DIDSBURY
HIGH SCHOOL

Curriculum Knowledge and Skills

Subject Reference Guide

Year 10

2023-2024

Y10 GCSE Art

Knowledge	Skills
Students will develop their knowledge of: • researching effectively – the ability to explore the work of a range of artists, designers and craftspeople and draw inspiration from techniques, processes and ideas • exploring and communicating ideas using the work of others to develop and extend thinking, and to help themselves make informed decisions with their own work. Having the ability to discuss and compare the work of others • a range of processes, and how to use them within their work; making informed decisions about when to apply appropriate techniques within their work, and developing this • how ideas, feelings and meanings can be conveyed and interpreted in images, artefacts and products • how images, artefacts and products relate to social, historical, vocational and cultural contexts • a variety of approaches, methods and intentions of contemporary and historical artists, craftspeople and designers from different cultures and their contribution to continuity and change in society.	Students will develop their skills in: • the ability to record experiences and ideas in appropriate forms when undertaking research and gathering, selecting and organising visual, and other relevant information • exploring relevant resources – analysing, discussing and evaluating images, objects and products, making and recording independent judgements in visual and other forms • generating and exploring potential lines of enquiry using appropriate new media practices and techniques • applying knowledge and understanding in making images, artefacts and products; reviewing and modifying work and planning and developing ideas in the light of their own and others' evaluations • organising, selecting and communicating ideas, solutions and responses, and presenting them in a range of appropriate visual, tactile and/or sensory forms including the use of new technologies • working both as individuals and in collaboration with others in a range of situations • discussing the work of relevant artists • using correct Art vocabulary • annotating and evaluating their own work in relation to their intentions

Y10 Beliefs and Values

Knowledge	Skills
Students will develop their knowledge of: • ethics • social justice • philosophy and what it means to be human • peace and pacifism • prejudice and discrimination • RSE: What a healthy relationship looks like and how to make choices that are safe and limit risk. The law surrounding consent and Harmful sexual behaviours. • careers and future choices: pathways to explore different careers and financial awareness.	Students will develop their skills in: • maturity, compassion and tolerance towards real world issues • ethical, philosophical and religious thinking and how it influences people's lives • having an awareness of differing viewpoints • appraising and appreciating a variety of beliefs and worldviews • deep thinking skills in connection to ultimate questions • listening to others and respectfully disagreeing • using evidence from various sources, including religious scripture, to express and evaluate ideas • analysing different ideas and viewpoints and being willing to justify your point of view • debating • empathy • working to deadlines

Y10 GCSE Computing

Knowledge	Skills
Students will develop their knowledge of: • string formatting, arrays, dictionaries and reading and writing to files in Python • building robust programs that solve a range of problems • testing programs efficiently • being able to convert from Binary, to Denary, and Hexadecimal • compression and encryption methods • primary and secondary storage devices • Von Neumann's architecture • a CPU's key components and how they interact with other pieces of hardware • different network types and the features of each, as well as common networks standards • operating systems, utility software and protocols • ethical, legal and cultural and environmental impacts • cloud computing and software as a service • embedded systems, IP and MAC addressing	Students will develop their skills in: • staying safe online • using different operations and applying Boolean logic • using Boolean logic to create accurate truth tables and logical statements • using logical reasoning to predict outcomes • being able to declare and assign variables both locally and globally • being able to create functions • being able to efficiently use arithmetic operators, 'if statements' and 'loops' appropriate to the solution • being able to create Arrays, sub programs, and use validation • being able to find and correct errors in programs (debugging) • being able to calculate file sizes for file transfers • testing programs efficiently and identifying areas for focus • using high level algorithms • building and understanding common algorithms including program code • compiling trace tables • improving performance of the CPU through a range of possible options

