



2024-2025

Year 11 Cycle 3

**100% Book**

Name:

Tutor group:

## Your 100% book and knowledge organisers

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Knowledge organisers contain **critical** knowledge you must know. This will help you recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long-term.

**Students remember 50% more when they test themselves after learning.**

**You must have this 100% book for every lesson – it is part of your equipment.**

**You must keep your 100% books (even after you have finished the cycle or the year).**

## How do I use my 100% book for self-quizzing?

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1) Write today's date and the title from the knowledge organiser and underline with a ruler



2) Write out the keywords leaving two lines between each word



3) Cover the definitions apart from the first: read it, cover it, say it in your head, check it



4) If you got it right, move on and quiz yourself on the rest in your head, one by one



5) Cover up all the definitions and write them out from memory



6) Check your answers using green pen

- Tick any definitions which are correct
- Correct any definitions not completely correct



# Correcting spelling, punctuation and grammar

Your work will be marked across all subjects to help you improve your literacy. This is the code that will be used.

| Correcting your spelling, punctuation and grammar |   |
|---|---|
| <b>Sp + underlined word</b>                       | The underlined word is spelt incorrectly.<br>Look, cover, write then check. Do this at least three times so you spell it correctly. |
| <b>A circle around part of a word or a space</b>  | Your punctuation is incorrect, or something is missing (including capital letters).   |
| <b>? + wobbly line</b>                            | You haven't explained your ideas clearly enough.  |
| <b>/</b>  | You need to start a new sentence here.<br>Remember: full stop, capital letter.  |
| <b>//</b>   | You need to start a new paragraph here.<br>Remember: new paragraphs for time, place, topic, person (TiPToP).                        |
| <b>^</b>  | A word is missing where the arrow is pointing.  |



# Year 11 – Cycle 3 – Art – ESA Project

|    |             |   |
|----|-------------|---|
| 1  | Line        | An identifiable path that can vary in width, direction and length               |
| 2  | Medium      | The material used such as clay, paint or pencil                                 |
| 3  | Media       | More than one medium  |
| 4  | Organic     | The formation of shapes in an irregular pattern or style                        |
| 5  | Perspective | The use of lines to create depth or three dimensions                            |
| 6  | Plaster     | A chalk-like solid used to create sculptures and other forms of artwork         |
| 7  | Shade       | Black that are mixed with a colour to change how dark it is                     |
| 8  | Tint        | White that are mixed with a colour to change how light it is                    |
| 9  | Stencil     | Shapes cut into a material that allow paint or ink to be applied                |
| 10 | Symbol      | An image that conveys information without words                                 |
| 11 | Texture     | The feeling of an object  |
| 12 | Unity       | Using similar elements in art to create a consistent theme                      |
| 13 | Wash        | A highly fluid application of colour  |
| 14 | Symmetry    | Art made using similar parts of designs that are mirrored                       |
| 15 | Repetition  | Objects, shapes, space, light, direction, lines etc. are repeated in an artwork |

# Year 11 – Cycle 3 – Business – Section 6 (Finance)

## Part A

|   |                  |   |
|---|------------------|---|
| 1 | Inflows          | Money flowing into the business   |
| 2 | Outflows         | Money flowing out of the business   |
| 3 | Net Cash Flow    | Total Inflows – Total Outflows  |
| 4 | Fixed Costs      | Costs that do not change based on production                              |
| 5 | Variable Costs   | Costs that change based on production                                     |
| 6 | Total Costs      | Fixed + Variable Costs  |
| 7 | Revenue/Turnover | Price x Quantity Sold   |
| 8 | Profit           | Total Revenue - Total Costs   |
| 9 | Break Even       | Revenue and costs are equal, so the business is not making loss or profit |

## Part B

|    |                        |   |
|----|------------------------|---|
| 10 | Margin of Safety       | Actual Output - Break Even Output   |
| 11 | Average Rate of Return | Average Yearly Profit / Cost of Investment x100                                     |
| 12 | Gross Profit           | Revenue - Cost of Sales (profit after taking away direct costs of making a product) |
| 13 | Operating Profit       | Gross Profit – Overheads (profit after taking away both direct and indirect costs)  |
| 14 | Net Profit             | Operating Profit – Interest (profit after taking away all costs)                    |
| 15 | Gross Profit Margin    | Gross Profit / Revenue x 100  |
| 16 | Net Profit Margin      | Net Profit / Revenue x 100  |
| 17 | Liability              | Money owed by the business which must be paid back                                  |
| 18 | Asset                  | Cash and other items of value owned by the business                                 |

# Year 11 – Cycle 3 – GCSE Citizenship: Politics and Participation

|    |                          |  |
|----|--------------------------|--|
| 1  | Democracy                | Citizens can use their voice through voting in fair elections      |
| 2  | Representative democracy | A type of government where citizens elect others to represent them |
| 3  | Equality                 | Equal treatment for all  |
| 4  | Rule of law              | The principle that the law applies equally to everyone             |
| 5  | Councillor               | A citizen who is elected and works in a local council              |
| 6  | Referendum               | A vote on one particular issue                                     |
| 7  | House of Commons         | Members who are elected and responsible for making laws            |
| 8  | Judiciary                | Made up of judges responsible for the legal system                 |
| 9  | Legislature              | A group that decides the law                                       |
| 10 | Executive                | Those who make the key day-to-day decisions in the country         |
| 11 | Prime Minister           | Leader of the government   |
| 12 | Parliament               | Where MPs meet and pass new laws                                   |
| 13 | Cabinet                  | Senior and important members of the government                     |
| 14 | Devolution               | The transfer of power from national to local government            |
| 15 | Voter apathy             | Citizens having a lack of interest in voting                       |
| 16 | Constituency             | An area which elects an MP to represent them                       |
| 17 | Individual liberty       | People have the freedom to make their own choices and decisions    |
| 18 | Political parties        | A group of people who share the same political beliefs             |

## Year 11 – Cycle 2 – Design & Technology

|    |                                |  |
|----|--------------------------------|--|
| 1  | Anthropometrics                | The practice of taking measurements of the human body and providing data that can be used by designers                                   |
| 2  | Ergonomics                     | The relationship between people and the products they use  |
| 3  | One-off production             | One product is made  |
| 4  | Batch production               | Several identical products are made  |
| 5  | High-volume production         | Many products are made, making extensive use of machinery and manufacturing aids   |
| 6  | Jigs                           | A mechanical device to aid production  |
| 7  | Gore-Tex                       | A breathable, waterproof and windproof fabric which allows the flow of air in and out  |
| 8  | Kevlar                         | A fibre that is lightweight, flexible and extremely durable fibre that has excellent resistance to heat                                  |
| 9  | Nomex                          | A non-flammable, heat-resistant fibre used where resistance to heat and flames is essential (e.g. firefighter suit)                      |
| 10 | Geotextiles                    | Permeable fabrics made originally for use with soil, with the ability to filter, separate, protect and drainage                          |
| 11 | Phase-changing materials       | Materials that can maintain body temperature by storing and releasing heat (e.g. astronaut suit)   |
| 12 | Interactive Textiles           | Fabrics that contain a device or circuit that responds and reacts with the user (e.g. heart monitor for footballers)                     |
| 13 | Rhovyl                         | A synthetic fibre which is non-flammable, crease resistant, has good thermal properties, is antibacterial, waterproof and dries quickly. |
| 14 | Microencapsulation             | A material where microcapsules have been added to the fabric / fibre (e.g. anti-bacterial chemicals)                                     |
| 15 | Market Pull                    | A new product is introduced due to consumer wants / needs  |
| 16 | Technology Push                | A development in material / component / manufacturing leading to new product inventions  |
| 17 | Environmental Directives       | Laws put in place to protect the environment   |
| 18 | The Consumer Rights Act (2015) | A law that protects consumers when they purchase a product / service.<br>All goods should be as described and of satisfactory quality    |

