words?
- iv. Rephrasing – can you rewrite the sentences or explanations in your own words?
- v. Summary – can you summarise the main points of this section of the KO?
- vi. Synonyms – can you write synonyms for key words and ideas?
- vii. New Sentences – can you write a sentence that includes the key vocabulary or definitions that you have learnt?

AIM

You should be able to use the information in your KO in a flexible and confident way in your writing.

d. Think it, Link it

- i. This is a technique to use towards the end of the half term when you are revising all of the KO.
- ii. Think of the links or connections between different sections of your KO.
- iii. Write these out in your own words in your Homework Learning Journal.
- iv. Think about the links between a particular section of your KO and what you have learnt in your lessons. Can you expand on this section by linking it to your wider knowledge?
- v. Write this out in your Homework Learning Journal.

AIM

You should be able to link your homework and your lessons to show a confident understanding of the work covered.

Homework Learning Journal

- 1. Always write the subject and the date when you start your homework.
- 2. Always write the strategy that you are going to use for your homework.
- 3. Always use a ruler to underline titles and dates.
- 4. Use a blue or black pen to complete your homework or a pencil if you need to draw.
- 5. Use a green pen to complete corrections of your work.
- 6. **You are expected to complete half a side of your Homework Learning Journal each evening as a minimum.**

Checking:

Your tutor will check your Homework Learning Journal at least once a week. If they are concerned that you aren't doing your homework properly they will offer support and guidance. If you don't respond to this guidance you will be added to the afterschool 'Success club' where a member of staff will help you complete your homework.

DO NOW tasks:

At the start of every lesson you should expect a Do Now task. This is a low stakes retrieval quiz on what you have learnt so far. If you have completed your homework this should be easy. The aim is to get 100% in each of these. If you miss this target occasionally, don't worry. If it happens regularly your teacher will ask your tutor to have a chat and offer you support.

Maths:

Your teacher will set you tasks to complete on Dr Frost Maths. This will be set every week on a Monday and will be collected in and checked on a Friday. If this has not been completed you will be issued a Detention on a Wednesday Lunchtime.

How long should I spend on my homework?

| Key Stage 4 | | | | | |
|-------------|--------------------|--------------------|-------------------|--------------------|--------------------|
| Week 1 | | | | | |
| Time | Monday | Tuesday | Wednesday | Thursday | Friday |
| 5 mins | MFL | MFL | Physical Activity | MFL | MFL |
| 10 | Maths | English | | Maths | English |
| 10 | Biology | RS | | Chemistry | Physics |
| 10 | Option C | Option D | | Option A | Option B |
| 55 | Reading / Revision | Reading / Revision | | Reading / Revision | Reading / Revision |
| Week 2 | | | | | |
| Time | Monday | Tuesday | Wednesday | Thursday | Friday |
| 5 mins | MFL | MFL | Physical Activity | MFL | MFL |
| 10 | Maths | English | | Maths | English |
| 10 | Biology | RS | | Chemistry | Physics |
| 10 | Option C | Option D | | Option A | Option B |
| 55 | Reading / Revision | Reading / Revision | | Reading / Revision | Reading / Revision |

- You should spend about 35 minutes revising your KO each day.
- You should spend 25 minutes either reading or revising each day.
- This timetable is a guide. If you want to spend longer revising one subject that you find more difficult and less time on one you find easy, that is your choice.
- We would like you to spend one evening involved in a physical activity. This might be a sports club, a run, a game of football with friends or just a nice walk with the dog. Ask your PE teacher if you need guidance with this. It doesn't have to be on a Wednesday.



Assessment Objectives - This is how you are marked for coursework and Exam.
There are 24 marks to gain for each AO.
60% of your GCSE mark is coursework and 40% is your exam mark.

A01 EXPLORE

DEVELOP

DEVELOP IDEAS

INVESTIGATE & RESEARCH
OTHER ARTISTS WORK

ANALYSE

ANNOTATE

Artist research pages.

- Visits to exhibitions and galleries.
- Your own responses in the style of the artist.
- Interviews with artists/photographers.
- Annotate and analyse what you have found out.

A02 REVIEW

REFINE

EXPERIMENT

EXPLORE DIFFERENT IDEAS
AND MEDIA

A RANGE OF TECHNIQUES & PROCESSES

SELECT

IMPROVE

Experimenting in response to your chosen artists.

- Use relevant materials and techniques to experiment with
- Experiment with new materials, tools and techniques as well as familiar ones.
- Try out different combinations of media and techniques
- Practise and refine your use of your chosen media, tools and techniques

A03 EVIDENCE

RECORD

PRESENT IDEAS

PRIMARY OBSERVATION
DRAWING, PAINTING,
PRINTING, PHOTOGRAPHY,
WRITING, PHOTOGRAPHY...

ANNOTATE

DIFFERENT MEDIA

Title page.

- Mind Map.
- Mood-boards.
- Bullet points
- Notes
- Longer paragraphs
- Photographs.
- Observational drawings
- Sketches
- Designs
- Diagrams
- Editing on Photoshop

A04 OUTCOME

PRESENT

FINAL IDEAS

DEVELOPED AS PLANNED
CLEARLY RESPONDS TO
ARTISTS EXPLORED

CONNECTION

CONCLUSION

Plans and drawings of final piece ideas.

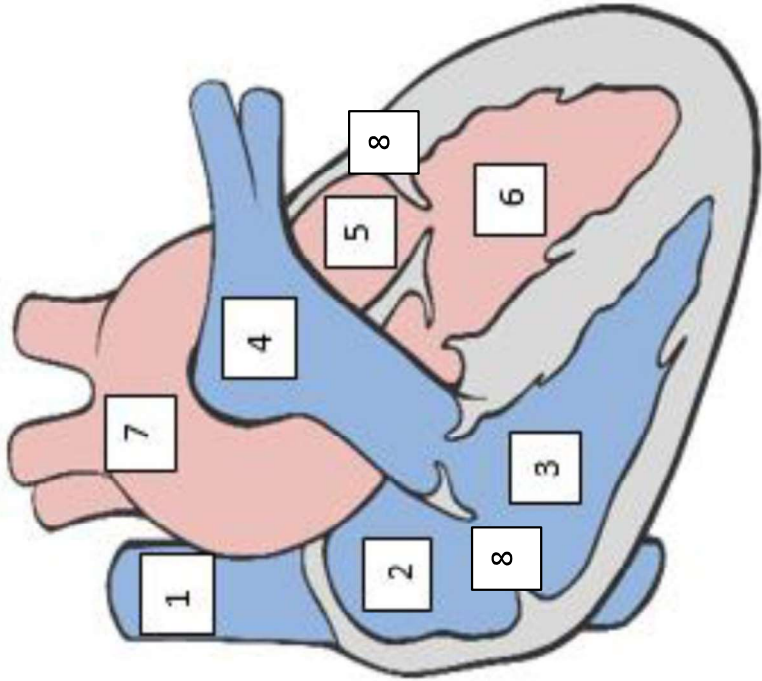
- Mini mock-ups and experiments for final piece.
- Creating an original final piece, that is clearly inspired by your research and creative journey.
- Evaluation of final piece (how does your piece link to the project theme?)



| Health | | ✓ |
|--------------|--------------------------------------------------------------------------------------|---|
| Term | Definition | |
| Cancer | Uncontrolled cell division | |
| Benign | Doesn't spread | |
| Malignant | Does spread in the blood | |
| Risk factors | Increase the chance of getting a disease, e.g. obesity is a risk factor for diabetes | |

| Parts of the heart | | | ✓ |
|--------------------|------------------|------------------------------------------------------------------------|---|
| # | Structure | Function | |
| 1 | Vena cava | Major vein carrying blood back to the heart from the body | |
| 2 | Right atrium | Smaller chamber of the heart which fills with blood from the vena cava | |
| 3 | Right ventricle | Large chamber which pumps blood to the lungs | |
| 4 | Pulmonary artery | Artery carrying blood from the heart to the lungs | |
| 5 | Left atrium | Small chamber that fills with blood from the lungs | |
| 6 | Left ventricle | Large chamber which pumps blood around the body | |
| 7 | Aorta | Major artery carrying blood away from the heart to the body | |
| 8 | Valves | Prevent backflow of blood | |

| Components of blood | | | ✓ |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------|--|---|
| Component | Function | | |
| Red blood cells | Transports oxygen in the blood. No nucleus to allow more space for haemoglobin and a biconcave shape to give a large surface area. | | |
| White blood cells | Cells in the blood that fight infection caused by pathogens. | | |
| Platelets | Fragments of cells that cause clotting of blood at a wound, to reduce blood loss. | | |
| Plasma | The liquid part of the blood, mostly made of water, but with substances like glucose, proteins, ions and carbon dioxide dissolved in it. | | |

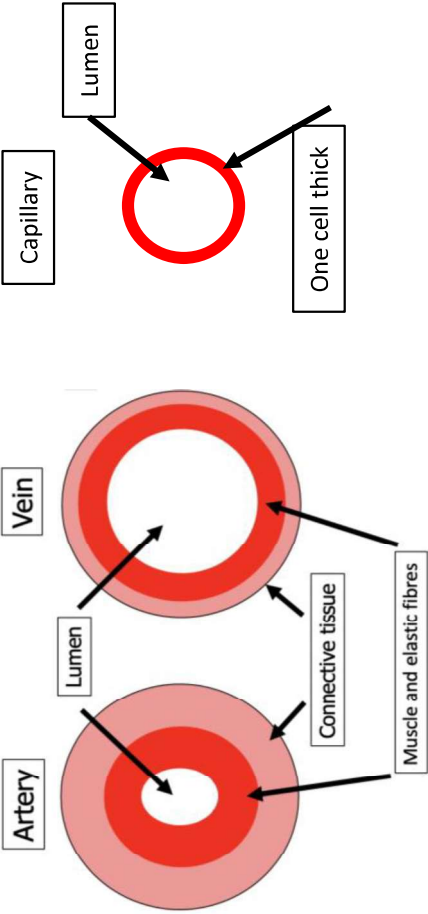




B2b Heart and Health

| Helping the heart | | | | ✓ |
|------------------------|-----------------------------------------------------|------------------------------------------|---------------------------------------|---|
| Treatment | What it is | Advantage | Disadvantage | |
| Stent | Wire mesh opens up a blocked artery | Keeps artery open, low risk surgery | Fatty material can rebuild. | |
| Statin (drug) | Reduces cholesterol | Reduces fat being deposited in arteries. | Side effects e.g. liver damage | |
| Heart transplant | Replacement heart from a donor. | Long term | Major surgery, could be rejected | |
| Artificial heart | Man -made heart used while waiting for a transplant | Not rejected, keeps patient alive. | Short lifetime, limited activity | |
| Mechanical heart valve | Mechanical replacement of faulty heart valve. | Can last a lifetime | Can damage red blood cells | |
| Biological heart valve | Biological replacement of faulty heart valve. | Doesn't damage red blood cells. | Valve hardens and may need replacing. | |

| Blood vessels | | | | ✓ |
|---------------|-----------------------------------|-------------------------------|--------------------|---|
| artery | Thick muscle wall and small lumen | Carries blood AWAY from heart | Oxygenated blood | |
| vein | Thin muscle wall and large lumen | Carries blood IN to heart | Deoxygenated blood | |