Y10 GCSE 3D Design

Knowledge	Skills
Students will develop their knowledge of: • researching effectively – the ability to explore the work of a range of designers, architects and sculptors and draw inspiration from techniques, processes and ideas • exploring and communicating ideas using the work of others to develop and extend thinking, and to help themselves make informed decisions with their own work. • how to discuss and compare the work of others • a range of processes, and how to use them within their work; making informed decisions about when to apply appropriate techniques within their work, and developing this • how ideas, feelings and meanings can be conveyed and interpreted in images and products • how images and products relate to social, historical, vocational and cultural contexts • a variety of approaches, methods and intentions of contemporary and historical designers, architects and sculptors from different cultures and their contribution to continuity and change in society.	Students will develop their skills in: • recording experiences and ideas when undertaking research and gathering, selecting and organising visual, and other relevant information • exploring relevant resources – analysing, discussing and evaluating images, objects, products and buildings, making and recording independent judgements in visual and other forms • generating and exploring potential lines of enquiry using appropriate communication techniques and processes. • applying knowledge and understanding in designing and making images, products, and prototypes; reviewing and modifying work and planning and developing ideas in the light of their own and others' evaluations • organising, selecting and communicating ideas, solutions and responses, and presenting them in a range of visual, tactile and/or sensory forms including the use of new technologies • working both as individuals and in collaboration with others in a range of situations • discussing the work of relevant designers, architects and movements • annotating and evaluating their own work in relation to their intentions

Y10 GCSE Design and Technology

Knowledge	Skills
Students will develop their knowledge of: Core specialist and technical principles including scientific knowledge and designing and making principles. Specifically: • categorisation of materials, their origins and working properties. • stock forms types and sizes. • surface treatments and finishes. • new and emerging technologies and materials. • energy generation and storage. • basic systems and control. • mechanical devices – forces, stresses, motion and mechanisms. • social, moral, environmental and ecological implications in design. • manufacturing techniques, processes and scales of production. • investigating and drawing inspiration from the work of past and current designers and companies. • tools and equipment. • designing for specific users in response to contexts and problems. • ergonomics and anthropometrics when exploring design responses. • mathematical principles; fractions, percentages and ratios, interpreting data, plotting and drawing graphs, surface area and scale and mathematical drawing.	Students will develop their skills in: • design communication. • literacy, numeracy and ICT including specific design software • research and analysis. • discussing and comparing the work of others. • drawing from technical language when annotating. • measuring, marking out and cutting. • modelling and prototyping. • using materials, tools and equipment independently and with precision • specialist techniques and processes which incorporate the use of computer aided design and manufacture - CAD/CAM. • testing, refining and evaluating ideas/outcomes.

Y10 GCSE Drama

Knowledge	Skills
Students will develop their knowledge of: • the process of research and the ability to delve into a broad range of stimuli to draw inspiration for their own work • Exploring the creative works of others and implementing and adapting their diverse style and techniques into their own work • how to identify and understand the social, cultural and historic context of play texts • the characteristics of dramatic work including genre, structure, character, form, style, and language • the methods, strategies and techniques used by a range of theatre practitioners • recognising and understanding the roles and responsibilities of performer, designer and director. • the roles and processes undertaken in professional theatre to produce a high quality production • how to demonstrate performance discipline and use safe working practices • the performance practices used in twenty-first century theatre-making • how to structure a coherent argument in reflection to a playwright and their creative decisions	Students will develop their skills in: • creativity to produce effective, independent and reflective performers. • the ability to analyse and evaluate their own work and the work of others. • the ability to develop and adapt a play from the page to the stage. • communicating with clarity to work successfully as part of a team. • producing a piece of drama that is original, creative and impactful from a stimulus. • the ability to refine and develop their own work through a rehearsal process. • the control of the physical and vocal skills. • analysing the performance of an actor in a performance considering their use of physical and vocal skills and how this represents the character's intentions • analysing the design and technical elements of a performance considering the semiotics of the choices made. • evaluating the performance of an actor in a performance, considering the impact that the performance has upon the audience. • evaluating the design and technical elements of a performance considering the impact that these decisions have upon the audience.