## Year 11 – Cycle 3 – Design & Technology

|    |  |  |
|----|--|--|
| 1  | Synthetic polymers                     | Manmade polymers created from crude oil  |
| 2  | Biopolymers                            | Polymers made from natural resources such as plants  |
| 3  | Carbon fibre reinforced polymer (CFRP) | A thermoforming polymer reinforced with carbon fibre   |
| 4  | Glass-reinforced plastic (GRP)         | A thermoforming polymer reinforced with glass fibres   |
| 5  | Plasticisers                           | An additive that gives flexibility to polymers   |
| 6  | Stabilisers                            | An additive in polymers that reduces UV degradation and brittleness                                    |
| 7  | Extrusion                              | A length of material with a consistent cross-section   |
| 8  | Filament                               | The extruded material that is used in a 3D printer   |
| 9  | One-off production                     | One product is made  |
| 10 | Batch production                       | Several identical products are made  |
| 11 | Jigs                                   | A mechanical device to aid production  |
| 12 | High-volume production                 | Many products are made, making extensive use of machinery and manufacturing aids                       |
| 13 | Blow moulding                          | Shaping a thermoforming polymer by heating it and blowing it into shape                                |
| 14 | Vacuum forming                         | Shaping a thermoforming polymer by heating it and sucking it around a mould                            |
| 15 | Screen printing                        | A printing process for adding detail or text to polymer products                                       |
| 16 | Vinyl                                  | A self-adhesive polymer, available in a range of colours and suitable for CNC knife cutting            |
| 17 | Anthropometrics                        | The practice of taking measurements of the human body and providing data that can be used by designers |
| 18 | Ergonomics                             | The relationship between people and the products they use  |



## Year 11 – Cycle 3 – Drama

### **A: Noughts and Crosses**

|    |                |   |
|----|----------------|---|
| 1  | Describe       | To detail what acting style was used within the performance with physical and vocal skill examples                          |
| 2  | Analyse        | To give reasons why an acting choice might have been made and what it communicated to the audience, linking to the question |
| 3  | Evaluate       | To give an opinion, using the word 'I', on the acting choice used and how it made you feel                                  |
| 4  | PDAE Structure | The structure of the main body of written live review answer: Point, Describe, Analyse, Evaluate                            |
| 8  | Contemporary   | Set in the current or future time period  |
| 9  | Dystopian      | In a world similar to our own but with ideals reversed  |
| 10 | Context        | The social, political and historical meaning behind the play  |

### **B: Live review - *Peter Pan***

|   |                              |   |
|---|------------------------------|---|
| 1 | Minimalistic                 | Theatre that uses the smallest possible range of design set   |
| 2 | End on                       | Audience seated at one side of the room opposite the stage  |
| 3 | Grammelot                    | A style of language in satirical theatre, a gibberish with macaronic and onomatopoeic elements, associated with pantomime and mimicry |
| 4 | Naturalistic acting          | A performance style that is believable and as true to real life as possible   |
| 5 | Non-naturalistic transitions | Movements from one scene to another that are not true to real life, e.g., slow motion   |
| 6 | Madeleine Worrall            | The actor playing Wendy   |
| 7 | Paul Hilton                  | The actor playing Peter Pan   |
| 8 | Anna Francolini              | The actor playing Hook  |

## Year 11 – Cycle 3 – English

|    |                     |   |
|----|---------------------|---|
| 1  | Hinges on           | Depends on  |
| 2  | Resignation to/of   | The state of accepting something is undesirable but inevitable  |
| 3  | Halt                | To stop   |
| 4  | Social norms        | The behaviors a society adopts, that are often unspoken codes of conduct                                  |
| 5  | Caricature          | To present someone in a funny way in order to mock that type of person                                    |
| 6  | Archetypal          | To describe something in a funny or exaggerated way   |
| 7  | Pivotal moment      | A critical or very important moment   |
| 8  | Entrenched          | An attitude, habit or belief that is firmly establish and difficult or unlikely to change                 |
| 9  | Grim reality        | The serious, gloomy or foreboding situation that someone is truly in                                      |
| 10 | Alienation          | The state of being isolated or estranged  |
| 11 | Hypocrisy           | Claiming to have higher moral standards   |
| 12 | Complacency         | Feeling so satisfied with your own abilities or situation that you feel you do not need to try any harder |
| 13 | Naïve               | Showing a lack of experience or judgement   |
| 14 | Infantilisation     | Treating someone as though they are a child   |
| 15 | Vehicle for         | A thing that is used to express or embody an idea/message   |
| 16 | Compassion          | When you feel for someone's suffering   |
| 17 | Callous (disregard) | Cruelly ignoring of a person or situation   |
| 18 | Meek                | Quiet, gentle   |
| 19 | Benevolent          | Having a desire to do good  |
| 20 | Façade              | The outward appearance of something (that is usually deceptive)   |
| 21 | Infallible          | Incapable of making mistakes or being wrong   |
| 22 | Embody              | To take the form of or be the expression of an idea   |
| 23 | Valiant             | Showing courage or determination  |

# Year 11 – Cycle 3 – Enterprise BTEC – Component 2

## Part A

|   |                      |   |
|---|----------------------|---|
| 1 | Financial aims       | Targets for the enterprise involving money, e.g. raising £1000 in revenue           |
| 2 | Non-financial aims   | Targets for the enterprise not related to money, e.g. provide good customer service |
| 3 | Unique selling point | The feature which makes a product stand out   |
| 4 | Competitors          | Other enterprises selling similar products  |
| 5 | Costs                | Spending on making products and running the enterprise                              |
| 6 | Target market        | A portion of the market being targeted for sales                                    |
| 7 | Segment              | A group of people with similar needs and wants                                      |

## Part B

|    |                     |  |
|----|---------------------|--|
| 1  | Advertising         | Enterprise pays to communicate with customers e.g. TV advert, billboard                      |
| 2  | Promotion           | Communicating with customers to raise awareness of the product                               |
| 3  | Physical resources  | Machinery, stock and other physical items required to run the enterprise                     |
| 4  | Financial resources | Money raised to start and run the enterprise   |
| 5  | Human resources     | Workers required to run the enterprise   |
| 6  | Risk assessment     | A document outlining risks and plans to avoid those risks                                    |
| 7  | Contingency plan    | A plan B in case something goes wrong  |
| 8  | Sourcing            | Where the enterprise gets resources from   |
| 9  | Quality control     | Checking that the products are not faulty and are the right size, shape, weight, colour etc. |
| 10 | Cost effectiveness  | Checking for the lowest cost ways of producing   |
| 11 | Start-up costs      | The spending on resources required to start the enterprise                                   |

# Year 11 – French – Key Structures

| A: Opinion phrases   |                               |                               |
|----------------------|-------------------------------|-------------------------------|
| 1                    | I believe that                | je crois que                  |
| 2                    | I would say that              | je dirais que                 |
| 3                    | I think that                  | je pense que                  |
| 4                    | According to me               | selon moi                     |
| 5                    | In my opinion                 | quant à moi                   |
| 6                    | Frankly                       | franchement                   |
| B: Negative opinions |                               |                               |
| 1                    | It gets on my nerves          | ça m'énerve                   |
| 2                    | I'm fed up with               | j'en ai marre de              |
| 3                    | I have some worries regarding | j'ai des soucis par rapport à |
| 4                    | What scares me                | ce qui me fait peur           |
| 5                    | What worries me is            | ce qui m'inquiète est         |
| 6                    | I can't stand                 | je ne supporte pas            |
| 7                    | I can't stand                 | j'ai horreur de               |
| C: Positive opinions |                               |                               |
| 1                    | I quite like                  | j'aime bien                   |
| 2                    | I'm a fan of                  | je suis fan de                |
| 3                    | I am passionate about         | je suis passionné par         |
| 4                    | What I like the most is       | ce que j'aime le plus est     |
| 5                    | What I love is                | ce que j'adore est            |