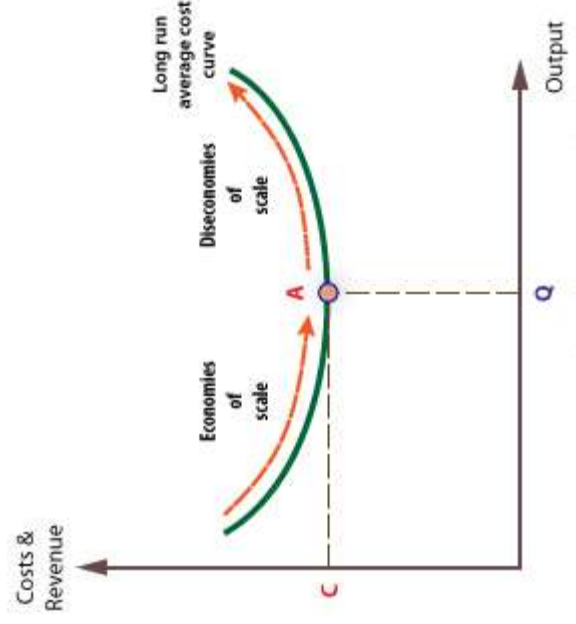


| Definitions | | <input checked="" type="checkbox"/> |
|-----------------------------|----------------------------------------------------------------------------------------|-------------------------------------|
| Organic (Internal) Growth | When a business grows by expanding its own activities | |
| External (Inorganic) growth | Growing the business by working with other businesses | |
| E-commerce | The act of buying or selling a product using an electronic system such as the internet | |
| Outsourcing | When a business uses another business to carry out tasks | |
| Franchisee | The entrepreneur who buys the right to trade under the name of the franchisor. | |
| Franchisor | The original business owner who sells a franchise. | |
| Franchise | When a franchisor sells the rights to its products to a franchisee. | |
| Merger | When two or more businesses join together to form a new business | |
| Takeover | When one business buys control of another. | |

| Methods of expansion | | <input checked="" type="checkbox"/> |
|------------------------|-------------------------|-------------------------------------|
| <u>Organic growth:</u> | <u>External Growth:</u> | |
| E-commerce | Merger | |
| Opening new stores | Take over | |
| Outsourcing | | |
| Franchising | | |

| Benefits and drawbacks of expansion | | <input checked="" type="checkbox"/> |
|-------------------------------------|-------------------------------|-------------------------------------|
| <u>Benefits:</u> | <u>Drawbacks:</u> | |
| Economies of scale | Risk of diseconomies of scale | |
| Greater market power | Slower decision making | |
| Reduced risk if takeover | Demotivated staff | |
| Image | Expensive | |

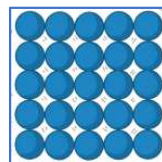
| Economies and Diseconomies of scale | | <input checked="" type="checkbox"/> |
|--------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------|
| <u>Economies of scale:</u> | <u>Diseconomies of scale:</u> | |
| As output increases average unit cost falls | Average unit cost increases as output increases | |
| Types: Purchasing Technical Managerial | Causes: Poor communication Poor coordination Poor control | |



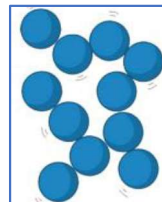
Chapter 2 – Bonding, Structure and Properties of Matter

| Keyword | Learn | ✓ |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Allotrope | Different physical forms in which an element can exist. Graphite, charcoal, and diamond are all allotropes of carbon | |
| Covalent bond | Sharing of pairs of electrons between two non-metal atoms, giving each a full outer shell of electrons | |
| Electrostatic forces | Forces of attraction between oppositely charged particles. | |
| Giant Ionic Lattice | A regular 3-D arrangement of alternating positive and negative ions held together by strong electrostatic forces of attraction | |
| Intermolecular forces | Forces which exist between covalently bonded molecules. The strength of the intermolecular forces impact physical properties like boiling/melting point. | |
| Ion | An atom or molecule with an electric charge due to the loss or gain of electrons. | |
| Ionic bond | Strong electrostatic force of attraction between oppositely charged ions. | |
| Ionic compound | Chemical compound formed of ions arranged in a giant lattice, held together by strong electrostatic forces. | |
| Metallic bond: | Strong electrostatic force of attraction between positive metal ions and delocalized negatively charged electrons. | |

States of Matter – you must be able to represent as particle diagrams



Particles hold a regular arrangement and vibrate in fixed positions – have the least amount of energy. Solids are not compressible.



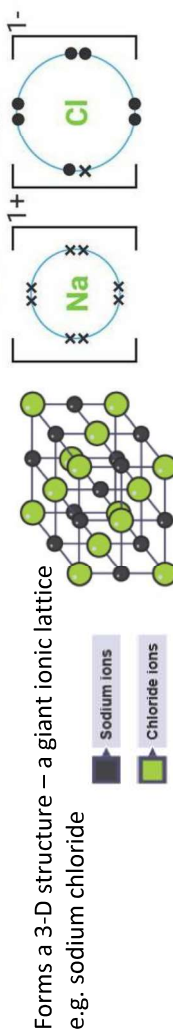
Particles are arranged randomly, close together and are able to move past each other. Liquids are not compressible.



Particles are relatively spread out, move randomly in all directions and have most energy. Gases are compressible.

Giant Ionic Lattices – you must be able to draw electron transfer diagrams to represent the formation of ionic bonds

A metal atom loses electron(s) to form a positively charged ion and a non-metal gains these electron(s) to form a negatively charged ion.



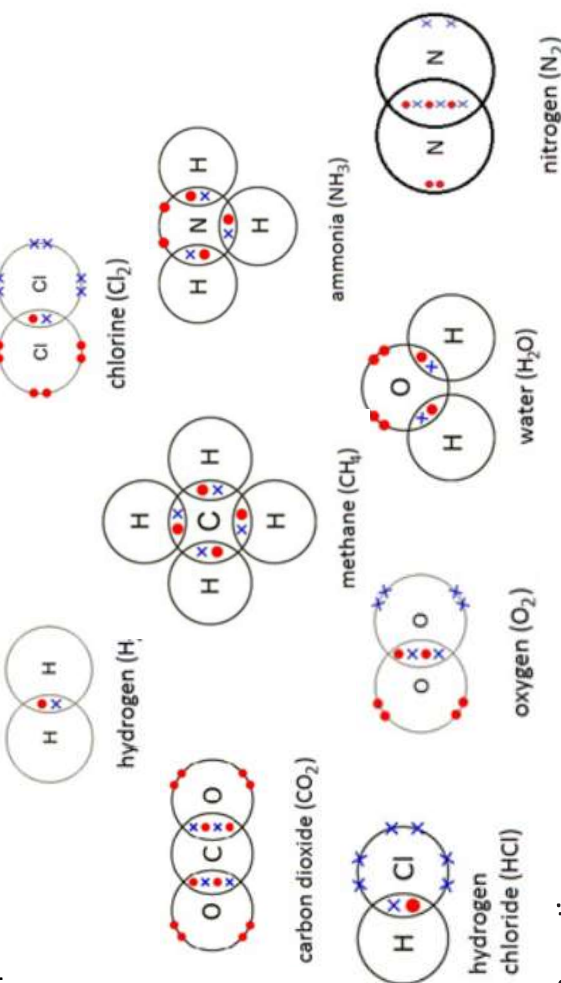
Forms a 3-D structure – a giant ionic lattice

e.g. sodium chloride

Properties

- High melting and boiling points as a lot of energy is needed to overcome the strong electrostatic attraction between positive and negative ions
- Conduct electricity only when molten or dissolved in water because the ions are free to move and carry charge. Ions are not free to move in solid ionic substances.

Simple Covalent Molecules – you must be able to draw dot and cross diagrams to represent these molecules



Properties

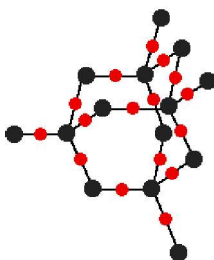
- Low melting and boiling points – due to weak intermolecular forces that require little energy to overcome
- Do not conduct electricity – contain no charged particles that are free to move

Chapter 2 – Bonding, Structure and Properties of Matter

Giant Covalent Structures – you must be able to recognise these diagrams

Silicon dioxide (silica), Formula SiO_2

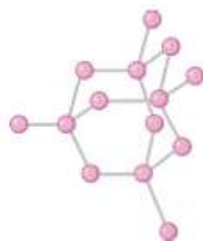
- High melting and boiling point. Many strong covalent bonds between Si and O atoms require large amount of energy to break
- Does not conduct electricity. No charged particles free to move through structure and carry charge



Allotropes of Carbon

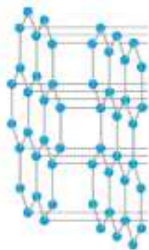
1. Diamond, Formula C

- High melting and boiling point. Hard. Each C atom bonded to 4 others in tetrahedral shape. Many strong covalent bonds between atoms require large amount of energy to break
- Does not conduct electricity. No charged particles free to move through structure and carry charge



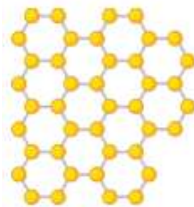
2. Graphite, Formula C

- High melting and boiling point. Each C atom bonded to 3 others in hexagonal shape. Many strong covalent bonds between atoms require large amount of energy to break
- Soft. Weak forces of attraction between layers easily broken
- Good electrical conductor. Delocalised electrons free to move through structure and carry charge



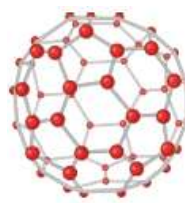
3. Graphene, Formula C

- Single layer of carbon atoms arranged as in graphite.
- Melting and boiling point as for graphite
- Conductivity as for graphite
- Forms strong, flexible sheets which are transparent

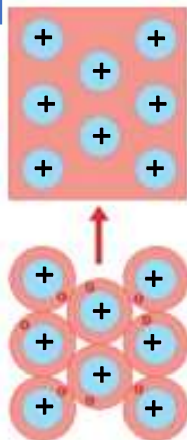


4. Fullerenes and Nanotubes, Formula C_n

- Macromolecules, e.g. Buckminsterfullerene C_{60} , with carbon atoms bonded in hexagons & pentagons
- Open cage structures useful in drug delivery systems
- Spherical molecules can roll so useful as lubricants
- Long tube structures form strong lightweight carbon fibres with good electrical conductivity



Giant Metallic Structures



Giant Metallic Structure = layers of positive metal ions surrounded by a sea of delocalised electrons

- High melting and boiling points. Strong attraction between positive ions and negative delocalised electrons
- Good electrical conductors. Delocalised electrons are free to move through the structure and carry charge.
- Malleable and ductile. Layers of ions can slide over each other

Alloys



Alloy = mixture of a metal with one or more other metals or non-metals

- Can be designed with specific improved properties, e.g. corrosion resistance (stainless steel) or hardness (tungsten steel)
- In an alloy, there are atoms of different sizes. The smaller or bigger atoms distort the layers of atoms.
- The layers do not slide over each other as easily so alloys are usually harder and stronger than the pure metal.

Polymers

Polymer = Large long-chain molecule made up of lots of small molecules (monomers) joined together by covalent bonds.

Thermosetting Polymers

- Easy to recycle as they soften and melt when heated – can be remoulded
- Polymer chains held together by weak intermolecular forces of attraction – require little energy to overcome

Thermosetting Polymers

- Suitable for saucepan handles as they do not soften and melt when heated
- Polymer chains held together by strong covalent bonds (crosslinks) so require lots of energy to break

Nanoparticles

Nanoparticle = Particle between 1 and 100 nanometres in size

- Usually contain only a **few hundred atoms**
- High **surface area to volume** ratio gives properties different from those for the same materials in bulk so smaller quantities are needed

| Name of Particle | Diameter |
|---------------------------------------|--------------|
| nanoparticle | 1–100nm |
| fine particles ($\text{PM}_{2.5}$) | 100–2500nm |
| coarse particles (PM_{10}) | 2500–10000nm |

- As particle size decreases, surface area **increases** in relation to volume
- e.g. As the side of a cube decreases by a factor of 10, the surface area to volume ratio increases by a factor of 10



Chapter 4a – Chemical Changes

| Keyword | Learn | ✓ |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Acid | Substance producing H ⁺ ions in water. Acids react with a base to form a salt | |
| Alkali | Soluble base (e.g. metal hydroxides) that produces OH ⁻ ions in water. Bases react with an acid to form a salt | |
| Base | Substance that reacts with an acid to form a salt e.g. metal oxides | |
| Burette | Laboratory apparatus used to accurately measure a variable volume of solution | |
| Concentrated | A large number of solute particles per unit volume | |
| Concentration | Mass or number of particles of solute per unit volume (dm ³) | |
| Dilute | A small number of solute particles per unit volume | |
| Indicator | Substance that changes colour depending on the pH of a solution e.g. phenolphthalein, methyl orange, litmus | |
| Neutralisation reaction | Reaction in which an acid reacts with a base to form a neutral solution. Overall equation $H^+ + OH^- \rightarrow H_2O$ | |
| pH | Measure of concentration of H ⁺ ions relative to pure water. As pH decreases by 1, H ⁺ ion concentration increases by a factor of 10 | |
| Pipette | Laboratory apparatus that is used to accurately measure a fixed volume of solution | |
| Salt | Ionic compound formed by reaction of an acid with a base. Consists of a positive ion from the base and a negative ion from the acid | |
| Strong acid | One that is fully ionised in aqueous solution to release H ⁺ ions e.g. $HCl(aq) \rightarrow H^+(aq) + Cl^-(aq)$ | |
| Weak acid | One that is only partially ionised in aqueous solution to release H ⁺ ions e.g. $CH_3COOH(aq) \rightleftharpoons H^+(aq) + CH_3COO^-(aq)$ | |

pH Scale



Indicators for titration

| | Colour in acid | Colour in alkali |
|-----------------|----------------|------------------|
| Phenolphthalein | Colourless | Pink |
| Methyl orange | Red | Yellow |
| Litmus | Red | Blue |

Neutralisation Reactions – general equations

Acid + base \rightarrow salt + water

Acid + alkali \rightarrow salt + water

Acid + metal carbonate \rightarrow salt + water + carbon dioxide

Preparation of a Soluble Salt

- Add excess base to warm acid. Stir
- Filter solution to remove unreacted base.
- Transfer filtrate (solution of soluble salt) to an evaporating basin.
- Heat until crystals begin to form.
- Leave to cool and completely crystallise at room temperature.
- Pat crystals dry using paper towel.