Y10 GCSE English Language

Knowledge	Skills
Students will develop their knowledge of: **Reading** • a range of texts to help students articulate their ideas in a sophisticated way • the way in which language, structure, form and context are used to enable a writer to express their ideas • the significant impact that literature has on the world **Writing** • the methods used to write with engagement and control • the ways in which specific audiences can be targeted through linguistic devices. **Speaking and Listening** • the various ways in which talk and discussion can be used to articulate meaning	Students will develop their skills in: **Reading** • articulating informed interpretations of meanings supported by well-chosen textual references • analysing how writers use language and structure to convey ideas, achieve effects and influence readers using relevant subject terminology • comparing ideas, attitudes, methods and contexts in order to evaluate effectiveness • relating different texts to their relevant social, historical and literary context across the 19th, 20th and 21st century • making links between texts • accessing unseen literature independently • evaluating texts critically and supporting this with appropriate textual references **Writing** • communicate clearly, effectively and imaginatively • selecting and adapting tone, style and register for different forms, purposes and audiences • organising information and ideas, using structural and grammatical features to support coherence and cohesion of texts • selecting appropriate words and phrases from a rich and wide vocabulary • demonstrating control of spelling, punctuation and grammar • utilising a variety of sentence structures with control for both meaning and effect

Y10 GCSE English Literature

Knowledge	Skills
Students will develop their knowledge of: **Reading** • a range of seen and unseen texts from across the 19th, 20th and 21st century to help students articulate their ideas in a sophisticated way • the way in which language, structure, form and context are used to enable a writer to express their idea • the significant impact that literature has on the world • different genres of writing and their influences **Writing** • the methods used to write with engagement and control	Students will develop their skills in: **Reading** • articulating informed interpretations of meanings supported by well-chosen textual reference • analysing how writers use methods to convey ideas, achieve effects and influence the reader or audience, including language, structure, form and dramatic devices • comparing ideas, attitudes, methods and contexts in order to evaluate effectiveness • making specific links between texts and their relevant social, historical and literary context across the 19th, 20th and 21st century • comparing unseen texts • exploring the writer's purpose, ideas and perspectives **Writing** • demonstrating control of spelling, punctuation and grammar when articulating ideas

Y10 GCSE Food Preparation and Nutrition

Knowledge	Skills
Students will develop their knowledge of: • food provenance • major food commodities groups • how a commodity is grown, reared and processed • food preparation, cooking and presentation • nutritional values (sources, functions, deficiencies, excess, daily requirements) • dietary considerations for special groups • food science • food hygiene, health and safety (QA / QC) • sensory properties of food • the use of specialist equipment • specialist language and culinary terms • food storage and packaging	Students will develop their skills in: • accurate food preparation with the emphasis on high level skills (20 in total) • selecting and planning practical tasks in detail • understanding the physical function of food commodities and applying the knowledge • evaluating practical and scientific tasks in detail • conducting a food science experiment and writing a hypothesis • researching a topic independently

Y10 GCSE Geography

Knowledge	Skills
Students will develop their knowledge of: <u>The Living World</u> • biotic and abiotic components of global ecosystems • characteristics of tropical rainforests and hot deserts • economic and environmental impacts of deforestation • development of hot desert environments • management of tropical rainforests and hot deserts <u>Urban Issues and Challenges</u> • urbanisation and urban growth • opportunities and challenges of urban growth in Lagos and Manchester • urban sustainability <u>Physical Landscapes in the UK: Rivers</u> • UK's diverse landscapes • fluvial processes and landforms • river flooding and management <u>The Challenge of Natural Hazards</u> • physical processes leading to earthquakes and volcanic eruptions • how the effects of, and responses to, a tectonic hazard vary between contrasting levels of wealth • management of tectonic hazards • global atmospheric circulation system and its impacts on weather and climate • weather hazards including tropical storms and heatwaves • causes of climate change and strategies to manage climate change <u>Physical Landscapes in the UK: Coasts</u> • UK's diverse landscapes • coastal processes and landforms • coastal erosion and management	Students will develop their skills in: • critical thinking and problem-solving • geographical fieldwork • thinking synoptically about a range of issues • cartographic skills • using and interpreting Atlas maps • using and interpreting Ordnance Survey maps • using and interpreting maps in association with photographs • graphical skills • numerical skills • statistical skills