| D: Positive reasons – present tense |                                  |                          |
|-------------------------------------|----------------------------------|--------------------------|
| 1                                   | It makes me laugh                | ça me fait rire          |
| 2                                   | It relaxes me                    | ça me détend             |
| 3                                   | It pleases me                    | ça me plaît              |
| 4                                   | It helps me to relax             | ça m'aide à me reposer   |
| 5                                   | It helps me to forget everything | ça m'aide à tout oublier |
| 6                                   | I have a wicked time             | je m'éclate              |
| 7                                   | I have fun                       | je m'amuse               |
| E: Negative reasons – present tense |                                  |                          |
| 1                                   | It makes me scared               | ça me fait peur          |
| 2                                   | It's not worth it                | ça ne vaut pas la peine  |
| 3                                   | It worries me                    | ça m'inquiète            |
| 5                                   | I get bored                      | je m'ennuie              |
| 6                                   | It tires me                      | ça me fatigue            |
| 7                                   | It irritates me                  | ça m'embête              |
| F: Positive adjectives              |                                  |                          |
| 1                                   | Marvellous                       | merveilleux              |
| 2                                   | Wonderful                        | formidable               |
| 3                                   | Unbelievable                     | incroyable               |
| 4                                   | Entertaining                     | divertissant             |
| 5                                   | Fascinating                      | fascinant                |
| 6                                   | Exciting                         | passionnant              |
| 7                                   | Unforgettable                    | inoubliable              |
| 8                                   | Pleasant                         | agréable                 |

| G: Negative Adjectives   |                         |                                 |
|--------------------------|-------------------------|---------------------------------|
| 1                        | Boring                  | monotone                        |
| 2                        | Annoying                | pénible                         |
| 3                        | Unpleasant              | désagréable                     |
| 4                        | Annoying                | énervant                        |
| 5                        | Ridiculous              | ridicule                        |
| 6                        | Awful                   | affreux                         |
| 7                        | Worrying                | inquiétant                      |
| 8                        | Tiring                  | fatigant                        |
| H: Infinitive structures |                         |                                 |
| 1                        | I want                  | je veux                         |
| 2                        | I hope                  | j'espère                        |
| 3                        | I want                  | j'ai envie de                   |
| 4                        | I would like            | j'aimerais                      |
| 5                        | I have the intention to | j'ai l'intention de             |
| 6                        | I feel like             | ça me dit de                    |
| 7                        | I need                  | j'ai besoin de                  |
| I: Negatives             |                         |                                 |
| 1                        | I don't do              | je <b>ne</b> fais <b>pas</b>    |
| 2                        | I no-longer do          | je <b>ne</b> fais <b>plus</b>   |
| 3                        | I don't do anything     | je <b>ne</b> fais <b>rien</b>   |
| 4                        | I only do               | je <b>ne</b> fais <b>que</b>    |
| 5                        | I never do              | je <b>ne</b> fais <b>jamais</b> |
| 6                        | There isn't any         | il n'y a <b>aucun</b>           |
| 7                        | There isn't anybody     | il n'y a <b>personne</b>        |

| J: Connectives               |                       |                    |
|------------------------------|-----------------------|--------------------|
| 1                            | However               | pourtant/toutefois |
| 2                            | Despite the fact that | malgré le fait que |
| 3                            | Nevertheless          | néanmoins          |
| 4                            | On the one hand       | d'un côté          |
| 5                            | On the other hand     | de l'autre côté    |
| 6                            | Therefore             | du coup            |
| 7                            | So                    | donc               |
| 8                            | Due to                | à cause de         |
| 9                            | In fact               | en fait            |
| K: Small but important words |                       |                    |
| 1                            | Even                  | même               |
| 2                            | If                    | si                 |
| 3                            | Except                | sauf               |
| 4                            | Without               | sans               |
| 5                            | Especially            | surtout            |
| 6                            | Everywhere            | partout            |
| 7                            | The majority          | la plupart         |
| 8                            | Instead of            | au lieu de         |
| 9                            | Few / not many        | peu                |
| L: Time phrases              |                       |                    |
| 1                            | This evening          | ce soir            |
| 2                            | Usually               | d'habitude         |
| 3                            | Last month            | le mois dernier    |
| 4                            | Two years ago         | il y a deux ans    |
| 5                            | The next day          | le lendemain       |
| 6                            | Always                | toujours           |

# Year 11 – Cycle 3 – Geography

## A: Fieldwork

|   |                   |  |
|---|-------------------|--|
| 1 | River discharge   | The volume of water flowing through a river channel at a given point |
| 2 | Representative    | A sample which reflects the whole area or people                     |
| 3 | Accurate          | Evidence which is a true   |
| 4 | Reliable          | If you measure it again you will get the same results                |
| 5 | Sample            | The group of people or sites you choose to investigate               |
| 6 | Stratified sample | Choosing people or sites based on pre-determined groups              |
| 7 | Systematic sample | Choosing people or sites at equal intervals                          |
| 8 | Random sample     | Selecting people or sites without bias                               |
| 9 | Bias              | Prejudice for or against one particular group of people or place     |

## B: UK Challenges

|   |                         |  |
|---|-------------------------|--|
| 1 | Two-speed economy       | The uneven growth of the UK economy                                |
| 2 | Greenfield site         | Site which was previously undeveloped                              |
| 3 | Brownfield site         | A site which has previously been built on.                         |
| 4 | Immigrant               | Someone who moves to a new country or area                         |
| 5 | Conservation            | Protection of an area  |
| 6 | National park           | Large area of natural land protected by government                 |
| 7 | Low-emissions zone      | Areas where most polluting cars are not allowed to travel          |
| 8 | Storm surge             | A temporary rise in sea level associated with low-pressure systems |
| 9 | Salt-water encroachment | When sea water gets into groundwater supplies                      |

# Year 11 – Cycle 3 – History – Elizabethan England

| A: Elizabethan government          |                                   |   |
|------------------------------------|-----------------------------------|---|
| 1                                  | Patronage                         | A system used by the monarch to reward loyalty  |
| 2                                  | Factions                          | Rival groups with different political interests   |
| 3                                  | JPs (Justices of the peace)       | Members of the gentry who enforced law and order in each county                                     |
| B: Lifestyles of the rich and poor |                                   |   |
| 4                                  | Vagrant                           | An unemployed and homeless person that travelled the country in search of work                      |
| 5                                  | Impotent poor                     | Poor people who were viewed as being genuinely unable to work and deserving of charity              |
| C: Popular entertainment           |                                   |   |
| 6                                  | Theatre companies                 | Groups of actors who were supported financially by wealthy noblemen                                 |
| 7                                  | The pit                           | Area where the poor would stand in a theatre and watch a play                                       |
| D: The Religious Settlement        |                                   |   |
| 8                                  | Religious settlement / Middle Way | Changes introduced by Elizabeth to provide a religious compromise between Protestants and Catholics |
| 9                                  | Church of England                 | The official name given to Protestantism in England   |


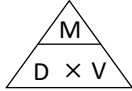

| 10                     | Royal injunctions | Instructions given to the clergy from the monarch                              |
|------------------------|-------------------|--|
| E: The Catholic Threat |                   |  |
| 11                     | Recusants         | Catholics who refused to attend Church of England services                     |
| 12                     | Excommunication   | Exclusion from the protection of the Catholic Church and entry to heaven       |
| F: The Spanish Armada  |                   |  |
| 13                     | Privateers        | Sailors that had permission from the monarch to capture goods from enemy ships |
| 14                     | Beacon            | a fire or light set up in a high position as a warning or signal               |
| G: The Puritan Threat  |                   |  |
| 15                     | Puritan           | Protestant sect that promoted a pure interpretation of the Bible               |
| 16                     | Presbyterians     | Puritans that wanted to replace bishops with local elders                      |
| 17                     | Propheying        | Gatherings of Puritans to discuss the Bible and Puritan beliefs                |
| 18                     | Separatists       | Extreme Puritans who wanted to break away from the Church of England           |