Example

copper + sulfuric \rightarrow copper + water
oxide acid sulfate



Titration

- Fill a burette with acid. Note initial volume
- Transfer 25cm³ of alkali to a conical flask using a pipette.
- Add a few drops of indicator and place flask on a white tile
- Slowly add acid from the burette, swirling to mix, adding dropwise near the end point
- Stop as soon as indicator changes colour and note volume of acid added
- Repeat until concordant results are obtained (+/- 0.1 cm³), then calculate mean volume of acid used

Example





2.2 Programming Fundamentals

| File Handling | | | ✓ |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---|
| Python | OCR | Definition | |
| <code>myFile = open("sample.txt", "r")</code> | <code>myFile = open("sample.txt")</code> | Opens a file ready for processing. | |
| <code>myFile.close()</code> | <code>myFile.close()</code> | Closes a file. | |
| <code>myFile.readline()</code> | <code>myFile.readline()</code> | Reads one line of text at a time from an open file. | |
| <code>myFile.write("Add new line")</code> | <code>myFile.writeline("Add new line")</code> | Writes one line of text at a time to an open file. | |
| <code>line = MyFile.readline()</code> <code>while line != "":</code> <code>print(line)</code> <code>line = MyFile.readline()</code> | <code>while NOT myFile.eofFile()</code> <code>print(myFile.readLine())</code> <code>endwhile</code> | Loops through a text file line-by-line and prints out each line. | |

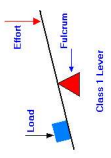
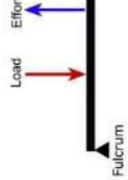
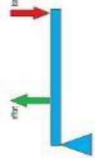
| Data Types | | ✓ |
|-------------------------------------------------------|-----------------------|---|
| Determines what type of value the variable will hold. | | |
| Integer – Whole number | age = 12 | |
| Real / float – Number that can have a fractional part | height = 1.52 | |
| Character – A single letter, symbol or number | letter = 'a' | |
| String – Multiple characters | name = "Bart" | |
| Boolean – Has two values: true or false. | a = True b = False | |

| Data Types | ✓ | | | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|-------------------------------------------------------|---------------|-----------------------------------------------|--------------|------------------------------|---------------|------------------------------------------|----------|--|-----------|--|
| Determines what type of value the variable will hold. | | | | | | | | | | | | | |
| <table><tr><td>Integer – Whole number</td><td>age = 12</td></tr><tr><td>Real / float – Number that can have a fractional part</td><td>height = 1.52</td></tr><tr><td>Character – A single letter, symbol or number</td><td>letter = 'a'</td></tr><tr><td>String – Multiple characters</td><td>name = "Bart"</td></tr><tr><td>Boolean – Has two values: true or false.</td><td>a = True</td></tr><tr><td></td><td>b = False</td></tr></table> | Integer – Whole number | age = 12 | Real / float – Number that can have a fractional part | height = 1.52 | Character – A single letter, symbol or number | letter = 'a' | String – Multiple characters | name = "Bart" | Boolean – Has two values: true or false. | a = True | | b = False | |
| Integer – Whole number | age = 12 | | | | | | | | | | | | |
| Real / float – Number that can have a fractional part | height = 1.52 | | | | | | | | | | | | |
| Character – A single letter, symbol or number | letter = 'a' | | | | | | | | | | | | |
| String – Multiple characters | name = "Bart" | | | | | | | | | | | | |
| Boolean – Has two values: true or false. | a = True | | | | | | | | | | | | |
| | b = False | | | | | | | | | | | | |

GCSE Design Technology CORE 1.05 part 2 Mechanical devices

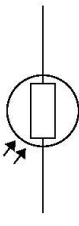
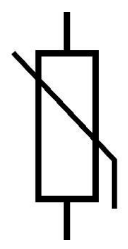
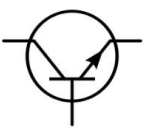




GCSE Design Technology: CORE 1.06 Electronic components

Levers

| Tick | Lever | Movement | Uses |
|------|---------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Class 1 | A large input movement can produce a small output but with greater force. | <ul style="list-style-type: none"> Pliers Crowbars See-saws  <p>Class 1 Lever</p> |
| | Class 2 | A large input movement can produce a smaller output movement with greater force but the fulcrum is at 1 end. | <ul style="list-style-type: none"> Wheelbarrow Nut cracker  <p>Fulcrum</p> |
| | Class 3 | The force applied by the user is greater than the output force. | <ul style="list-style-type: none"> Tweezers Spade  <p>Effort</p> |



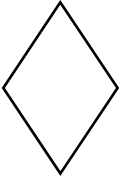
Cams

| Tick | Cam type | Motion type | Uses |
|------|----------|------------------------------------------------------------------------------------|--------------------------------|
| | Pear | Motionless for half of the cycle then rises and falls in the 2 nd half. | Valves in a car engine |
| | Circular | A continuous, smooth rise and fall. | Steam engines |
| | Snail | A slow rise/stationary with a sudden drop. | Machines needing a sudden drop |

| Tick | Component | Symbol | Function |
|------|--------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| | LDR (Light Dependent Resistor) |  | Light on LDR, the resistance changes. More light = less resistance; electricity flows. |
| | Thermistor |  | Resistance changes with temperature. Hot = low resistance cold = higher resistance. |
| | Transistor |  | Acts as a tiny electronic switch. It is known as a semi conductor. It can amplify small currents. |
| | Resistor |  | Changes the resistance to limit the flow of electricity through part of a circuit. |
| | LED (Light Emitting Diode) |  | Gives out light when electricity passes through. |
| | Buzzer |  | Makes a sound when electricity flows through. |
| | Switches |  | Turns the flow of electricity on in a circuit on or off. |



GCSE Design Technology:
CORE 1.07 Programmable components

| Flowchart element | Definition/explanation | Tick |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Programme | A set of instructions the system has been given to make the electronic system do what it is supposed to do. | |
| Flowcharts | Diagrams that are used to set up a programme. They take information from input devices and act in particular ways to control output devices. | |
|  | These are the boxes used in flowcharts for the 'start' and 'end' sections only. | |
|  | These are the shapes used for instructing on a flowchart. | |
|  | These are the shapes used on a flowchart when a decision needs to be made. These are followed by yes and no answers. | |
| Time delay | These are sections of a programme which ask it to wait for 'x' amount of time before moving onto the next instruction. | |
| Count | When a programme is either told to count how many times it gets an input before moving onto the next instruction or it is told to loop an action 'x' amount of times before moving on. | |
| Feedback loop | When a programme is sent back to an earlier stage in the flowchart, this is usually set by a sensor and will follow from a decision box. | |

GCSE Design Technology:
CORE 1.08 Metals

| Tick | Non-ferrous metal | Properties | Uses |
|------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| | Aluminium | <ul style="list-style-type: none">Corrosion resistantEasily machinedGood heat/electrical conductorMalleable | <ul style="list-style-type: none">Aircraft partsWindow framesEngine partsDrinks cans |
| | Copper | <ul style="list-style-type: none">Corrosion resistantDuctileEasily machinedExcellent heat/electrical conductor | <ul style="list-style-type: none">Electrical wire/componentsGas and water pipesPrinted circuits |
| | Brass | <ul style="list-style-type: none">Corrosion resistantEasily machinedGood heat/electrical conductivityCast well | <ul style="list-style-type: none">Plumbing fittingsDoor fittingsLocksMusical instruments |

| Tick | Ferrous metal | Properties | Uses |
|------|-----------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| | Mild steel | <ul style="list-style-type: none">DuctileMalleableMagneticHigh tensile strength | <ul style="list-style-type: none">Screws, nails, boltsCar body panels,General engineering purposes |
| | Stainless steel | <ul style="list-style-type: none">Corrosion resistantHardResists wearDifficult to cut | <ul style="list-style-type: none">KitchenwareSinksCutleryMedical equipment |
| | Cast iron | <ul style="list-style-type: none">Hard 'skin'Soft coreMagneticGood compression strength | <ul style="list-style-type: none">Machine PartsVicesBreak discsManhole covers |



| Techniques used to present viewpoints | | ✓ |
|--------------------------------------------------------|--|---|
| Specific words (noun/Verb/adverb/adjective) | | |
| Language devices (Simile/metaphor/etc) | | |
| Persuasion - Aristotelian Triad (Logos, Pathos, Ethos) | | |
| Lists | | |
| Sentence types/Structure | | |

| Language devices | | ✓ |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------|---|
| Technique | Definition | |
| Adverbial of time | Modify verbs to tell when something happens. | |
| Factual Content | Something that is known to have happened or to exist. | |
| Pattern of Three/Triple | A collection of three words, phrases, or sentences, e.g. Sleep is good for your health, intelligence and all-round well-being. | |
| Direct speech | Exact words spoken/written by speaker/writer. | |
| Opinion | View or judgement formed about something, not always based on fact or knowledge | |
| Exclamation | Indicate strong feelings and convey emotion, as well as to indicate shouting or high volume. | |

| Terminology #1 | | ✓ |
|-----------------|------------------------------------------------------|---|
| Technique | Definition | |
| Anecdote | A short illustrating story based on real events. | |
| Hypophora | A rhetorical question which the author then answers. | |
| Hyperbole | Exaggeration for dramatic effect. | |
| Formal register | Formal language. | |
| Colloquialism | Slang or informal language. | |

| Aristotelian Triad | | ✓ |
|--------------------|--------------------------------------------------------------------------------|---|
| Logos | Logic/Reason/Truth (Your argument) | |
| | Enhances Ethos; makes you look knowledgeable. | |
| Pathos | Emotions/Values (the hearer) | |
| | Humans are emotional creatures – this is a perfect way to sway somebody. | |
| Ethos | Credibility/Trust (Public persona) | |
| | Persuade your audience that you are one of them. You share the same interests. | |

| Terminology #2 | | ✓ |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------|---|
| Technique | Definition | |
| Semantic field | A series of words that all relate to the same topic or theme i.e. branch, root, stem etc. | |
| Euphemism | Mild or indirect language used in place of terms considered too harsh or blunt i.e. passed-away rather than dead. | |
| Modal verb | Verbs used to express possibility or necessity i.e. will, should, might, must. | |
| Personal pronouns | Words used as substitute for the name of a person/people i.e. he, they. These can also be plural: they, us and possessive: my, our. | |

| Analyse Effects of writer's choices | | ✓ |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---|
| Step 1 WHAT | Identify the feature of language or the choice the writer has made. Make sure you include your quote. | |
| Step 2 HOW | How does that technique create an effect e.g. how does a metaphor create an effect and how does this specific metaphor create an effect? | |
| Step 3 WHY | Why does the author want this effect? Relate it to the question | |

| Question 5 Exam Structure | | | ✓ |
|---------------------------|-------------------|--------|--------------------------------------------------------------------|
| Q5 | 40 (24 + 16 SPAG) | 45 min | Write a non-fiction persuasive text: an article, letter or speech. |

- A broad range of ingredients, equipment, food skills and techniques, and cooking methods are used to achieve successful results.
- Recipes and cooking methods can be modified to help meet current healthy eating messages.

Food skills

There are a number of food skills which enable a variety of increasingly complex dishes to be prepared and made.

- These can include:
- beating, combining, creaming, mixing, stirring and whisking; ☐
 - blitzing, pureeing and blending;
 - kneading, folding, forming and shaping;
 - knife skills;
 - rubbing-in and rolling-out;
 - use of the cooker: boiling/simmering/poaching, frying, grilling, roasting and baking.