Y10 BTEC Health and Social Care

Knowledge	Skills
Students will develop their knowledge of: • human growth and development across different life stages • different physical, social and cultural and economic factors that can affect people's growth and development • a range of expected and unexpected life events and how people deal with them • different types of health and social care services in the local area • potential barriers people may face in accessing health and social care services	Students will develop their skills in: • empathy • debate and discussion • research • working both independently and as part of a team • using case studies to write extended responses • time management to work effectively towards a deadline

Y10 GCSE History

Knowledge	Skills
Students will develop their knowledge of: **Germany, 1890–1945: Democracy and dictatorship** • Germany and the growth of democracy • Germany and the Depression • the experiences of Germans under the Nazis **Elizabethan England, c1568–1603** • Elizabeth's court and Parliament • life in Elizabethan times • troubles at home and abroad • the historic environment of Elizabethan England **Conflict and Tension: The Inter-War Years 1918-1939** • peacemaking • the League of Nations and international peace • the origins and outbreak of the Second World War	Students will develop their skills in: • explaining and analysing historical events and periods studied using second order historical concepts including continuity, change, cause, consequence, significance, similarity and difference • analysing, evaluating and using sources (contemporary to the period) to make substantiated judgements, in the context of historical events studied • analysing, evaluating and making substantiated judgements about interpretations (including how and why interpretations may differ) in the context of historical events studied • developing as independent learners and as critical and reflective thinkers • developing the ability to ask relevant questions about the past, to investigate issues critically and to make valid historical claims by using a range of sources in their historical context • developing an awareness of why people, events and developments have been accorded historical significance and how and why different interpretations have been constructed about them • organising and communicating their historical knowledge and understanding in different ways and reach substantiated conclusions

Year 10 Languages

Knowledge	Skills
Students will develop their knowledge of: • the fact that nouns have a gender and how this affects how adjectives work • the difference between the different words used to say 'a/the/some' • different verb forms for regular verbs in the present tense • different verb forms for irregular verbs in the present tense • verbs in the past, present and future tenses • using time markers to express different time frames • a broad range of vocabulary, including vocabulary from the GCSE specification, to express ideas in creative ways • non-literal translation and how this affects translation into English and the target language • how to manipulate grammar to express more complex ideas.	Students will develop their skills in: • initiating, developing and sustaining a conversation on a range of topics, with increasing spontaneity in answering questions • using pronunciation and intonation which are accurate and would be understood by a native speaker • giving and developing opinions on a range of topics, using a range of structures • producing sentences of fluent, accurate writing to narrate, inform and express points of view • using language creatively to express ideas about different issues • deducing meaning and demonstrating understanding of overall message and detail in longer passages of target language text • listening to and understanding speech of varying speed and length to understand both gist and detail • translating texts containing more complex structures and less common vocabulary into both the target language and English to convey meaning accurately • independently using a dictionary and / or vocab book as reference for support and to deepen vocabulary • understanding and appreciating a range of literary texts such as poems, stories and songs, which stimulate ideas and opinions • reviewing and redrafting work and correcting errors regularly (study skills)

Y10 GCSE Latin

Knowledge	Skills
Students will develop their knowledge of: • accidence and syntax • vocabulary from the Latin-English Defined Vocabulary List (DVL). • derivation links between Latin and English. • Roman Civilisation: family life	Students will develop their skills in: • accurate translation of a passage of Latin prose into English. • comprehension of a passage of Latin and the ability to answer questions in English about it. • translation of short sentences from English into Latin using the prescribed Defined Vocabulary List (DVL). • recognition, analysis and explanation of syntax and accidence within a short passage of Latin. • analysis of ancient source material. • evaluation of evidence from ancient source material. • construction and development of a sustained line of reasoning. • construction of coherent and logical argument supported by relevant evidence.