# Year 11 – Cycle 3 – History: Germany

| Impact of World War One on the Weimar Republic |                             |  |
|--|-----------------------------|--|
| 1  | Dolchstoss                  | The theory that the Weimar government had stabbed Germany in the back for signing the armistice and the Treaty of Versailles |
| 2  | Constitution                | The laws that set out how a country is going to be governed  |
| 3  | Coalition government        | A government containing two or more political parties  |
| 4  | Proportional representation | The voting system used by the Weimar Republic which led to coalition governments   |
| 5  | Article 48                  | Special powers given to the President to take control away from the Reichstag during a state of emergency                    |
| 6  | Reichstag                   | The German parliament  |
| 7  | President                   | The head of state who was in control of the army and could use Article 48  |
| 8  | Chancellor                  | The head of the coalition government in the reichstag  |
| 9  | Gleichschaltung             | The German term for bringing all of Germany into line with Nazi values   |
| 10   | Trade unions                | A group of workers from a particular trade that is formed to protect or further the rights of the workers                    |
| 11   | Führer                      | Hitler's title which combined the role of president and chancellor   |
| 12   | Rearmament                  | The process of building up the military  |
| 13   | Aryan race                  | The Nazi term for 'pure' Germans   |
| 14   | Boycott                     | Deliberately not purchasing / using something for political reasons  |
| 15   | Gestapo                     | Nazi secret police   |
| 16   | Lebensraum                  | Living space   |
| 17   | Anschluss                   | The political and economic union of Germany and Austria  |
| 18   | Appeasement                 | A policy which makes allowances to a hostile country in order to maintain peace  |

# Year 11 – Cycle 3 – Mathematics (Foundation)

## A: Compound measures

|   |                                   |   |
|---|-----------------------------------|---|
| 1 | Speed, distance and time triangle |  |
| 2 | Density, mass and volume triangle |  |
| 3 | Pressure, force and area triangle |  |

## B: Index laws

|   |                  |   |
|---|------------------|---|
| 1 | $a^m \times a^n$ | $a^{m+n}$ for example, $2^5 \times 2^3 = 2^8$         |
| 2 | $a^m \div a^n$   | $a^{m-n}$ for example, $2^5 \div 2^3 = 2^2$           |
| 3 | $(a^m)^n$        | $a^{mn}$ for example, $(2^5)^3 = 2^{15}$              |
| 4 | $a^0$            | 1   |
| 5 | $a^{-n}$         | $\frac{1}{a^n}$ for example, $3^{-2} = \frac{1}{3^2}$ |

## C: Square numbers and prime numbers

|   |                |   |
|---|----------------|---|
| 1 | Square numbers | 1, 4, 9, 16, 25, 36, 49, 64, 81, 100... |
| 2 | Prime numbers  | 2, 3, 5, 7, 11, 13, 17, 19, 23, 29...   |

## D: Averages and range

|   |        |   |
|---|--------|---|
| 1 | Mean   | Add up all the numbers and divide by how many numbers there are |
| 2 | Median | Put the numbers in order of size and find the middle number     |
| 3 | Mode   | The most common   |
| 4 | Range  | Largest number – smallest number                                |

## E: Percentages

|   |                                     |   |
|---|-------------------------------------|---|
| 1 | Multiplier for an increase by $n\%$ | $100 + n$ , then divide by 100  |
| 2 | Multiplier for a decrease by $n\%$  | $100 - n$ , then divide by 100  |
| 3 | Percentage change                   | $\frac{\text{Actual change}}{\text{Original amount}} \times 100$  |
| 4 | Compound growth, decay              | Final amount = starting amount $\times$ multiplier <sup><math>n</math></sup> where $n$ is the number of years |



# Year 11 – Cycle 3 – Mathematics (Higher)

## A: Gradient and area under a curve

|   |                                   |              |
|---|-----------------------------------|--------------|
| 1 | Gradient of a distance-time graph | Speed        |
| 2 | Gradient of a speed-time graph    | Acceleration |
| 3 | Area under a speed-time curve     | Distance     |

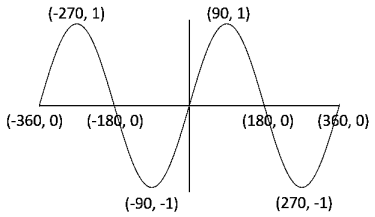
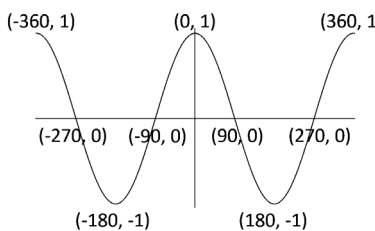
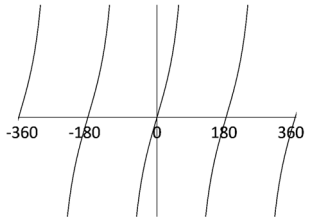
## B: Proof

|   |                            |                                      |
|---|----------------------------|--------------------------------------|
| 1 | Even number                | $2n$                                 |
| 2 | Odd number                 | $2n + 1$                             |
| 3 | Consecutive numbers        | $n, \quad n + 1, \quad n + 2$        |
| 4 | Consecutive even numbers   | $2n, \quad 2n + 2, \quad 2n + 4$     |
| 5 | Consecutive odd numbers    | $2n + 1, \quad 2n + 3, \quad 2n + 5$ |
| 6 | Two different even numbers | $2n$ and $2m$                        |
| 7 | Two different odd numbers  | $2n + 1$ and $2m + 1$                |

## C: Graph transformations

|   |  |                             |
|---|--|-----------------------------|
| 1 | Translation $\begin{pmatrix} a \\ 0 \end{pmatrix}$ | $f(x) \rightarrow f(x - a)$ |
| 2 | Translation $\begin{pmatrix} 0 \\ b \end{pmatrix}$ | $f(x) \rightarrow f(x) + b$ |
| 3 | Reflection in the $y$ -axis                        | $f(x) \rightarrow f(-x)$    |
| 4 | Reflection in the $x$ -axis                        | $f(x) \rightarrow -f(x)$    |

## D: Trigonometric graphs

|   |              |   |
|---|--------------|---|
| 1 | $y = \sin x$ |    |
| 2 | $y = \cos x$ |   |
| 3 | $y = \tan x$ |  |

# Year 11 – Cycle 3 – Music


## AOS4 : Popular music

|   |            |  |
|---|------------|--|
| 1 | Belt       | A bright, powerful vocal sound, high in the chest voice      |
| 2 | Melismatic | Each syllable sung to a number of different notes            |
| 3 | A cappella | Voices singing without instrumental accompaniment            |
| 4 | Falsetto   | Male voice in a higher than usual range                      |
| 5 | Middle 8   | A link section – often 8 bars – with different musical ideas |

## AOS2 : Music for ensemble

|   |                |   |
|---|----------------|---|
| 1 | Scat           | Vocal improvisation using wordless/nonsense syllables |
| 2 | Swing style    | 'Jazzy' rhythm with a triplet/dotted note feeling     |
| 3 | Rhythm section | Drums, bass (guitar or double bass), piano/guitar     |
| 4 | Horn section   | Trumpet, trombone, saxophone                          |

## B: General Theory

|   |                 |   |
|---|-----------------|---|
| 1 | Triplet         | 3 notes played in the time of two  |
| 2 | Accelerando     | Gradually getting faster  |
| 3 | Ritardando      | Gradually getting slower  |
| 4 | Sforzando (Sfz) | Sudden stress/accents which results in a louder dynamics  |
| 5 | Double stopping | Playing two strings at the same time  |

## AOS1: Forms & devices

|   |                 |  |
|---|-----------------|--|
| 1 | Minuet and Trio | A dance that was used as the 3rd movement in symphonies. Minuet had two repeated sections, the trio had two new repeated sections, with a return to the minuet at the end. |
| 2 | Rondo           | 'A' returns throughout the piece with contrasting sections called 'episodes' containing new ideas and using different keys.  |
| 3 | Variations      | The main theme. tune is repeated and developed a number of times in a variety of different ways.   |
| 4 | Strophic        | A simple form where the song uses the same melody over and over.<br>A A A  |