Food skills are acquired, developed and secured over time.

Bridge hold



Claw grip



Safety

- Sharp knives: never walk around with a knife. Use the *bridge hold* and *claw grip* to cut safely.
- Grater: hold grater firmly on a chopping board. Grate food in one direction and leave a small amount at the end to prevent injury to knuckles.
- Hot liquid: drain hot liquid carefully over the sink using a colander.
- Saucepans: turn panhandles in from the edge, so they are not knocked.
- Hot equipment: always use oven gloves when placing food in and out of the oven. ☐
- Spills: wipe up immediately.
- Electrical equipment: always follow instructions. Do not use close to water and ensure sharp blades are handled carefully.
- Keep work areas tidy and free from packaging, empty tins etc.
- Wash up all equipment properly and ensure hot water and washing up liquid is used.
- Keep lids on bins and ensure surfaces are wiped down and sanitised.

Cooking methods

These are based on the cooking medium used:

- **moist/water based** methods of cooking, e.g. Boiling, Steaming, Stewing, Braising, Simmering
- Boiling is the most common method of preparing food, heat is transferred through conduction and convection, used for rice, pasta, potatoes vegetables etc
- **dry methods of cooking**, e.g. grilling, baking roasting, toasting, BBQ; Used on cakes, biscuits, some vegetables- Potatoes, and pastry products.
 - **fat-based methods of cooking** – Frying, Dry Frying, Stir Fry, Shallow and Deep Fat Frying.
 - **Grilling**- A quick method of cooking to thin pieces of food, bacon, fish etc using radiation.
 - **Microwaving**- Radiation waves are passed through the foods causing molecules to vibrate and therefore heat up. There are different types of Microwave with Grills and a combination of the two. ☐

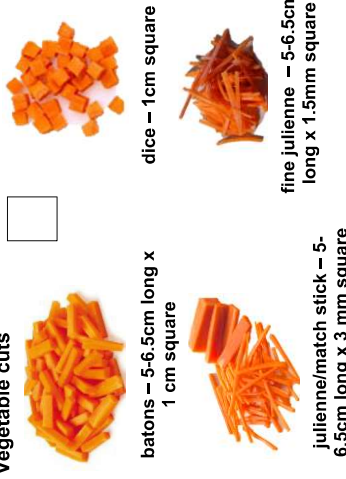
Heat exchange/transfer

Cooking requires heat energy to be transferred from the heat source, e.g. the cooker hob, to the food. This is called heat transfer or heat exchange. There are three ways that heat is transferred to the food. They are:

- **conduction** – direct contact with food on a surface, e.g. stir-frying; Boiling, Simmering, Blanching, Poaching, Baking Frying, Roasting.
- **convection** - currents of hot air or hot liquid transfer the heat energy to the food, e.g. baking; Casserolling, Braising, Blanching, Simmering, Boiling.
- **radiation** - energy in the form of rays, e.g. grilling, Barbecuing, Microwaving ☐

Many methods of cooking use a combination of these. The amount of heat and cooking time will vary according to the type of food being cooked and the method being used.

Vegetable cuts



Factors that influence cooking methods-

Type of food being prepared
Facilities available- Specialist equipment i.e. a wok, steamer? ☐

How much time we have

Needs of the individual

The skill of the cook, can they bake? Roast? Fry? prepare meals from scratch or just use ready meals.

Consumer choice, diets? Religion? Costs? etc

Advantages / Disadvantages of using a microwave? ☐

Key terms

Conduction: The exchange of heat by direct contact with foods on a surface e.g. stir-frying or plate freezing.

Convection: The exchange of heat by the application of a gas or liquid current e.g. boiling potatoes or blast chilling.

Heat transfer: Transference of heat energy between objects.

Radiation: Radiation is energy in the form of rays, e.g. grilling. ☐

Boiling

Poaching

Simmering

Blanching

Steaming

Cooking for health

Take into account healthy eating recommendations to ensure that dishes/meals are part of a varied, balanced diet.

- Planning - does the meal meet the nutritional needs and preferences of those it is being cooked for? Base your meals on starchy food.
- Choosing - choose low fat/sugar/salt versions, where possible.
- Preparing - limit the amount of fat added (try a spray oil) and replace salt with other flavourings, such as herbs and spices.
- Cooking - use cooking practices which reduce the amount of fat needed and minimise vitamin losses from fruit and vegetables.
- Serving - serve the meal in proportions which reflect current healthy eating advice.
- Do not forget to include a drink.

Healthier cooking methods

- Grill or BBQ foods rather than fry to allow fat to drain away.
 - Drain or skim fat from liquids, e.g. sauces, stews and casseroles.
 - Dry fry using non-stick pans, so no need for oil. ☐
 - Oven bake rather than fry.
 - Steam or microwave vegetables.
- By not adding fats we reduce the calorific content of food, 1g of fat = 10 Kiloocal

French Foods- Chicken Cordon Bleu,
Tarte Tatin, Onion Soup, Clafoutis,
Croque Monsieur, Bouillabaisse, Coq-
Au-Vin. Profiteroles, Choux Buns,
Eclairs. ☐

Why is food cooked?

Some foods can be eaten raw and form an important part of the diet. However, many foods need to be prepared and cooked before they are eaten to:

- make the food safe to eat by destroying pathogenic microorganisms and toxins;
- destroy microorganisms and enzymes that cause food to deteriorate and therefore increase the keeping quality of the food;
- make the food more digestible and easier to absorb.
- To have hot food on cold days.
- Make it more attractive and colourful
- Make it easier to digest
- Add variety to the diet
- Improve flavour
- Release nice aromas
- Makes food less bulky
- Change Textures ☐
- Improve the keeping quality



| | |
|------------------|------------------|
| La musique | music |
| Célèbre | famous |
| Un genre | genre/type/sort |
| Un groupe | a group |
| Le bruit | noise |
| Un chanteur/euse | a singer |
| Un concours | a competition |
| Un don | a gift/talent |
| Les paroles | the words/lyrics |
| Le public | the audience |
| Le son | the sound |
| Une critique | a review |

| Activities on line | |
|--------------------------|------------------------|
| télécharger des chansons | to download songs |
| parler avec un ami | to speak with a friend |
| partager des photos | to share photos |
| chercher | to look for |
| acheter/faire des achats | to buy things |
| jouer aux jeux vidéo | to play video games |
| regarder des clips | to watch clips |
| envoyer des messages | to send messages |
| passer du temps | to spend time |
| chanter/danser | To sing/danse |
| écouter de la musique | to listen to music |

| Envoyer - to send | |
|-------------------------------------------------------|----------------|
| There is a small change from 'y' to 'i' in some forms | |
| j'envoie | I send |
| tu envoies | you send |
| il/elle/on envoie | he/she/we send |
| nous envoyons | we send |
| vous envoyez | you send |
| ils/elles envoient | they send |

| | |
|---------------------|--------------|
| un ordinateur | a computer |
| des écouteurs | headphones |
| les réseaux sociaux | social media |
| un réseau | a network |
| une appli | an app |
| un écran | a screen |
| un site-web | a web-site |
| un portable | a phone |
| une tablette | tablet |
| un SMS/un texto | a text |

| | |
|--------------------|----------------|
| Un lien | A link |
| Les médias | Media |
| Un mot de passe | Password |
| La technologie | Technology |
| Les données | Data |
| Une console de jeu | Games console |
| Un influenceur | An influencer |
| Un abonnement | A subscription |

| Frequency phrases | |
|---------------------------|----------------------------|
| avant le collège | before school |
| le matin | in the morning |
| le soir | in the evening |
| après les cours | after lessons |
| quand j'ai du temps libre | when I have some free time |
| d'habitude | usually |
| souvent | often |
| toujours | always |
| le week-end | at the weekend |

| | |
|----------------------------|---------------------|
| à la télé/télévision | on tv |
| des séries | series |
| une comédie | a comedy |
| une émission | a programme |
| un peu de tout | a bit of everything |
| des clips de musique | music clips |
| La télé-réalité | reality tv |
| des vidéos amusantes | funny videos |
| sur YouTube | On YouTube |
| une chaine | a channel |
| une célébrité | a celebrity |
| les informations/les infos | the news |
| un personnage | a character |
| un documentaire | a documentary |
| une scéance | a screening |

| | |
|-----------------------------|--------------------------|
| Des dangers en-ligne | Dangers on-line |
| les vols d'identité | identity theft |
| des risques de sécurité | security risks |
| le harcèlement en ligne | cyber-bullying |
| les fausses nouvelles | fake news |
| la cyber-criminalité | cyber-crime |
| Des mauvaises images | bad images |
| à mon avis | in my opinion |
| c'est affreux | it's awful |
| c'est dangereux | it's dangerous |
| c'est inquiétant | it's worrying |
| Un commentaire | Comment/remark |
| c'est mauvais pour la santé | it's bad for your health |
| c'est indispensable | It's essential |
| Malgré cela | Despite that |



| Tu as une vie active? – Do you have an active life? | |
|--------------------------------------------------------|------------------------------------|
| Je joue au basket/au foot/au rugby | I play basketball, football, rugby |
| dans l'équipe du collège | in the school team |
| dans un groupe de musique | in a music band |
| Je joue du piano/du violon/ de la guitare/ de la flûte | piano/violin/guitar/flute |
| Je ne pratique pas de sport | I don't practise sport |
| J'ai un cours de musique | I have a music lesson |
| J'écoute toutes sortes de musique | I listen to all sorts of music |
| Je mange quelque chose | I eat something |
| Je participe au club de lecture | I take part in the book club |
| je préfère lire/la lecture | I prefer reading |
| une comédie musicale | A musical comedy |
| les jeux vidéo/de guerre, | Video/war games |
| une pièce de théâtre | a play |

| Aller – to go | |
|----------------|--------------|
| Je vais | I go |
| Tu vas | You go |
| Il/elle/on va | He/she/We go |
| Nous allons | We go |
| Vous allez | You go |
| Ils/elles vont | They go |

| Past participles | |
|------------------|-----------|
| fait | did |
| joué | played |
| pris | took |
| acheté | bought |
| passé | spent |
| vu | saw |
| lu | read |
| bu | drank |
| mangé | ate |
| regardé | watched |
| c'était | it was |
| il y avait | there was |

| Les activités avec faire | |
|------------------------------------|--------------------|
| Je fais du vélo | I go cycling |
| Je fais de la lecture | I read/do reading |
| Je fais de la cuisine | I do cooking |
| Je ne fais rien | I do nothing.... |
| Je ne fais pas de.... | I don't do... |
| Je fais une promenade | I go for a walk |
| Je fais de la natation | I go swimming/swim |
| Je fais du sport | I do sport |
| Je fais de la cuisine/ de la danse | I cook/dance |
| ça fait du bien! | It does me good! |

| Frequency phrases | | |
|--------------------|-------------------|--|
| souvent | often | |
| parfois | sometimes | |
| quelquefois | sometimes | |
| tout le temps | all the time | |
| tous les jours | every day | |
| tous les soirs | every night | |
| tous les week-ends | every weekend | |
| de temps en temps | from time to time | |

| General free time phrases | | |
|------------------------------------------|--|--------------------------------|
| Je vais... | | I go... |
| au centre sportif/ au théâtre | | To the sports centre/theatre |
| à la piscine/ à la plage | | To the pool/beach |
| avec mon meilleur ami/ ma meilleure amie | | With my best friend (m/f) |
| Avec mes copains/mes copines | | With my friends |
| Je bois/je lis | | I drink/I read |
| Je suis actif/active | | I am active |
| Je suis sportif/sportive | | I am sporty |
| Je suis membre de l'équipe de rugby | | I'm a member of the rugby team |

| Common essentials | |
|-------------------|------------|
| ensemble | together |
| aussi | as well |
| puisque | as/since |
| fort(e) | strong |
| pendant | during |
| quand | when |
| plusieurs | several |
| beaucoup de | a lot of.. |

| Faire - to do/make | |
|--------------------|-------------------------|
| je fais | I do/I make |
| tu fais | You do/make |
| il/elle/on fait | He/she does we do/ make |
| nous faisons | We (pl) do/make |
| vous faites | You (pl) do/ make |
| ils/elles font | They do/make |

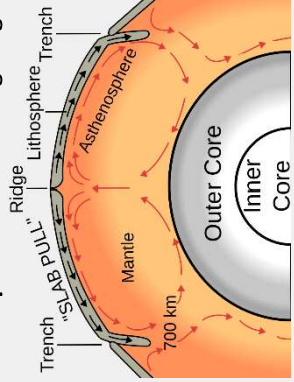


1. The Earth's layered structure

- The Earth is divided into layers.
- The **lithosphere** is the uppermost layer and is split into **continental crust** (granite) and **oceanic crust** (basalt).
- Continental Crust:
 - Thicker (30-70 km)
 - Less dense, made mostly of granite
 - Older (up to 3.8 billion years old)
 - Forms landmasses, less prone to subduction
- Oceanic Crust:
 - Thinner (5-10 km)
 - Denser, made mostly of basalt
 - Younger (up to 200 million years old)
 - Forms ocean floors and is more likely to be subducted under continental crust
- The **mantle** can be divided into two layers. The thinner **asthenosphere**, a partly molten 'lubricating' layer under the lithosphere. The lower mantle which is solid.
- The **core** is also split into two layers. The outer core is liquid, whilst the inner core is solid because the pressure is so great. The composition of both is iron and nickel.