Y10 GCSE Maths

Knowledge	Skills
Students will develop their knowledge in order to: • accurately recall facts, terminology and definitions • use and interpret notation correctly • accurately carry out routine procedures or set tasks requiring multi-step solutions • make deductions, inferences and draw conclusions from mathematical information • construct chains of reasoning to achieve a given result • translate problems in mathematical or non-mathematical contexts into a process or a series of mathematical processes • make and use connections between different parts of mathematics	Students will develop their skills in: • interpreting and communicating information accurately • presenting arguments and proofs • assessing the validity of an argument and critically evaluating a given way of presenting information • interpreting results in the context of a given problem • evaluating methods used and results obtained • evaluating solutions to identify how they may have been affected by assumptions made

Y10 BTEC Media

Knowledge	Skills
Students will develop their knowledge of: • media language and media specific terminology applicable to both general areas of media as well as the media industries studied as part of their course • media organisations and the structures within the media industry • how audiences are defined and how various media texts target different audiences • various genres in Media and how they can be defined by generic conventions • research into relevant media texts using different research methods and techniques	Students will develop their skills in: • applying media language and media specific terminology into their writing of controlled assessments and examined assessments • responding to a variety of media texts in an analytical way • using various digital media packages in order to edit their own media practical productions • working to deadlines

Y10 GCSE Media

Knowledge	Skills
Students will develop their knowledge of: • media language and media specific terminology applicable to both general areas of media as well as the media industries studied as part of their course • media organisations and the structures within the media industry • how audiences are defined and how various media texts target different audiences • various genres in media and how they can be defined by generic conventions • a range of media products	Students will develop their skills in: • applying media language and media specific terminology into their writing of controlled assessments and exams • responding to a variety of media texts in an analytical way • various digital media packages in order to edit their own practical media productions • researching into relevant media texts (set texts and unseen) using different research methods and techniques • using a range of digital equipment

Y10 GCSE Music

Knowledge	Skills
Students will develop their knowledge of: **The Elements of Music** • melody • structure • texture • harmony • tempo, metre and rhythm • tonality • instrumentation • dynamics and articulation **Musical contexts** • the effect of purpose and intention on how music is created, developed and performed in different historical, social and cultural contexts • the effect of audience, time and on how music is created, developed and performed in different historical, social and cultural contexts **Musical language** • reading and writing of staff notation, rhythmic notation in simple time, key signatures to four sharps and four flats • major and minor chords and associated chord symbols	Students will develop their skills in: **<u>Performing Music</u>** • interpret and communicate musical ideas with technical control and expression. • playing or singing music, improvising, or realising music using music technology • perform music with control, making expressive use of phrasing and dynamics appropriate to the style and mood of the music **<u>Composing Music</u>** • create and develop musical ideas with technical control and coherence; freely and responding to a brief • compose music that develops musical ideas, uses conventions and explores the potential of musical structures and resources **<u>Appraisal</u>** • analyse and evaluate music in aural and/or written form • analyse unfamiliar music • make critical judgements about music • formulate critical judgements

Y10 GCSE PE

Knowledge	Skills
Students will develop their knowledge of: • body systems and the impact of exercise • aerobic and anaerobic exercise • short and long-term effects of exercise on the body systems • biomechanics • components of fitness • principles and methods of training • injury prevention • effective use of warm-ups and cool downs.	Students will develop their skills in: • demonstrating their ability to select and apply appropriate skills, techniques and ideas in a variety of activities • being able to offer a wide range of solutions to challenges set and make effective decisions about their performance • analysing and evaluating their own performance, identifying strengths and weaknesses • understanding the impact of skills, tactics or composition and fitness on the quality and effectiveness of performance • applying skills, strategies and tactics in a performance environment effectively • answering short and extended answer questions on all topics covered.