## Year 11 – Cycle 3 – Religious Studies – Human Rights & Good and Evil

|   |                              |  |
|---|------------------------------|--|
| 1 | Social justice               | <ul style="list-style-type: none"> <li>• 'Allah orders justice and good conduct' - Qur'an</li> <li>• Parable of the Good Samaritan: 'love your neighbour as yourself'</li> </ul>                                       |
| 2 | Prejudice and Discrimination | <ul style="list-style-type: none"> <li>• 'You are all one in Christ' - Bible</li> <li>• 'Do not let the hatred of people lead you to injustice' - Qur'an</li> </ul>  |
| 3 | Wealth and poverty           | <ul style="list-style-type: none"> <li>• 'Remember the Lord your God, for it is he who gives you (...) wealth' - Bible</li> <li>• 'Gambling is from the work of Satan' - Qur'an</li> </ul>                             |
| 4 | Censorship                   | <ul style="list-style-type: none"> <li>• 'Go into the world and preach the gospel to all creation' - Bible</li> <li>• 'To you your religion and to me mine' - Qur'an</li> </ul>  |
| 5 | Punishment                   | <ul style="list-style-type: none"> <li>• 'An eye for an eye and a tooth for a tooth' - Qur'an and Bible</li> <li>• 'Father forgive them for they know not what they do' - Bible</li> </ul>                             |
| 6 | Death penalty                | <ul style="list-style-type: none"> <li>• Imago Dei - Bible</li> <li>• 'Whoever kills a soul it is as if he has killed all of mankind' - Qur'an</li> </ul>  |
| 7 | Forgiveness                  | <ul style="list-style-type: none"> <li>• 'Do not judge and you will not be judged' - Bible</li> <li>• 'Allah loves those who turn unto Him in repentance' - Qur'an</li> </ul>  |
| 8 | Evil                         | <ul style="list-style-type: none"> <li>• 'The Lord gives and the Lord takes away' - Story of Job - Bible</li> <li>• 'He cannot be questioned for His acts, but they will be questioned (for theirs)' Qur'an</li> </ul> |

## Year 11 – Cycle 3 – Religious Studies –Life and death and Relationships

|   |                      |   |
|---|----------------------|---|
| 1 | Creation             | <ul style="list-style-type: none"> <li>• ‘In the image of God he created them; male and female’ Bible</li> <li>• ‘Your Lord is God who created the heavens and earth in six days’ Qur’an</li> </ul>   |
| 2 | Environment          | <ul style="list-style-type: none"> <li>• ‘Rule over the fish in the sea and the birds in the sky’ Bible</li> <li>• ‘The earth is green and beautiful (...) you are his stewards over it’ Hadith</li> </ul>  |
| 3 | Abortion             | <ul style="list-style-type: none"> <li>• Reproduction is one of Aquinas' Primary Precepts - Catholic Church</li> <li>• ‘Do not kill your children out of poverty’ Qur’an</li> <li>• ‘Thou shalt not kill’ Bible</li> </ul>  |
| 4 | Euthanasia           | <ul style="list-style-type: none"> <li>• ‘Whoever kills a soul, it is as if he has killed all of mankind’ Qur’an</li> <li>• Preservation of life is one of Aquinas' Primary Precepts - Catholic Church</li> </ul>   |
| 5 | Afterlife            | <ul style="list-style-type: none"> <li>• ‘Nor take life – which God has made sacred, except for a just cause’ Qur’an</li> <li>• ‘The body that is sown is perishable, it is raised imperishable’ Bible</li> <li>• ‘And everything they did is in written records’ Qur’an</li> </ul>   |
| 6 | Family               | <ul style="list-style-type: none"> <li>• ‘Men are the caretakers of women’ Qur’an</li> <li>• ‘My mother, my mother, my mother and then my father’ Qur’an</li> <li>• “Now as the church submits to Christ, so also wives should submit to their husbands in everything.” New Testament</li> <li>• ‘Male and female he created them’ Bible</li> </ul>             |
| 7 | Marriage and divorce | <ul style="list-style-type: none"> <li>• ‘What God has joined together, let not man separate’ Bible</li> <li>• ‘Two become one flesh’ Bible</li> <li>• ‘He created for you from yourselves mates so that you may find tranquility in them’ Qur’an</li> <li>• ‘Of all things permitted by Allah; divorce is the most hated’ Qur’an</li> </ul>                    |
| 8 | Sex                  | <ul style="list-style-type: none"> <li>• ‘Do not approach unlawful sexual intercourse’ Qur’an</li> <li>• ‘Indeed you approach men with desire, instead of women. You are a transgressing people’ Qur’an</li> <li>• ‘Be fruitful and multiply’ Bible</li> <li>• Reproduction and preserve life are two of Aquinas' Primary Precepts – Catholic Church</li> </ul> |
| 9 | Gender equality      | <ul style="list-style-type: none"> <li>• ‘If a woman is to speak in a Church it is disgraceful’ Bible</li> <li>• ‘I do not permit a woman to teach or have authority over a man’ Bible</li> <li>• ‘Their husbands have the rights to take them back’ Qur’an</li> <li>• ‘Whether male or female; they will enter paradise’ Qur’an</li> </ul>                     |

# Year 11 – Cycle 3 – Biology Paper 1

|    |                        |   |    |                           |   |
|----|------------------------|---|----|---------------------------|---|
| 1  | Eukaryotic             | A cell with a nucleus   | 15 | Malignant tumour          | Tumour cells that spread to other parts of the body through the bloodstream   |
| 2  | Prokaryotic            | A cell without a nucleus  | 16 | Immune                    | If infected by the same pathogen again, the body quickly produces antibodies to kill the pathogen before it makes you ill |
| 3  | Root hair cells        | Root hair cells absorb water and minerals; they have a big surface area for absorption                                      | 17 | Preclinical trials        | Drugs are tested on human cells and animals in the lab to check if they are toxic   |
| 4  | Cell cycle             | Three stages are cell growth, chromosomes copied, mitosis   | 18 | Phase 1 clinical trials   | Test low doses on healthy volunteers to check for side effects  |
| 5  | Mitosis                | Produces two genetically identical daughter cells for the growth and repair of tissues                                      | 19 | Phase 2 clinical trials   | Test on patients with the disease, comparing the effect of a placebo versus the drug                                      |
| 6  | Stem cell              | An undifferentiated cell  | 20 | Uses of glucose in plants | Respiration, making cellulose for cell walls, making amino acids and making lipids or starch for energy storage           |
| 7  | Osmosis                | The movement of water molecules across a partially permeable membrane, from a dilute to a more concentrated solution        | 21 | Limiting factor           | A factor that affects the rate of photosynthesis when in short supply   |
| 8  | Transpiration          | Loss of water from a plant; water moves up the xylem, and then evaporates from the stomata                                  | 22 | Sodium hydrogen carbonate | Used to increase the amount of carbon dioxide dissolved in water when investigating photosynthesis                        |
| 9  | Amylase                | Enzyme that breaks down starch into simple sugars; it's produced in the salivary glands and the pancreas                    | 23 | Uses of energy            | Chemical reactions, movement, maintaining constant body temperature   |
| 10 | Protease               | Enzyme that breaks down proteins into amino acids; it's produced in the stomach and the pancreas                            | 24 | Exercise                  | More muscle contraction, more energy needed and greater rate of respiration   |
| 11 | Lipase                 | Enzyme that breaks down lipids into glycerol and fatty acids; it's produced in the pancreas                                 | 25 | Oxygen debt               | The amount of oxygen needed to break down the lactic acid that has built up during anaerobic respiration                  |
| 12 | Bile                   | A liquid that neutralises stomach acid and emulsifies fats; it's produced in the liver and stored in the gall bladder       | 26 | Metabolism                | The rate of all the chemical reactions in a cell or the body  |
| 13 | Denatured              | When the active site of an enzyme changes shape, so the substrate can no longer fit   |    |                           |   |
| 14 | Coronary heart disease | When the coronary arteries are blocked by fatty deposits it reduces blood flow and the supply of oxygen to the heart muscle |    |                           |   |