2. The Earth's physical properties

- The Earth is heated by **radioactive decay** in the core and mantle.
- Convection currents** are caused by the **geothermal energy** and move tectonic plates.
- The rising heat creates **plumes** which bring magma to the surface.



3. Plate Boundaries

- Earthquakes and volcanoes are tectonic hazards. They occur at plate boundaries.
- Conservative** – plates slide past each other – friction between the plates causes earthquakes (e.g. San Andreas Fault in California).
- Divergent** – plates move apart, and magma rises to fill the gap – hot and runny magma made of **basalt** spreads to form **shield** volcanoes e.g. Iceland sits on the mid-Atlantic ridge. Earthquakes tend to be frequent but rarely life threatening. Smaller earthquakes tend to occur.
- Convergent** – plates push together, and the denser oceanic plate is **subducted** – partial melting of the oceanic plate creates **andesitic** magma which is cooler and less fluid, so more explosive forming **composite** volcanoes e.g. the Andes mountains in Chile and Peru. Earthquakes can be violent as pressure builds from the subducting oceanic plate.

4. Earthquakes.

- The magnitude of an earthquake is measured on the **Richter Scale**. The scale is logarithmic – a 6.0 quake is 10 times more powerful than 5.0.
- The **epicentre** is directly above the focus, on the Earth's surface.
- Shallow Earthquakes occur near the surface (0-70 km depth) and are the most damaging, causing strong shaking, building collapses, and landslides. These earthquakes often have a high magnitude (e.g. 7.0+).
- Tsunamis are usually triggered by earthquakes and, as such, are a secondary hazard. A tsunami is a series of giant ocean waves that send surges of water, sometimes over 30m onto land.

5. Japan Earthquake: Developed country

- Sendai (Japan)** was hit by a **tsunami** in 2011 following a **magnitude 9.0** earthquake 70km from the coast.
- Primary impacts: The magnitude 9.0 earthquake caused severe destruction, collapsing buildings and damaging infrastructure. 20,000 died
- Secondary impacts: A tsunami devastated coastal areas, flooding towns and damaging the Fukushima nuclear plant, which led to radiation concerns.
- Management:
 - Short-term: Rapid deployment of shelter, medical supplies, and food. Japan's well-trained emergency services and infrastructure ensured a swift response.
 - Long-term: Earthquake-resistant buildings and extensive evacuation plans contributed to rebuilding. Well-funded and trained emergency services were crucial for recovery.

6. Haiti Earthquake: Developing country

- Port-au-Prince (Haiti)** was hit by a magnitude 7.0 earthquake in 2010.
- Primary: The magnitude 7.0 earthquake caused severe destruction in the capital, Port-au-Prince, with buildings collapsing, leaving thousands trapped.
- Secondary: Limited access to medical care and supplies worsened the situation, and weak infrastructure slowed recovery.
- Management:
 - Short-term: Aid was slow to arrive, and there was a lack of adequate shelter and medical supplies.
 - Long-term: Recovery efforts faced challenges due to limited funding and poor infrastructure. Trained emergency services were lacking, which hindered relief operations.



| Sportarten - Sports | | | Was machst du gern in deiner Freizeit? What do you like to do in your free time? | | Und wie oft? And how often? | |
|-----------------------------------------------|---------------------------------|--|-------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Ich bin (sehr) sportlich | I am (very) sporty | | Was machst du gern? | What do you like doing? | häufig | frequently |
| Ich bin ziemlich/nicht sehr sportlich | I am quite/not very sporty | | Ich mache gern/lieber/am liebsten ... | I like to/prefer to/most of all I like to do ... | immer | always |
| üben | to practise | | Freizeitaktivitäten | Free time activities | jeden Abend | every evening |
| Was spielst du? | What do you play? | | Mein Lieblingshobby ist | My favourite hobby is | jeden Nachmittag | every afternoon |
| Ich spiele ... für eine Mannschaft/einen Klub | I play for a team/a club | | Meine Lieblingsfreizeitaktivität ist | My favourite freetime activity is | jede Woche/wöchentlich | every week |
| Badminton/Basketball | badminton/basketball | | Ich interessiere mich (sehr/nicht) für | I am (very/not) interested in | normalerweise | normally |
| Fußball/Handball | football/handball | | Einkaufen | Shopping | Und wie oft - Freizeit? And how often – free time? | |
| Eishockey | ice hockey | | Fernsehen/Gaming | TV/gaming | ab und zu | now and then |
| Tennis/Tischtennis | tennis/table tennis | | Lesen | Reading | jeden Tag/täglich | every day |
| das Mitglied | member | | Radfahren/Sport | Cycling/sport | manchmal | sometimes |
| an einem Wettbewerb teilnehmen | to take part in a competition | | Ich spiele am Computer | I play on the computer | (fast) nie | almost never |
| der Trainer | coach | | Ich gehe einkaufen/schwimmen/wandern | I go shopping/swimming/hiking | oft | often |
| Ich liebe Sport | | | ins Kino | to the cinema | selten | seldom |
| Ich treibe Sport | I do sport | | in die Stadt | to the town | am Wochenende | at the weekend |
| Ich mache Judo/Karate/Leichtathletik | I do judo/karate/athletics. | | Ich besuche (Ausstellungen/Freunde) | I visit (exhibitions/friends) | fahren – to travel/go | |
| Ich fahre Rad/Ski/Snowboard | I ride a bike/I ski/I snowboard | | Ich tanze/koche/singe | I dance/cook/sing | ich fahre | I travel/go |
| Ich gehe laufen/schwimmen/wandern | I go running/swimming/hiking | | Ich mache Fotos | I take photos | du fährst | you travel/go |
| Ich reite/schwimme | I go horseriding/I swim | | Ich lese Bücher/ Romane | I read books/novels | er/sie/es fährt | he/she/it travels/go |
| Ich gehe ins Fitnesszentrum | I go to the gym | | Ich male/zeichne Bilder | I paint/draw pictures | wir fahren | we travel/go |
| Mein Lieblingssport ist | My favourite sport is | | Ich höre Musik | I listen to music | ihr fahrt | you all travel/go |
| im Sommer/im Winter | in summer/in winter | | Ich sehe fern/Filme | I watch TV/films | Sie/sie fahren | you (formal) /they travel/go |
| das Schwimmbad | swimming pool | | | | This is a strong verb – note the vowel change in the du and er/sie/es forms This change also applies to tragen – to wear and laufen to run | |
| das Freibad | outdoor pool | | | | | |
| das Hallenbad | indoor swimming pool | | | | | |



| Was machst du online? What do you do online? | | hören – to listen to | | Was hörst du gern? What do you like to listen to? | |
|---------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------|---------------------------------------|
| Welche Geräte benutzt du? | Which devices do you use? | ich höre | I listen to | Ich höre (nicht) gern | I (don't) like listening to .. |
| Ich benutze ein Tablet | I use a tablet | du hörst | you listen to | | |
| einen Computer/ Laptop | a computer/ laptop | er/sie/es hört | he/she/it listens to | Ich höre lieber/nie | I prefer/never listen to |
| eine Spielkonsole | a games console | wir hören | we listen to | | |
| ein Handy/ Smartphone | a mobile/ smart phone | ihr hört | you all listen to | Ich höre am liebsten | Most of all I like listening to |
| Was machst du online? | What do you do online? | Sie/sie hören | you (formal)/ they listen to | Tanzmusik | dance music |
| Ich sehe mir Filme/Videos an | I watch films/videos | Hören means to listen to – Ich höre Rap. These are the regular present tense verb endings and apply also to spielen to play | | Popmusik | pop music |
| Ich lade (Apps) herunter | I download Apps | Role Play Questions | | Rock(musik) | rock music |
| Ich lade (Fotos) hoch | I upload photos | Was kostet | How much is? | klassische Musik | classical music |
| Ich nehme Musik auf | I record music | Wo ist | Where is ? | elektronische Musik | electronic music |
| Ich rufe (Freunde) an | I call friends | Wann beginnt ... bitte? | When does ... begin, please? | die Musik von | the music of |
| Ich benutze soziale Medien | I use social media | Um wie viel Uhr | At what time? | Warum? Why? | |
| Ich chatte/plaudere | I chat | Gibt es | Is/Are there? | Er/sie/es ist/war | It is/was |
| Ich schreibe/lese/schicke Nachrichten | I write/read/send messages | Können Sie bitte ... empfehlen? | Can you recommend? | besonders/extrem | particularly/extremely |
| Ich folge berühmten Persönlichkeiten | I follow famous people | Picture description | | ganz/ziemlich | quite/rather |
| Ich streame (gern) (Musik/Serien) | I (like to) stream music/series | Im Bild/Im Foto | On the photo | wirklich/sehr | really/very |
| Was sind die Vorteile/ Nachteile von Technologie? | What are the advantages / disadvantages of technology? | Ich/Man kann ... sehen | I can see/You can see | nicht/zu | not/too |
| Man kann Computer-Viren bekommen | You can get computer viruses | Im Bild gibt es | In the picture there is/are | melodisch | tuneful |
| falsche Informationen oder Nachrichten lesen | read false information or news | Auf der linken/ rechten Seite | On the left/on the right side | beliebt | popular |
| Filme und Musik herunterladen | download films and music | Im Hintergrund | In the background | laut/leise | loud/quiet |
| Informationen schnell finden | find information quickly | Im Vordergrund | In the foreground | modern/modisch | modern/fashionable |
| mit Freunden in Kontakt bleiben | keep in touch with friends | Sie spielen, essen, tragen | They are playing, eating, wearing | klassisch | classical |
| Probleme mit Mobbing/ Cyberkriminalität erleben | have problems with bullying and cybercrime | USE PRESENT TENSE TO SAY WHAT PEOPLE ARE DOING – “NO IS-ING” “AM-ING” OR “ARE-ING” | | kulturell | cultural |
| | | | | langsam/schnell | slow/fast |
| | | | | berühmt | famous |
| | | | | spannend | exciting |
| | | | | interessant/langweilig | interesting/boring |
| | | | | komisch | funny, strange |




Logo redesign project

Graphic design isn't solely about making things look good (although of course this is integral), it's about effective communication, conveying information, creating a visual identity, appealing to a target market, and much more. It has an essential role to play in every aspect of a business.