Y10 PE (Core)

Knowledge	Skills
Students will develop their knowledge of: • advanced strategies, tactics and skills used in sports and physical activities • rules and regulations for a range of sports • the impact of physical activity on health and wellbeing • how to perform safely and effectively to enable transition from school sport to sport post 16 • the benefits of leading a healthy active lifestyle through exercise and physical activity outside of school.	Students will develop their skills in: • racquet sports, striking and fielding, invasion games, athletics, dance, health related exercise, climbing, trampolining and outdoor and adventurous activities (OAA) • team-work • using advanced techniques, strategies and tactics in a range of sports in competitive game situations • being able to make the correct decisions in competitive and performance situations to allow them to beat an opponent regularly and apply knowledge to different contexts and activities • analysing performance of themselves and others during performance to alter the outcome of a game.

Y10 GCSE Photography

Knowledge	Skills
Students will develop their knowledge of: • researching effectively – the ability to explore the work of a range of photographers, artists and film makers and draw inspiration from techniques, processes and ideas • exploring and communicating ideas using the work of others to develop and extend thinking, and to help themselves make informed decisions with their own work. Having the ability to discuss and compare the work of others • a range of processes, and how to use them within their work; making informed decisions about when to apply appropriate techniques within their work, and developing this • how ideas, feelings and meanings can be conveyed and interpreted in images, artefacts and products • how images, artefacts and products relate to social, historical, vocational and cultural contexts • a variety of approaches, methods and intentions of contemporary and historical artists from different cultures and their contribution to continuity and change in society.	Students will develop their skills in: • the ability to record experiences and ideas in appropriate forms when undertaking research and gathering, selecting and organising visual, and other relevant information • exploring relevant resources – analysing, discussing and evaluating images, objects and products, making and recording independent judgements in visual and other forms • generating and exploring potential lines of enquiry using appropriate techniques and processes. • applying knowledge and understanding; reviewing and modifying work and planning and developing ideas in the light of their own and others' evaluations • organising, selecting and communicating ideas, solutions and responses, and presenting them in a range of appropriate visual, tactile and/or sensory forms including the use of new technologies • working both as individuals and in collaboration with others in a range of situations • discussing the work of relevant photographers, artists and film makers. • using correct Art vocabulary • annotating and evaluating their own work in relation to their intentions

Y10 GCSE Religious Studies

Knowledge	Skills
Students will develop their knowledge of: • Christianity as one of the diverse religious traditions and beliefs in Great Britain today. It is the main religious tradition in Great Britain. • Islam as one of the diverse religious traditions and beliefs in Great Britain today. • the beliefs, teachings and practices of Christianity and their basis in Christian sources of wisdom and authority. • the beliefs, teachings and practices of Islam and their basis in Islamic sources of wisdom and authority. • the influence of the beliefs, teachings and practices, on individuals, communities and societies. • a range of different Christian perspectives and be able to apply these in their answers including Catholic, Orthodox and Protestant. • Islamic beliefs and teachings and how they are understood and expressed. • religious teachings, and religious, philosophical and ethical arguments - and their impact and influence in the modern world. • contrasting perspectives in contemporary British society on all of these issues.	Students will develop their skills in: • connecting religious ideas and practices • articulating their own personal responses to ultimate questions • taking a proactive part in decision making activities with your peers • respecting the views of others • explaining the importance of key religious beliefs and philosophical/ ethical beliefs. • evaluating different opinions and drawing out different arguments. • interpreting scripture and understand how this influences religious believers. • organising knowledge to make justified conclusions on a range of issues.

Y10 GCSE Science – Biology

***Content in bold is for students taking the separate sciences (Triple science)**

Knowledge	Skills
Students will develop their knowledge of: • cells, subcellular structures and how microscopy is used to examine these • why enzymes are important proteins in biology • metabolic processes such as respiration • how green plants and algae trap light from the Sun in photosynthesis • how cells transport many substances across their membranes by diffusion, osmosis and active transport • stem cells which are found in both plants and animals and how they can divide, differentiate and become specialised to form tissues, organs and organ systems • gaseous exchange surfaces and transport systems in multicellular organisms • diseases affecting the health of populations of both humans and plants, and ways to prevent and combat disease • how our bodies defend themselves against disease and how immunity is achieved • the impact of non-communicable diseases on the health of the population • **production and use of monoclonal antibodies in medicine**	Students will develop their skills in: • hypothesising and testing theories and concepts • assessing hazards and taking precautions to minimise the associated risks • using appropriate apparatus and techniques • observation, enquiry and problem solving • analysing methodology, evidence and conclusions • interpreting and evaluating • communication, mathematics and the use of technology in scientific contexts