# Year 11 – Cycle 3 – Chemistry Paper 1

|    |   |   |    |                                       |  |
|----|---|---|----|---------------------------------------|--|
| 1  | Element   | A substance in which all the atoms have the same atomic number  | 13 | Properties of graphite                | Weak forces between the layers, allowing them to slide over each other and has delocalised electrons, which allow it to conduct electricity        |
| 2  | Compound  | Two or more different elements chemically combined together   | 14 | Metallic bonding                      | Rows of positive metal ions, surrounded by delocalised electrons which move through the structure  |
| 3  | Isotope   | Atoms of the same element, with the same number of protons but different numbers of neutrons                                | 15 | Properties of alloys                  | Harder than pure metals as different sized atoms distort the layers of atoms preventing the layers from sliding                                    |
| 4  | Plum pudding model                                      | A ball of positive charge with negative electrons embedded in it  | 16 | Endothermic reaction                  | A reaction that takes in energy from the surroundings; temperature decreases   |
| 5  | Mendeleev   | Invented the first periodic table, which left gaps for undiscovered elements and was arranged according to atomic mass      | 17 | Exothermic reaction                   | A reaction that transfers energy to the surroundings, temperature increases  |
| 6  | Alkali metals' reaction with water                      | Alkali metal + Water --> Metal Hydroxide + Hydrogen   | 18 | Activation energy                     | The minimum amount of energy that particles must have to react   |
| 7  | Reactivity of Halogens                                  | Decreasing reactivity down the group; more reactive halogens will displace less reactive ones                               | 19 | Conservation of mass                  | Atoms can never be created or destroyed; the total mass of reactants always equals the total mass of products                                      |
| 8  | High melting points in ionic compounds                  | This is because a large amount of energy is needed to break the strong electrostatic attraction between the ions            | 20 | Uncertainty of a measuring instrument | Plus or minus ( $\pm$ ) half the smallest scale division; for a thermometer with a mark at every 1.0°C, the uncertainty is $\pm 0.5^\circ\text{C}$ |
| 9  | Ionic compounds conducting electricity                  | Ionic compounds conduct electricity when melted or dissolved in water, because the ions are free to move to carry a current | 21 | Avogadro constant (HT only)           | The value of the Avogadro constant is $6.02 \times 10^{23}$ per mole   |
| 10 | Low melting points in small molecule covalent compounds | This is because little energy is needed to overcome the weak intermolecular forces between the molecules                    | 22 | Concentration                         | The mass of a substance in a volume of solution, measured in $\text{g}/\text{dm}^3$  |
| 11 | Diamond   | Each carbon atom covalently bonded to four others; hard, very high melting point, does not conduct electricity              | 23 | Calculating concentration             | $\frac{\text{mass of solute (g)}}{\text{volume of solvent (dm}^3\text{)}}$   |
| 12 | Structure of graphite                                   | Each carbon atom covalently bonded to three others and forms layers of hexagonal rings                                      |    |                                       |  |

# Year 11 – Cycle 3 – Physics Paper 1

|    |  |  |
|----|--|--|
| 1  | Energy transfers                                 | Energy is stored in objects and transferred by radiation, electric current, heating, or when a force moves an object                                 |
| 2  | Renewable resource                               | An energy resource is one that is being replenished as it is used, e.g. wind power   |
| 3  | Non-renewable resource                           | An energy resource that cannot be replenished, so will run out, e.g. coal  |
| 4  | Movement of particles in solid                   | Vibrate about fixed positions  |
| 5  | Movement of particles in liquid                  | Move in random directions at low speeds.   |
| 6  | Movement of particles in gas                     | Free to move. Travel in random directions at high speeds.  |
| 7  | Internal energy                                  | Total energy stored by particles in the kinetic and potential energy stores  |
| 8  | Specific latent heat of fusion                   | Energy needed to change 1kg of a solid into a liquid, without changing its temperature   |
| 9  | Specific latent heat of vaporisation             | Energy needed to change 1kg of a liquid into a gas, without changing its temperature   |
| 10 | Effect of increasing temperature on gas pressure | Increases the average speed of the particles → More frequent collisions and larger force per collision → pressure increases as pressure = force/area |
| 11 | Current (Amps)                                   | The rate of flow of electric charge; measured using an ammeter connected in series   |
| 12 | Potential difference (Volts)                     | Energy transferred per coulomb of charge; measured using a voltmeter connected in parallel   |
| 13 | Ohms law   | Current through a resistor at a constant temperature is directly proportional to the potential difference across a resistor                          |

|    |                        |  |
|----|------------------------|--|
| 14 | LDR                    | The resistance of a light dependent resistor decreases if light intensity increases                    |
| 15 | Thermistor             | The resistance of a thermistor decreases if temperature increases                                      |
| 16 | Series circuit rules   | Potential difference is shared according to resistances; current is the same everywhere in the circuit |
| 17 | Parallel circuit rules | The potential difference across each component is the same; current is shared according to resistance  |
| 18 | National Grid          | A nationwide network of cables and transformers transferring electricity from power stations to homes  |
| 19 | Random decay           | We cannot predict which nuclei will decay next and when a specific nucleus will decay                  |
| 20 | Activity               | Number of unstable atoms that decay per second (measured in Becquerels)                                |
| 21 | Alpha particle         | Made of two protons and two neutrons, with a charge of +2  |
| 22 | Beta particle          | Made of one electron, with a charge of -1  |
| 23 | Irradiated             | When an object is exposed to ionising radiation but does not become radioactive                        |
| 24 | Contaminated           | When unwanted radioactive atoms get onto an object they release radiation and may cause harm           |

# Year 11 – Cycle 3 – Biology Paper 2

|    |                      |   |    |                    |  |
|----|----------------------|---|----|--------------------|--|
| 1  | Homeostasis          | The regulation of internal conditions of a cell or organism to maintain optimum conditions for function in response to internal and external changes.   | 13 | Selective breeding | Select organisms with desirable characteristics, breed them together, breed the best offspring together and repeat until all individuals have the desired characteristic |
| 2  | The endocrine system | Made up of glands which secrete chemicals called hormones directly into the bloodstream.  | 14 | Population         | All the organisms of one species living in a habitat   |
| 3  | Insulin              | When blood glucose concentration is too high, the pancreas releases insulin that causes glucose to move from the blood into the cells. In liver and muscle cells excess glucose is converted to glycogen for storage. | 15 | Community          | The populations of different species living in a habitat   |
| 4  | Type 1 diabetes      | A condition where the pancreas produces little or no insulin and is controlled by insulin injections  | 16 | Ecosystem          | The interaction of a community of living organisms with the non-living parts of the environment  |
| 5  | Type 2 diabetes      | A condition where body cells become resistant to insulin and is controlled through a carbohydrate- controlled diet and exercise   | 17 | Interdependence    | The dependence of species on other species for things such as food, shelter and seed dispersal   |
| 6  | Synapse              | A gap between two neurones. A chemical diffuses across a gap to cause a new electrical signal in the next neurone.  | 18 | Adaptation         | Feature or characteristics that organisms have to allow them to live in specific environmental conditions  |
| 7  | Reflex action        | Automatic and rapid responses which do not involve the conscious part of the brain.   | 19 | Distribution       | Where an organism is found, affected by environmental factors  |
| 8  | Gene                 | A section of DNA, which codes for the sequence of amino acids within a protein  | 20 | Quadrat            | A square frame with a known area, used to measure number of organisms in a specific location   |
| 9  | Mitosis              | Produces two genetically identical daughter cells for the growth and repair of tissues  | 21 | Percentage cover   | An estimate of the percentage area of a quadrat that is covered by a particular species of plant   |
| 10 | Meiosis              | Produces four genetically non-identical daughter cells with 23 chromosomes  | 22 | Biodiversity       | The variety of different species of organisms on Earth, or within an ecosystem   |
| 11 | Cloning              | Offspring that are genetically identical to the parent; produced in asexual reproduction  | 23 | Global warming     | The gradual increase in the Earth's mean temperature due to increasing levels of greenhouse gases which act like an insulating layer                                     |
| 12 | Natural selection    | Organisms have mutations which lead to variation in their characteristics.<br>Organisms compete for resources and the better adapted survive and reproduce<br>Genes are passed onto their offspring                   |    |                    |  |