The ability of good graphic design to effectively communicate information and to persuade people to take action is one of its best traits. With a well designed flyer, advert or web landing page, you can turn prospective clients into paying clients. A skilled designer will know exactly how to create a call-to-action type design, and this will automatically lead to a bigger client base and a healthier bottom line.

| Types of Brand logos - RCWC | | Tick |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|
| <p>A logomark, also known as a logo symbol or brandmark, consists of a graphic element or symbol representing a brand or company. A logomark focuses solely on the visual representation without incorporating any accompanying typography.</p> | | |
| <p>Lettermark logos, also known as monogram logos or letter logos, consist of initials, abbreviations, or acronyms of a brand or company name. Instead of using the full name of the organisation, these logos focus on creating a visual representation using one or more letters.</p> | | |
| <p>A wordmark logo consists of a stylised or custom-designed typography-based representation of a brand or company name. It focuses on the visual arrangement and design of the text itself, rather than incorporating additional graphic elements or symbols.</p> | | |
| <p>A wordmark or script logo consists of the company or brand name represented in a unique, stylised, and often artistic manner. Instead of relying on symbols, icons, or graphic elements, it focuses solely on typography and the visual presentation of the text.</p> | | |
| <p>A combination mark logo combines both text and a visual symbol or icon. It typically incorporates a unique visual element alongside the brand name or company name.</p> | | |
| <p>Emblem logos combine text and imagery into a single integrated unit. They are characterised by their compact, symmetrical shapes and often have a traditional or vintage aesthetic. They typically feature a detailed, illustrated graphic or symbol enclosed within a border or frame, with the company or brand name placed below or around the graphic.</p> | | |


LOGOMARK




LOGOTYPE: LETTERMARK




LOGOTYPE: WORDMARK




LOGOTYPE: WORDMARK / SCRIPT



COMBINATION MARK



EMBLEM



Remember:

- A well-designed logo is timeless, memorable, and represents the essence of the brand.
- Using a limited palette means that you're only using a few select colours in your piece. It's not an entire gamut of the rainbow, but just two or three colours that you stick to for the entire illustration



History Department: Knowledge Organiser: Year 9 Spring Term 2: Life in Nazi Germany 1933-9

| 1. Attitude & Policies Towards Women | | | 2. Policies towards the Youth of Germany | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Method | Description | ✓ | Method | Description | ✓ |
| Social Pressure | Women encouraged to dress plainly, avoid make up, not work, to remain at home | | School changes | Napola schools set up ages 10-18, Adolf Hitler Schools 12-18, Ordensburg from age 20 | |
| Attempts to raise birth rate | Propaganda, marriage loans, medals for mothers of large families, Lebensborn programme, divorce made easier, family allowances increased | | Curriculum Changes | Textbooks rewritten, Mein Kampf used as a school text, teachers joined Nazi Teachers League and NSDAP, Racial Studies, 15% of curriculum for PE, girls taught domestic skills | |
| Work | 3 Ks, women removed from professional jobs from 1936, but this policy failed due to economy needing more workers pre-VWW2 | | Youth Groups | Hitler Youth (boys) and League of German Maidens (girls) for ages 14-18. Military drill, camping, singing, marching for boys. Domestic skills for girls. Other groups for younger and older boys and girls. | |
| Repression | Concentration Camps: Moringen opened in 1933 and Ravensbruck opened in 1939 | | | | |
| 3. Economic Policies – Reducing unemployment | | | 4. Improvements to the lives of workers | | |
| Method | Description | ✓ | Method | Description | ✓ |
| Reich Labour Service | From 1935, compulsory labour for all men 18-25, low pay | | KdF (set up by the DAF) | Subsidised leisure and cultural activities for workers: holidays, museums, cinema trips | |
| Job Creation | By 1938 37.1bn Marks spent on public works – Autobahns, engineering projects, public buildings. 7,000kms of autobahns built | | Beauty of Labour (Dept of the KdF) | Improvements made to working conditions: ventilation, canteens, improved sports facilities. | |
| Rearmament | Conscription introduced 1935 – 1.4m in the army by 1939. Government contracts given to iron, coal, steel companies. | | Wages | Average weekly wage rose from 86 Marks p/w in 1932 to 109 Marks p/w by 1938 | |
| Invisible unemployment | Jews dismissed, under 25s pushed into labour schemes, women dismissed, opponents were in camps so their numbers didn't count. | | Unemployment Reduced | Conscription and Public Works schemes provided thousands of new jobs from 1933. | |
| 5. Workers lives get worse | | ✓ | 6. Persecution of minorities | | ✓ |
| * Trade Unions closed in 1933 – no one to represent the workers. | | | Nazis believed Aryans would be a Volksgemeinschaft (peoples community) and a pure race: a 'Herrenvolk' achieved by elimination: 1933 – Sterilisation Law – 350,000 compulsorily sterilised 1935 – Marriage between gypsies and Germans forbidden 1938 – Gypsies, Vagrants, Homosexuals taken to concentration camps 1939 – Euthanasia Campaign – 6000 babies murdered for having disabilities | ✓ | 7. Persecution of the Jews 1933 – Boycott of Jewish Shops 1935 – Nuremberg Laws – Citizenship removed for Jews, marriage between Jews and non-Jews made illegal 1936 – Jews forbidden from professional jobs 1938 – Jewish children expelled from schools 1938 – Kristallnacht – Pogrom against the Jews – 100 killed, 20,000 temporarily sent to camps, 20,000 businesses destroyed. Jews fined for the damage, 250,000 Jews left Germany. |
| * Volkswagen Swindle 1938 – Workers encouraged to save for a VW car from the government but none were delivered | | | | | |
| * Cost of living increased – Inflation reduced real wages. All basic groceries cost more in 1939 than in 1933. Food items in short supply to keep prices high for farmers | | | | | |
| * Working Hours increased: 42.9 hours p/w by 1933 to 47 hours p/w by 1939 | | | | | |
| | | | | | |




| The Weimar Republic, 1918-1929 | Hitler's rise to power 1919-1933 | Nazi Control and Dictatorship 1933-1939 | Life in Nazi Germany 1933-1939 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 th November 1918: Kaiser Wilhelm abdicates January 1919: Spartacist uprising 28 th June 1919: Treaty of Versailles is signed August 1919: Weimar Constitution set up 1920: March: Kapp Putsch 1923: Jan: French occupation of the Ruhr 1923: January – November: Hyperinflation introduced 1924: Dawes Plan 1925: Locarno Pact 1926: Germany becomes a member of the League of Nations 1929: Young Plan | 1919: Hitler joins the German Workers' Party 1920: NSDAP set up 1921: The SA is formed 1923: 8 th November: Munich Putsch 1925: Mein Kampf is published 1926: Bamberg Conference 1928: Nazis win 12 seats in the Reichstag 1929: Stresemann dies 1929: 29 th October: Wall Street Crash 1932: Nazis win 107 seats in the Reichstag 1932: July: the Nazis win 230 seats in the Reichstag and von Papen becomes Chancellor 1932: November: the Nazis win 196 seats in the Reichstag and von Schleicher becomes Chancellor 1933: Hitler becomes Chancellor | 1933: 30 th January, Hitler becomes Chancellor, invited by Hindenburg 1933: 27 th February, the Reichstag building was set on fire 1933: 24 th March: Enabling Act 1933: Dachau set up (first concentration camp) 1933: 2 nd May, trade unions were banned 1933: 14 th July: Law Against the Formation of Parties was passed 1934: 30 th June: Night of the Long Knives 1934: August, President Hindenburg died 1934: August, Hitler combined both the posts of Chancellor and President and took the title of Fuhrer 1934: August: the German army swore allegiance to Hitler 1938: 16 army generals were removed from their positions | 1933: Boycott of Jewish shops and businesses 1933: Law for the Encouragement of Marriage 1933: July: Sterilisation Law 1933: October: opening of Moringen (first concentration camp for women) 1933: Napola schools set up 1935: 15 th Sept: Nuremberg Laws passed (the Reich Citizenship Law and the Law for the Protection of German Blood and Honour) 1935: Conscription introduced 1936: Membership of the Hitler Youth made compulsory 1938: Jewish children were not allowed to attend German schools 1938: 'Lebensborn' programme 1938: 9 th November: Kristallnacht 1939: Euthanasia campaign began 1939 Designated Jewish ghettos established |

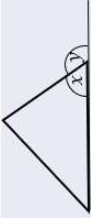



Paper 3 Exam Question Technique: (52 marks; 1 hour 30 mins)

Question 1: 'Give two things you can infer from source A about...' (4 marks) (infer, support from source: repeat)
Question 2: 'Explain why...' (12 marks) 3 x PEEL paragraphs. You will have a choice from 2 questions
Question 3 a): 'How useful are sources B and C for an enquiry into...' (8 marks) (what sources suggest: evaluate NOP and include own knowledge
Question 3 b): 'Study interpretations 1 and 2... They give different views... What is the main difference between their views?' (4 marks)
Question 3 c): 'Suggest one reason why interpretations 1 and 2 give different views on. 'You may use sources B & C to help explain your answer.' (4 marks)
Question 3 d): 'How far do you agree with interpretation 2 about...?' (16 marks + 4 SPaG marks) (always lead out with Interpretation 2 and your own knowledge; then challenge this view by using Interpretation 1 and your own knowledge)

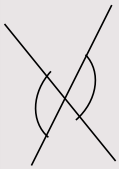


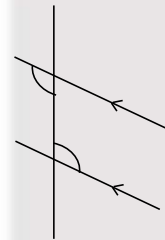
| Keyword | Definition | Extra Information |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Gradient | The steepness of a line, giving the change in y for every 1 increase in x | $m = \frac{\Delta y}{\Delta x}$ |
| y - intercept | Where a graph crosses over the y-axis | Found by making $x = 0$ |
| Root | Where a graph crosses over the x axis | Found by making $y = 0$ |
| Parallel lines | Lines with the same gradient | $m_1 = m_2$ |
| Perpendicular lines | Lines at right-angles to each other | $m_1 = -\frac{1}{m_2}$ |
| Linear Graph | A straight line graph. | Has the general form $y = mx + c$ or $ax + by = c$ |
| Distance-time graph | Shows distance from the starting point on the y-axis. The gradient at given time gives the speed | |
| Velocity-time graph | Shows velocity on the y-axis. The gradient at a given time gives the acceleration. The area under the graph gives the distance travelled | |
| Line Segment | A line with a start and end point. | Midpoint of a line segment: $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$ |
| Average speed | $Average\ Speed = \frac{Total\ Distance}{Total\ Time}$ | It may require several calculations to find the total distance. |
| Rate of change | How something changes over time. | Can be found from the gradient of a tangent to a graph |
| Axis break | Axes do not have to start at zero. A discontinuity symbol can be used. |  |
| Quadratic graph | A parabolic curve, with 1 turning point which is either a maximum or minimum. | Has the general form $y = ax^2 + bx + c$ |
| Quadratic equation | An equation with a quadratic term. Can be solved graphically by finding intersections. | Will have 0, 1 or 2 solutions |
| Cubic graph | A curve with 0 (an inflection) or 2 (a minimum and a maximum) turning points | Has the general form $y = ax^3 + bx^2 + cx + d$ |
| Cubic equation | An equation with a cubic term. Can be solved graphically by finding intersections. | Will have 1, 2 or 3 solutions |
| Reciprocal graph | A graph with horizontal and vertical asymptotes | Has the general form $y = \frac{k}{x}$ |
| Circle graph | A circle centred on the origin with a radius r | Has the general form $x^2 + y^2 = r^2$ |

Formula for finding the equation of a line that passes through $(x1,y1)$ with gradient m :
 $y-y1=m(x-x1)$

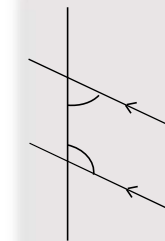
| Keyword | Definition | Example(s) |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Vertex | The point where two lines meet | |
| Interior angle | When one side of a polygon is extended at a vertex | |
| Exterior angle | <ul style="list-style-type: none">the angle inside the polygon is called the interior anglethe angle outside the polygon between the side and the extended side is called the exterior angle. |  |
| Tessellate | Shapes fit together exactly like tiles with no gaps between them. The angles where the shapes meet must sum to 180° | |
| Sum of interior angles | $S_n = (n - 2) \times 180^\circ$ | |
| Sum of exterior angles | The sum of the exterior angles of a polygon is always 360° | |
| Regular polygon | A polygon where all sides are the same length, and all interior angles are the same. | |
| Hypotenuse | In a right-angled triangle, this is the longest side and is opposite the right angle. | |
| Pythagoras' theorem | The square of the hypotenuse is equal to the sum of the squares of the other two sides |  |
| Opposite side | In a right-angled triangle, the side <u>opposite</u> the angle labelled θ is called the <u>opposite</u> |  |
| Adjacent side | In a right-angled triangle, the side <u>next</u> to the angle labelled θ is called the <u>adjacent</u> . | |
| Sine ratio | The sine of angle θ is the ratio of the opposite side to the hypotenuse | $\sin \theta = \frac{opp}{hyp}$ |
| Cosine ratio | The cosine of angle θ is the ratio of the adjacent side to the hypotenuse | $\cos \theta = \frac{adj}{hyp}$ |
| Tangent ratio | The tangent of angle θ is the ratio of the opposite side to the adjacent side | $\tan \theta = \frac{opp}{adj}$ |
| Angle of depression | The angle of depression (d) is the angle measured downwards from the horizontal |  |
| Angle of elevation | The angle of elevation (e) is the angle measured upwards from the horizontal. | |

| | 0° | 30° | 45° | 60° | 90° |
|-----|----|----------------------|----------------------|----------------------|-----|
| sin | 0 | $\frac{1}{2}$ | $\frac{\sqrt{2}}{2}$ | $\frac{\sqrt{3}}{2}$ | 1 |
| cos | 1 | $\frac{\sqrt{3}}{2}$ | $\frac{\sqrt{2}}{2}$ | $\frac{1}{2}$ | 0 |
| tan | 0 | $\frac{\sqrt{3}}{3}$ | 1 | $\sqrt{3}$ | |

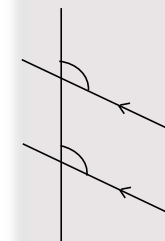

Vertically opposite angles are equal



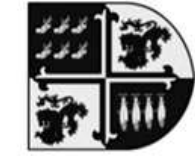
Alternate angles are equal



Co-interior angles sum to 180°



Corresponding angles are equal



Unit Instrumental Music Wider Listening

Context

Baroque the dominant style of Western classical music composed from about 1600 to 1750.