Y10 GCSE Science – Chemistry

***Content in bold is for students taking the separate sciences (Triple science)**

Knowledge	Skills
Students will develop their knowledge of: • the particle model and its explanation of different states of matter • how elements are substances that are made up of only one type of atom and atoms of different elements can combine to make compounds • models of atomic structure • **how to estimate the size and scale of atoms and nanoparticles and describe the properties and uses of nanoparticles** • useful materials that we use today that are mixtures • methods of separating mixtures including filtration, crystallisation, distillation and chromatographic techniques • what happens when chemical reactions occur in terms of losing, gaining or sharing of electrons • the physical properties of elements and compounds and how the nature of their bonding is a factor in their properties • how to use chemical equations to represent the overall change in a chemical reaction • conservation of mass • how chemical reactions are accompanied by an energy change and how a simple model involving the breaking and making of chemical bonds can be used to interpret and calculate the energy change • examples of reactions including reduction, oxidation and neutralisation reactions • electrolysis • **models of how substances react and the different types of chemical reactions that can occur enable us to predict the likelihood and outcome of a chemical reaction** • **the current Periodic Table and the way it reveals trends and patterns in the behaviour of the elements**	Students will develop their skills in: • hypothesising and testing theories and concepts • assessing hazards and taking precautions to minimise the associated risks • using appropriate apparatus and techniques • observation, enquiry and problem solving • analysing methodology, evidence and conclusions • interpreting and evaluating • communication, mathematics and the use of technology in scientific contexts

Y10 GCSE Science – Physics

***Content in bold is for students taking the separate sciences (Triple science)**

Knowledge	Skills
Students will develop their knowledge of: • energy and how it is stored and transformed • the nature and application of thermodynamics • the importance of the conservation of energy • efficiency of electrical devices • global energy resources and the impact they have on the environment • common circuit symbols used to make circuits • electrical current as the flow of electrical charge • the effects of resistance on current • the relationship between current, potential difference and resistance • common I-V relationships for electrical components • sensing components in electrical devices • domestic electricity use and keeping safe • the efficient transport of electricity • **static electric charge and insulators** • **the nature and form of electric fields** • the differences in density between different states of matter • changes of state as a physical change • internal energy and how it can be altered • the concept of pressure • **the relationship between pressure, temperature, and volume for a gas** • how elements are substances that are made up of only one type of atom and atoms of different elements can combine to make compounds • models of atomic structure • types of ionising nuclear radiation and their effects on the nucleus. • the random nature of radioactive decay. • the common uses and risks associated with the use of radiation. • **nuclear fusion and fission**	Students will develop their skills in: • hypothesising and testing theories and concepts • assessing hazards and taking precautions to minimise the associated risks. • using appropriate apparatus and techniques • observation, enquiry, and problem solving. • analysing methodology, evidence, and conclusions • interpreting and evaluating • communication, mathematics, and the use of technology in scientific contexts

Y10 BTEC Sports Studies

Knowledge	Skills
Students will develop their knowledge of: • the contribution of physical activity to the healthy functioning of the body and mind as part of a healthy active lifestyle • both physical and skill related components of fitness • the different training methods for developing performance • the application of the correct training methods to a variety of sports • how to plan a successful training programme to improve sporting performance.	Students will develop their skills in: • undertaking and administrating fitness tests • designing, implementing and reviewing a personal fitness training programme • investigating and applying fitness testing to determine fitness levels, showing awareness of normative values for their own age groups • being able to review individual performance, using ICT to develop feedback methods.