# Year 11 – Cycle 3 – Chemistry Paper 2

|    |   |  |
|----|---|--|
| 1  | Activation energy                         | The minimum amount of energy that particles must have to react   |
| 2  | Factors which affect the rate of reaction | Temperature, concentration of reactants (or pressure if it is a gas), surface area and presence of a catalyst  |
| 3  | Catalyst                                  | Speeds up the rate of reaction by lowering the activation energy without being used up or changed  |
| 4  | Calculating mean rate of reaction         | Quantity of reactant used or product formed/time   |
| 5  | Closed system                             | When none of the reactions or products can escape and nothing else can get in  |
| 6  | Equilibrium                               | When the rate of forward reaction and backward reaction are equal in a reversible reaction. The amount of products and reactants will remain constant. |
| 7  | Le Chatelier's principle                  | If you change the conditions of a reversible reaction at equilibrium, the system will counteract the change  |
| 8  | Collision theory                          | Reactant particles must collide with the activation energy to form products  |
| 9  | Hydrocarbons                              | Molecules made up of hydrogen and carbon atoms only  |
| 10 | Alkanes                                   | Saturated hydrocarbons with only single bonds. $C_nH_{2n+2}$   |
| 11 | Complete combustion                       | Hydrocarbon + Oxygen $\rightarrow$ Carbon dioxide + Water  |
| 12 | Cracking                                  | Long chain hydrocarbons are split up into shorter alkanes and alkenes.   |

|    |                       |   |
|----|-----------------------|---|
| 13 | Thermal decomposition | Breaking down a substance using heat (forms more than 1 product)  |
| 14 | Alkenes               | Unsaturated hydrocarbons with a double bond. $C_nH_{2n}$  |
| 15 | Formulation           | A useful mixture made with a purpose – e.g. paint.  |
| 16 | Chromatography        | Used to separate substances in a mixture – e.g. pigments in ink.  |
| 17 | Greenhouse effect     | When greenhouse gases absorb long-wave radiation, keeping it in the earth's atmosphere.                                 |
| 18 | Greenhouse gases      | Carbon dioxide, methane and water vapour  |
| 19 | Carbon footprint      | The total amount of greenhouse gases produced over the lifecycle of a product   |
| 20 | Life cycle assessment | An assessment of the impact of every stage of a product's life, including raw materials, manufacture, use and disposal. |
| 21 | Sterilisation         | Kills microbes (e.g. using chlorine gas or UV light)  |
| 22 | Desalination          | Removing salt from seawater to make it potable – e.g. using reverse osmosis.  |
| 23 | Sedimentation tank    | Solids sink to produce sludge, leaving liquid effluent floating on top.   |

# Year 11 – Cycle 3 – Physics Paper 2

|    |                                 |  |
|----|---------------------------------|--|
| 1  | Limit of proportionality        | The limit of force you can apply to an object for the extension to increase proportionally   |
| 2  | Acceleration equation           | Acceleration = Change in velocity/Time taken   |
| 3  | Newton's first law              | A resultant force is needed to change the velocity of an object  |
| 4  | Newton's second law             | The acceleration of an object is proportional to the resultant force on it and inversely proportional to its mass. Resultant force = Mass x Acceleration |
| 5  | Newton's third law              | When two objects interact, the forces they exert on each other are equal and opposite.   |
| 6  | Conservation of momentum        | In a closed system, the total momentum before an event is the same as after the event  |
| 7  | Longitudinal waves              | A wave in which the vibrations are parallel to the direction of energy transfer, e.g. sound waves  |
| 8  | Transverse wave                 | A wave in which the vibrations at right angles to the direction of energy travel, e.g. water waves, electromagnetic waves                                |
| 9  | Radio waves                     | Used for communication, e.g. TV and FM radio   |
| 10 | Uses of microwaves              | Communication with satellites, as they can pass through the atmosphere, cooking  |
| 11 | Uses of Infrared (IR) radiation | Electrical heaters, cooking food, infrared cameras   |
| 12 | Fibre-optic cables              | Use pulses of visible light to transmit data over long distances   |
| 13 | X-rays                          | Pass easily through skin, but are absorbed by bone, so can be used to detect broken bones  |

|    |                                   |  |
|----|-----------------------------------|--|
| 14 | Magnetic material                 | A material such as iron, steel, cobalt or nickel which can become an induced magnet  |
| 15 | Permanent magnet                  | Magnets which produce their own magnetic field   |
| 16 | Induced magnets                   | Magnetic materials that turn into a magnet when they are put into a magnetic field   |
| 17 | Magnetic field lines              | Show the direction of the force on a north pole; closer lines = stronger force   |
| 18 | Irradiated                        | When an object is exposed to ionising radiation but does not become radioactive  |
| 19 | Contaminated                      | When unwanted radioactive atoms get onto an object they release radiation and may cause harm   |
| 20 | HT ONLY: Fleming's left hand rule | First finger points in the direction of the magnetic field, second finger in direction of current, and thumb to direction of the force |
| 21 | HT ONLY: Split-ring commutator    | A ring with gaps in it that swaps the electrical contacts of a device every half turn  |

# Year 11 – Cycle 3 – BTEC Sport – Unit Three (Applying the Principles of Personal Training)

## A: Goal setting

|   |                   |   |
|---|-------------------|---|
| 1 | Short-term goals  | A goal that is set over a short period of time, between one day and one month                       |
| 2 | Medium-term goals | A goal that should give progressive support towards achievement of long-term goals                  |
| 3 | Long-term goals   | Something you want to achieve in the future   |
| 4 | Aim               | Provides details of what you would like to achieve for the selected activity or sport               |
| 5 | Objectives        | How they intend to meet their aims using an appropriate component of fitness and method of training |
| 6 | PARQ              | Physical Activity Readiness Questionnaire   |

## B: Body systems

|   |                          |  |
|---|--------------------------|--|
| 1 | Cardiorespiratory system | Consists of the heart and blood vessels which work with the respiratory system                                     |
| 2 | Musculoskeletal system   | The muscular and skeletal systems working together including the bones, muscles, tendons and ligaments of the body |

## C: SMARTER Targets

|   |          |            |  |
|---|----------|------------|--|
| 1 | <b>S</b> | Specific   | Your goal must be clear  |
| 2 | <b>M</b> | Measurable | To know if your goal has been met successfully, it must be something that can be measured            |
| 3 | <b>A</b> | Achievable | Something that is possible for you to do   |
| 4 | <b>R</b> | Realistic  | Something that is possible given all the factors involved  |
| 5 | <b>T</b> | Time-bound | Goals must be assigned a timeframe for completion  |
| 6 | <b>E</b> | Exciting   | Your motivation to strive towards your goal is driven by the emotions you associate with those goals |
| 7 | <b>R</b> | Recorded   | Keeping a log of your goals so you are more likely to stay committed to the pursuit of your goals    |

## D: Principles of training

|   |                      |  |
|---|----------------------|--|
| 1 | Progressive overload | Making training steadily harder to improve fitness |
| 2 | Variation            | Training must be different to avoid boredom        |
| 3 | MHR                  | Maximum Heart Rate = 220 subtract age              |

# Year 11 – Cycle 3 – GCSE Sport Science – Component 1 & 2

| A: Socio-cultural influences |                    |   |
|------------------------------|--------------------|---|
| 1                            | Trends             | Based on data, the general direction something is moving in (up, down or the same)                                  |
| 2                            | Sportsmanship      | Qualities of fairness, following the rules, being gracious in defeat or victory                                     |
| 3                            | Gamesmanship       | Bending the rules of a sport without actually breaking them   |
| 4                            | Deviance           | Behaviour that goes against the moral values or laws of the sport   |
| B: Muscles                   |                    |   |
| 1                            | Antagonistic pairs | Muscles work together where one muscle contracts and another relaxes to create movement                             |
| 2                            | Hip flexors        | Their role is flexion of the leg at the hip   |
| 3                            | Gluteus maximus    | Their role is extension of the leg at the hip   |
| 4                            | Tibialis anterior  | Their role is dorsi-flexion at the ankle  |
| C: Muscle fibres             |                    |   |
| 1                            | Type 1             | Slow twitch muscle fibre suited to low aerobic work as they can be used for a long period of time without fatiguing |
| 2                            | Type IIa           | Fast twitch muscle fibre which can be improved through endurance training to increase their resistance to fatigue   |
| 3                            | Type IIx           | Fast twitch muscle fibre used in anaerobic work which can generate much greater force but fatigues quickly          |

| D: Vascular shunting  |                   |   |
|-----------------------|-------------------|---|
| 1                     | Vascular shunting | Blood that is diverted away from inactive areas to the working muscles  |
| 2                     | Vasoconstriction  | Blood vessels are constricted (squeezed) to make them smaller   |
| 3                     | Vasodilation      | Blood vessels are dilated to make them bigger   |
| E: Respiratory system |                   |   |
| 1                     | Lung volume       | The capacity of the lungs (how much air can they hold)  |
| 2                     | Tidal volume      | The amount of air inspired (inhaled) or expired (exhaled) in a normal breath                                      |
| 3                     | Vital capacity    | The maximum amount of air the lungs can expire (breath out) after the maximum amount they can inspire (breath in) |
| 4                     | Gas exchange      | Gases move from areas of high concentration to areas of low concentration   |