Classical era the musical period from ~1750-1820.

Concerto grosso a concerto for more than one soloist

Dance suite A Baroque collection of movements in dance rhythms.

Romantic era the period of musical history from ~1810-1900

Romanticism the artistic and intellectual movement behind the Romantic era. Romanticism is characterised by an emphasis on an individual's expression of emotion and their freedom of imagination, as well as a love of the natural world. Another common theme was individual rebellion against established social rules and conventions, which led to the rise of the virtuosic heroic soloist in Romantic concertos.

Solo concerto A concerto for a single instrument accompanied by orchestra

Trio sonata A Baroque piece for two melody instruments and continuo

Dynamics

Crescendo gradually getting louder.

Diminuendo gradually getting quieter.

Fortissimo very loud

Sforzando (*sf* or *sfz*) an accent showing that a note or chord should be played with greater force than those surrounding it.

Terraced Dynamics When the dynamics are either forte or piano, with no gradual changes. Common in Baroque music.

Rhythm

Compound time signature when the beat subdivides into 3 rather than 2

Rit./ritardando slowing down.

Tempo rubato (usually just **rubato**) Literally 'robbed time'. The tempo is sped up and slowed down for expressive effect.

Triplets Three notes in the space of two

Texture

Alberti bass a figuration common in the Classical period, using broken chords as an accompaniment.

Antiphonal Music performed alternately by two groups which are often physically separated.

Basso continuo literally continuous bass line.

Accompaniment played by a melodic bass instrument, often a cello, and a chordal instrument such as harpsichord, lute or organ.

Contrapuntal When two melodies are played at the same time and interweave—almost the same as polyphonic

Dialoguing Instruments in dialogue—playing one after the other, swapping ideas

Homophonic a texture comprising a melody with accompaniment.

Monophonic A musical texture with a single line

Passagework a constantly moving passage, often in patterns of quick notes and including sequences and scales

Polyphonic More than one melody at once, or entering at different times so that they overlap

Stretto entries of the subject closer together than before in a fugal recapitulation

Tutti All parts playing at the same time

Structure

Bridge passage another term for transition

Coda a section sometimes added at the end of a piece or movement.

Codetta a short coda at the end of a section within a piece or movement.

Development second section in sonata form in which the themes of the exposition are developed and a variety of keys are explored



This QR code will take you to a Spotify playlist with audio examples of many of the concepts covered on this sheet and in lessons. You will find it helpful to listen to these as you learn.



Year 9
Unit Instrumental Music Wider
Listening



| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Exposition first section in sonata form – contains first subject in tonic and second subject in a different but related key – dominant or relative major</p> <p>First subject the first theme or melody in Sonata form.</p> <p>Fugal exposition The initial statements of subject and answer in a fugue</p> <p>Fugue Contrapuntal piece with exposition, development and recapitulation</p> <p>Recapitulation final section of a sonata form which repeats the material of the exposition, but this time all in the tonic key.</p> <p>Second subject the second theme or melody in sonata form.</p> <p>Sonata form a large-scale form developed in the Classical era comprising exposition, development and recapitulation.</p> <p>Ternary form Simple ABA structure</p> <p>Transition a linking passage often used to modulate (change the key of the music) in preparation for the second subject in Sonata form.</p> <p>Melody</p> <p>Appoggiatura an ornament sometimes referred to as a ‘leaning in’ note. The appoggiatura leans on the main note, usually taking half its value and starting a step higher.</p> <p>Answer In a fugue, the subject repeated in response to its original appearance, usually a fourth or fifth lower or higher than the preceding subject. If it is an exact transposition of the subject it is a real answer; if not it is a tonal answer.</p> <p>Articulation the way in which a note or sequence of notes is played—for example staccato, legato, accented etc.</p> <p>Diatonic notes that belong to the key of the piece.</p> | <p>Chromatic from the Greek word for colour. In harmony, notes and chords that are not diatonic (part of the key of the music). In melody, ascending or descending in semitones.</p> <p>Conjunct Movement by step</p> <p>Countersubject the melody played after the subject or answer</p> <p>Diatonic notes that belong to the key of the piece.</p> <p>Legato played smoothly</p> <p>Lyrical songlike, flowing</p> <p>Mordent an ornament that goes quickly from the main note to the note above (upper mordent) or below (lower or inverted mordent) and back again.</p> <p>Motif A short melodic phrase of just a few notes</p> <p>Ornament notes that decorate a melody</p> <p>Sequence repetition of a musical idea at a higher or lower pitch</p> <p>Subject the main theme of a fugue</p> <p>Variant A phrase whose shape resembles the original.</p> <p>Staccato played in a detached manner</p> <p>Instrumentation</p> <p>Concertino the group of soloists in a concerto grosso</p> <p>Range The distance from the lowest to the highest notes an instrument can play</p> <p>Ripieno the larger group in a concerto grosso</p> |
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| |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Tonality</p> <p>Passing modulation modulations where the new key on lasts a few bars (or less) before modulating to another key.</p> <p>Relative minor The minor key based on the sixth note of the major scale</p> <p>Harmony</p> <p>Cadential relating to a progression of chords forming a cadence.</p> <p>Circle of fifths A series of chords or keys in which the root or tonic is a fifth lower (or a fourth higher) than the previous one.</p> <p>Consonant intervals or chords that sound pleasant;</p> <p>Diminished seventh a four-note chord (tetrad) made up entirely of minor thirds.</p> <p>Dissonant intervals or chords that clash—seconds, sevenths and the tritone</p> <p>Dominant preparation a passage using the dominant chord to create expectation of a return to the tonic.</p> <p>Dominant seventh chord V with added minor seventh.</p> <p>Figured bass The numbers a chord instrument player in the basso continuo would read.</p> <p>Harmonic rhythm the rate at which chords change.</p> <p>Harmonic sequence When a chord sequence is immediately repeated at a higher or lower pitch</p> <p>Imperfect cadence a cadence ending on chord V. Sounds incomplete.</p> <p>Interrupted cadence a cadence with chord V followed by chord vi—interrupts an expected perfect cadence.</p> <p>Inversion chords with a note other than the root in the bass.</p> <p>Pedal a sustained or repeated note in the bass, while the harmony changes.</p> <p>Perfect cadence Chord V followed by chord I at the end of a phrase.</p> <p>Suspension Prolonging a note to create dissonance with the next chord</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



| Keyword | Learn | ✓ |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Homeless | The state of not having safe, secure and (semi)permanent accommodation. | |
| Conflict | An active disagreement between people with opposing opinions or principles | |
| Commitment | A willingness to give your time and energy to something or someone that you believe in | |
| Marriage | A social and legal bond between two people that gives them rights and duties as spouses and parents | |
| Civil Partnership | A legal bond entered into by two people, it has the same responsibilities as marriage but the difference is that it is entered into by signing a document while marriage is confirmed by vows. | |
| Divorce | An official or legal process to end a marriage. | |
| Dissolution | An official or legal process to end a civil partnership. In many respects it is the same as a divorce. | |

Useful websites:
<https://www.depaul.org.uk/nightstop/>
<https://www.childline.org.uk/> 0800 1111



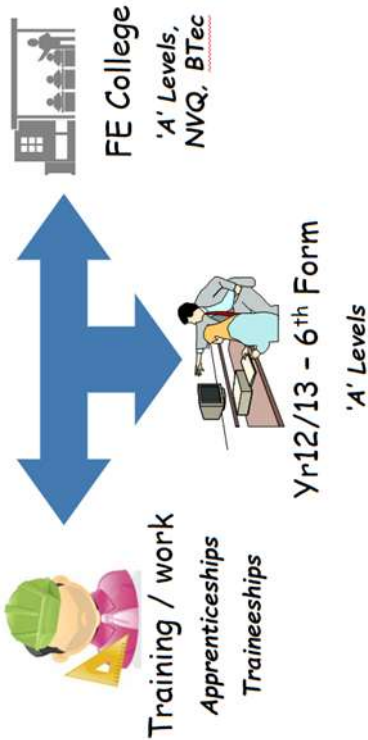
Useful Careers Websites

The **Unifrog** platform is designed to support learners in making the most informed decisions about their futures and has a range of tools that are suitable for all year groups. Each student has their own personal account that provides a wide range of information related to their interests and aspirations.
www.unifrog.org


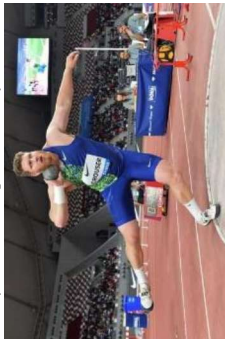


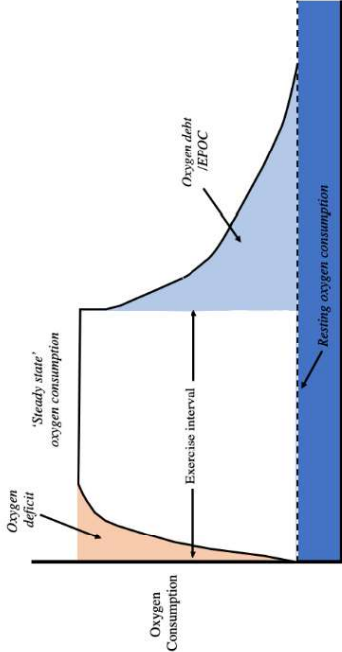
Information on apprenticeships, including a range of different schemes:
<https://amazingapprenticeships.com/>
www.gov.uk/apply-apprenticeship

General careers information:
<https://careerpilot.org.uk/>
www.nationalcareers.service.gov.uk
www.prospects.ac.uk/job-profiles

KS4 - choices for Post 16



3.1.1.3 Anaerobic and Aerobic Exercise – KO 1 of 1

| Aerobic Exercise | | Anaerobic Exercise | | Excess Post-Exercise Oxygen Consumption (EPOC) | | | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|-------------|-----------|-------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><u>Aerobic respiration</u> With the presence of oxygen.</p> <p><u>Word equation</u> oxygen + glucose = energy + carbon dioxide + water</p> <p><u>Application to sport</u> Continuous exercise for more than one minute. Completed at moderate intensity.</p>  <p>Road cycling</p> | | <p><u>Anaerobic respiration</u> Without the presence of oxygen.</p> <p><u>Word equation</u> glucose = energy + lactic acid</p> <p><u>Application to sport</u> Short duration Completed at high intensity</p>  <p>Shot putt</p>  <p>50m freestyle</p>  <p>Vault in gymnastics</p> | | <p><u>Definition</u> The amount of oxygen needed to recover after anaerobic exercise.</p> <p>Lactic acid is produced when the body cannot supply the muscles with enough oxygen.</p> <p>It is a waste product that causes muscles to fatigue and causing the performer to reduce intensity or stop. Your muscles need oxygen to convert the lactic acid into glucose, carbon dioxide and water. This happens after you have finished exercising.</p> <p>To enable this to happen, you must maintain an increased breathing rate and depth of breathing post exercise.</p> <p>By completing an active recovery your heart rate (HR) stays higher. This allows more O2 to be delivered to the muscles, thus clearing away more lactic acid in a shorter amount of time.</p>  <p>The Recovery Process</p> <table><tr><th>Method</th><th>Explanation</th></tr><tr><td>Cool down</td><td>Maintain elevated breathing rate/heart rate for blood flow and stretching will support the removal of lactic acid</td></tr><tr><td>Massage</td><td>Increased blood flow to muscles. Prevents the Delayed Onset of Muscle soreness (DOMS).</td></tr><tr><td>Ice bath</td><td>Causes blood vessels to constrict forcing blood away from the muscles. Following the bath, the blood vessels dilate and oxygenated blood flows to the muscles. Prevents DOMS.</td></tr><tr><td>Diet</td><td>Drinking water to replace the fluids lost during exercise – rehydrate. Increased protein intake to repair muscles. Eat carbohydrates to replenish glycogen stores.</td></tr></table> | | Method | Explanation | Cool down | Maintain elevated breathing rate/heart rate for blood flow and stretching will support the removal of lactic acid | Massage | Increased blood flow to muscles. Prevents the Delayed Onset of Muscle soreness (DOMS). | Ice bath | Causes blood vessels to constrict forcing blood away from the muscles. Following the bath, the blood vessels dilate and oxygenated blood flows to the muscles. Prevents DOMS. | Diet | Drinking water to replace the fluids lost during exercise – rehydrate. Increased protein intake to repair muscles. Eat carbohydrates to replenish glycogen stores. |
| Method | Explanation | | | | | | | | | | | | | | |
| Cool down | Maintain elevated breathing rate/heart rate for blood flow and stretching will support the removal of lactic acid | | | | | | | | | | | | | | |
| Massage | Increased blood flow to muscles. Prevents the Delayed Onset of Muscle soreness (DOMS). | | | | | | | | | | | | | | |
| Ice bath | Causes blood vessels to constrict forcing blood away from the muscles. Following the bath, the blood vessels dilate and oxygenated blood flows to the muscles. Prevents DOMS. | | | | | | | | | | | | | | |
| Diet | Drinking water to replace the fluids lost during exercise – rehydrate. Increased protein intake to repair muscles. Eat carbohydrates to replenish glycogen stores. | | | | | | | | | | | | | | |



Topic 5a - Forces

| Keyword | Learn | ✓ |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Scalar | A quantity with size (magnitude) only. | |
| Vector | A quantity with both size and direction. A vector quantity may be represented by an arrow. The length of the arrow represents the magnitude, and the direction of the arrow the direction of the vector quantity. | |
| Velocity | Speed in a given direction. Velocity is a vector. | |
| Displacement | Distance travelled in a given direction. Displacement is a vector. | |
| Force | A push or pull. Measured in newtons, N. Force is a vector. | |
| Contact force | Force exerted between two objects when they touch. E.g. friction, air resistance, tension and normal contact force. | |
| Non-contact force | Force exerted on objects when they are physically separated. E.g. gravity, electrostatic and magnetic forces. | |
| Centre of mass | The point at which the weight of the object can be taken to act. In diagrams, arrows representing the weight should start from this point. | |
| Resultant force | A single force that can replace multiple forces acting on an object. | |
| Free body diagram | Used to show the magnitude and direction of all the forces acting on the object. | |
| Work | When a force of 1 N pushes an object 1 m, in the direction of the applied force, then 1 J of work is done | |
| Elastic deformation | When an object is stretched, it returns to its original length after the forces are removed. | |
| Inelastic deformation | When an object is stretched, it does not return to its original length after the forces are removed. | |
| Extension | The difference between the stretched and unstretched lengths of a spring. | |
| Elastic potential energy | The energy stored in a stretched (or compressed) spring. | |
| Moment | The turning effect of a force. Measured in newton metres, Nm. | |
| Principle of moments | When a system is balanced the sum of the anti-clockwise moments equal the sum of the clockwise moments. | |
| Fluid | A liquid or a gas. It flows and can take the shape of the container. | |

| Quantity | Unit | Symbol |
|------------------------------|---------------------------|---------------------|
| force | newton | N |
| mass | kilograms | kg |
| gravitational field strength | newtons per kilogram | N / kg |
| work | joule | J |
| extension | metre | m |
| spring constant | newtons per metre | N / m |
| elastic potential energy | joule | J |
| moment | newton metres | Nm |
| pressure | newtons per metre squared | N / m ² |
| density | kilograms per metre cubed | kg / m ³ |

Pressure in fluids. Learn these two statements.

The pressure in fluids causes a force normal (at right angles) to any surface.

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.

Equations

Weight = mass x gravitational field strength

Work done = force x distance in the direction of the force

Force = spring constant x extension

Elastic potential energy = $\frac{1}{2}$ x spring constant x (extension)²

Moment = Force x perpendicular distance

Pressure = $\frac{\text{Force normal to the surface}}{\text{area of the surface}}$

Pressure = height x density of the liquid x gravitational field strength $P = h \times \rho \times g$



| Mi vida digital | |
|----------------------------|-------------------------|
| Escucho música | I listen to music |
| Mando mensajes | I send messages |
| Leo las noticias | I read the news |
| Envío correos electrónicos | I send emails |
| Saco fotos | I take photos |
| Uso aplicaciones como... | I use apps like... |
| Utilizo las redes sociales | I use social networks |
| No tengo ordenador | I don't have a computer |
| Chateo en línea | I chat online |
| Hago compras | I do shopping |
| Hago llamadas | I make phone calls |
| Soy adicto/a a... | I am addicted to... |

| What you prefer to do online | |
|------------------------------|------------------------------|
| Prefiero / preferimos... | I prefer / we prefer |
| compartir fotos | to share photos |
| subir imágenes | to upload images |
| enviar correos electrónicos | to send emails |
| hacer compras por internet | to shop online |
| jugar en directo a... | to play...live |
| ver documentales | to watch documentaries |
| ver series / programas | to watch series / programmes |

| Film vocabulary | |
|--------------------|-----------------|
| una película... | a film |
| de terror | horror |
| de ciencia ficción | science-fiction |
| de aventuras | adventure |
| de superhéroes | superheroes |
| de fantasía | fantasy |
| de acción | action |
| una comedia | a comedy |

| Internet | |
|------------------------------------------|------------------------------------|
| puede ser peligroso | it can be dangerous |
| El uso excesivo de aparatos es adictivos | The excessive use is addictive |
| Las redes sociales | The social networks |
| son seguras | are safe/secure |
| son fáciles de usar | are easy to use |
| son buenas para buscar información | are good to search for information |
| son buenas para comunicarse | are good to communicate |
| Muchas aplicaciones no son muy privadas | Lots of apps aren't private |

| Nos juntamos | |
|-----------------------------|-----------------------------|
| Voy a ... | I am going to... |
| descansar | relax |
| estar en casa | be at home |
| hacer deporte | do sport |
| ir al parque | go to the park |
| limpiar mi habitación | clean my room |
| hacer tareas | do chores |
| salir por la tarde | go out in the afternoon |
| Estoy libre | I am free |
| Tengo que cuidar a mi perro | I have to look after my dog |

| Un día fatal | |
|-----------------------------|-------------------------------|
| Tuve un día fatal porque... | I had an awful day because... |
| Llegué muy tarde | I arrived very late |
| No hice los deberes | I didn't do my homework |
| Me caí | I fell over |
| Mi equipo perdió | My team lost |
| No compré nada | I didn't buy anything |
| Fuimos a un partido | We went to a match |
| Mi equipo perdió | My team lost |

| Sports and activities | |
|-----------------------|-------------------|
| Juego al | I play |
| baloncesto | basketball |
| fútbol | football |
| tenis | tennis |
| voleibol | volleyball |
| Hago / practico | I do / I practice |
| natación | swimming |
| kárate | karate |
| boxeo | boxing |
| artes marciales | martial arts |
| ciclismo | cycling |
| baile | dance |

| El fin de semana pasado | |
|-------------------------|---------------------------|
| Comí | I ate |
| Bebí | I drank |
| Compré una entrada | I bought a ticket |
| Escuché música | I listened to music |
| Fui a un restaurante | I went to a restaurant |
| Fui a un concierto | I went to a concert |
| Fui al gimnasio | I went to the gym |
| Entrené | I trained |
| Gané una competición | I won a competition |
| Me quedé en casa | I stayed at home |
| Hablé con mi amigo | I spoke to my friend |
| Salí con mi amigo | I went out with my friend |
| Al centro comercial | To the shopping centre |
| no hice mucho | I didn't do a lot |

| Past tense opinions | |
|---------------------|---------------|
| Fue divertido | It was fun |
| Fue aburrido | It was boring |
| Lo pasé bomba | I had a blast |



| The present tense | | |
|--------------------------------------------------------------------------------------------------------|--------------|--------------|
| The present tense is formed by taking the –ar/-er/-ir off the infinitive and adding the endings below. | | |
| -ar verbs | -er verbs | -ir verbs |
| <u>-o</u> | <u>-o</u> | <u>-o</u> |
| <u>-as</u> | <u>-es</u> | <u>-es</u> |
| <u>-a</u> | <u>-e</u> | <u>-e</u> |
| <u>-amos</u> | <u>-emos</u> | <u>-imos</u> |
| <u>-áis</u> | <u>-éis</u> | <u>-ís</u> |
| <u>-an</u> | <u>-en</u> | <u>-en</u> |

| The preterite (past) tense | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| The preterite tense is formed by taking the –ar/-er/-ir off the infinitive and adding the endings below. The endings for –er/-ir are the same in the preterite tense | |
| -ar verbs | -er & -ir verbs |
| <u>é</u> | <u>í</u> |
| <u>aste</u> | <u>iste</u> |
| <u>ó</u> | <u>ió</u> |
| <u>amos</u> | <u>imos</u> |
| <u>asteis</u> | <u>isteis</u> |
| <u>aron</u> | <u>ieron</u> |

| The simple future tense | |
|------------------------------------------------------------------------------------------|-------------------|
| The simple future tense is formed by taking the infinitive and adding the endings below: | |
| Jugar | To play |
| Jugaré | I will play |
| Jugarás | you will play |
| Jugará | he/she will play |
| Jugaremos | we will play |
| Jugaréis | you all will play |
| jugarán | they will play |

| Describing a photo | |
|--------------------|-------------------|
| en la foto | in the photo |
| hay | there is/are |
| puedo ver | I can see |
| puedes ver | you can see |
| a la izquierda | on the left |
| a la derecha | on the right |
| en el centro | in the centre |
| en el fondo | in the background |
| en primer plano | in the foreground |
| al lado de | next to |

| Present continuous | |
|--------------------|----------------------|
| está viendo | he / she is watching |
| están comiendo | they are eating |
| está jugando | he / she is playing |

| The simple future tense | |
|-----------------------------------------------------------------------------------------------|--|
| The simple future tense is formed by taking the infinitive and adding the endings seen below. | |
| The endings are the same for AR, ER and IR verbs | |
| Infinitive + ending = future tense | |
| ir + é = iré (I will eat) | |

| Jugar | To play |
|-----------|-------------------|
| Jugaré | I will play |
| Jugarás | you will play |
| Jugará | he/she will play |
| Jugaremos | we will play |
| Jugaréis | you all will play |
| jugarán | they will play |

| Irregular stems | |
|-----------------|-------------------|
| haré | I will do |
| tendré | I will have |
| podré | I will be able to |

| Time expressions | |
|-----------------------|-----------------------|
| Paso...horas al día | I spend...hours a day |
| Siempre | Always |
| Todo el tiempo | All the time |
| Todos los días | Every day |
| A menudo | Often |
| De vez en cuando | From time to time |
| A veces | Sometimes |
| Casi nunca | Almost never |
| Nunca | Never |
| Una vez | Once |
| Dos veces a la semana | Twice a week |
| Los fines de semana | At weekends |

| Direct object pronouns + preterite | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| lo | it (singular / masc.) |
| la | it (singular / fem.) |
| los | them (plural / masc.) |
| las | them (plural / fem.) |
| e.g. Perdí el móvil. <u>Lo</u> perdí a la casa de mi amigo. I lost my phone. I lost it at my friend's house. Perdí mis gafas. <u>Las</u> perdí al colegio. I lost my glasses. I lost them at school. | |

| Preferir – to prefer | |
|----------------------------------------------------------------------------------------------|----------------|
| prefiero | I prefer |
| prefieres | you prefer |
| prefiere | he/she prefers |
| preferimos | we prefer |
| preferís | you all prefer |
| prefieren | they prefer |
| The verb 'preferir' is always followed by an infinitive | |
| Prefiero jugar al fútbol porque es divertido. (I prefer to play football because it is fun). | |

Timetable

[illegible]