# Year 11 – Spanish - Key structures

| 1) Important verbs   |              |
|----------------------|--------------|
| To say               | decir        |
| To give              | dar          |
| To arrive            | llegar       |
| To start/begin       | empezar      |
| To realise           | darse cuenta |
| To enjoy             | disfrutar    |
| To get / catch       | coger        |
| To know              | saber        |
| To learn             | aprender     |
| To teach             | enseñar      |
| To need              | necesitar    |
| To return            | volver       |
| To continue / follow | seguir       |
| To finish            | terminar     |
| To last              | durar        |
| To think             | pensar       |
| 2) Sequencers        |              |
| Firstly              | primero      |
| Then                 | luego        |
| After                | después      |
| Later on             | más tarde    |
| Lastly               | por último   |
| 3) Time Expressions  |              |
| Day                  | el día       |
| Hour                 | la hora      |
| Month                | el mes       |
| Week                 | la semana    |
| Year                 | el año       |

| 4) Infinitive Structures |                      |
|--------------------------|----------------------|
| I have just              | acabo de + inf       |
| It is necessary          | hay que + inf        |
| We have to               | tenemos que + inf    |
| To start                 | empezar a + inf      |
| We should                | deberíamos + inf     |
| To learn to              | aprender a + inf     |
| Before                   | antes de + inf       |
| After                    | después de + inf     |
| I hope                   | espero + inf         |
| I want                   | quiero + inf         |
| To stop                  | dejar de + inf       |
| To be able to            | poder + inf          |
| We must                  | se debe + inf        |
| We can                   | se puede + inf       |
| I feel like + verb       | tengo ganas de + inf |
| I fancy + verb           | me apetece           |

| 5) Question Words |              |
|-------------------|--------------|
| What              | ¿qué?        |
| When              | ¿cuándo?     |
| How               | ¿cómo?       |
| Which             | ¿cuál?       |
| Where             | ¿dónde?      |
| Who               | ¿quién?      |
| Why               | ¿por qué?    |
| How much          | ¿cuánto?     |
| How many          | ¿cuántos/as? |
| At what time      | ¿a qué hora? |

| 6) Common verbs (present tense) |              |
|---------------------------------|--------------|
| <b>To do</b>                    | <b>hacer</b> |
| I do                            | hago         |
| They do                         | hacen        |
| You do                          | haces        |
| <b>To have</b>                  | <b>tener</b> |
| I have                          | tengo        |
| He /she / it has                | tiene        |
| They have                       | tienen       |
| <b>To be</b>                    | <b>ser</b>   |
| I am                            | soy          |
| He/she / it is                  | es           |
| They are                        | son          |
| <b>To be</b>                    | <b>estar</b> |
| I am                            | estoy        |
| He / she / it is                | está         |
| They are                        | están        |
| <b>To go</b>                    | <b>ir</b>    |
| I go / I'm going                | voy          |
| You go                          | vas          |
| They go                         | van          |

| 7) Common verbs (past tense)    |         |
|---------------------------------|---------|
| I went                          | fui     |
| You went                        | fuiste  |
| He/she/it <b>went &amp; was</b> | fue     |
| He / she / it used to be        | era     |
| There was / there were          | había   |
| He / she / it had               | tenía   |
| I saw                           | vi      |
| I did                           | hice    |
| You did                         | hiciste |

| 8) Small but important words |                         |
|------------------------------|-------------------------|
| More and more                | cada vez más            |
| Less and less                | cada vez menos          |
| Unless                       | a no ser que            |
| Even                         | incluso                 |
| Instead of                   | en lugar de / en vez de |
| Despite                      | a pesar de              |
| Nor                          | tampoco                 |
| Still/ yet                   | todavía                 |
| Both                         | ambos                   |
| Already                      | ya                      |
| Without                      | sin                     |
| Almost                       | casi                    |
| Nobody                       | nadie                   |
| Few / little                 | poco                    |
| The same                     | el mismo                |
| Any                          | cualquier/a             |
| With                         | con                     |
| Less                         | menos                   |
| More                         | más                     |
| Apart from                   | aparte de               |
| Every                        | cada                    |
| Neither... nor               | ni... ni                |
| In fact                      | de hecho                |
| Quite                        | bastante                |
| No-longer                    | ya no                   |
| No / not any                 | ningún                  |
| While                        | mientras (que)          |

# Year 11 – Spanish – Cycle 3

| A Theme 1 – Relationships / Technology |                                  |                                   |
|--|----------------------------------|-----------------------------------|
| 1                                      | I get on well with               | me llevo bien con                 |
| 2                                      | My twin makes me laugh           | mi gemelo me hace reír            |
| 3                                      | My best friend supports me       | mi mejor amigo me apoya           |
| 4                                      | We rarely argue                  | rara vez discutimos               |
| 5                                      | He never criticises me           | él nunca me critica               |
| 6                                      | I want to marry                  | quiero casarme                    |
| 7                                      | I feel like falling in love      | tengo ganas de enamorarme         |
| 8                                      | I use it to upload videos        | lo/la uso para subir videos       |
| 9                                      | I use them to post photos        | los/las uso para colgar fotos     |
| 10                                     | Young people are hooked          | los jóvenes están enganchados     |
| 11                                     | It is easy to be in contact      | es fácil estar en contacto        |
| 12                                     | I usually spend time on my phone | suelo pasar el tiempo en mi móvil |

| B Theme 2 – Where I Live |                                    |                                       |
|--------------------------|------------------------------------|---------------------------------------|
| 1                        | I live in a flat in the centre     | vivo en un piso en el centro          |
| 2                        | I used to live in the outskirts    | vivía en las afueras                  |
| 3                        | In my neighbourhood there is/are   | en mi barrio hay                      |
| 4                        | In my city there was               | en mi ciudad había                    |
| 5                        | We need a sports centre            | hace falta un polideportivo           |
| 6                        | We needed a department store       | hacía falta un gran almacén           |
| 7                        | It is necessary to help others     | hay que ayudar a los demás            |
| 8                        | We have to protect the environment | tenemos que proteger el medioambiente |

| 9   | I always go to France                   | siempre voy a Francia                |
|---|---|--------------------------------------|
| 10  | Before I used to go to Spain            | antes iba a España                   |
| 11  | I stay in a bed and breakfast           | me alojo en una pensión              |
| 12  | I used to stay in a hostel              | me alojaba en un albergue            |
| 13  | I am going to travel to America         | voy a viajar a Los Estados Unidos    |
| 14  | I want to get to know Morocco           | quiero conocer Marruecos             |
| C Theme 3 – Mis estudios y planes futuros |   |                                      |
| 1   | There is support from teachers          | hay apoyo de los profesores          |
| 2   | There was peer pressure                 | había presión de grupo               |
| 3   | There is no school bullying             | no hay acoso escolar                 |
| 4   | There was no fear to fail               | no había miedo a suspender           |
| 5   | It is necessary to revise for the tests | hay que repasar para las pruebas     |
| 6   | We must bring the equipment             | se debe traer los materiales         |
| 7   | We have to be on time                   | tenemos que ser puntuales            |
| 8   | We cannot wear make up                  | no se puede llevar maquillaje        |
| 9   | I want to pass the exams                | quiero aprobar los exámenes          |
| 10  | I am not going to fail the exams        | no voy a suspender los exámenes      |
| 11  | I would like to gain experience         | me gustaría adquirir experiencia     |
| 12  | I fancy getting a job                   | Me apetece conseguir un trabajo      |
| 13  | I feel like taking a gap year           | tengo ganas de tomar un año sabático |
| 14  | I hope to start to earn money           | espero empezar a ganar dinero        |