CURRICULUM
KNOWLEDGE AND SKILLS
SUBJECT REFERENCE GUIDE
YEAR 9

ART AND DESIGN

Students will develop their **KNOWLEDGE** of:

- how to explore different artists and make connections with them.
- how to be successful in their work and how to use success criteria.
- how to use the formal elements and understand what they are.
- how to interpret and read Art work through the understanding of Visual Literacy.
- how to collect resources to help in their own work.
- how to use Artist concepts to help develop their own ideas.
- Explore themes such as Storytelling, Street Art and Architecture and artforms associated with these themes.

Students will develop their **SKILLS** in:

- **drawing** through means such as observational studies, photography and documenting ideas.
- using and experimenting with different **media** such as pencil, pens, different types of paint, collage, clay inks.
- learning new processes such as 3D design, ceramics, printmaking and mixed media.
- developing a **personal response** through creativity within their work (developing relevant ideas, **CPR**) including problem solving.
- **discussing** and **explaining ideas** relevant to their work using art terminology.
- **discussing** and comparing the work of others (artists and such like).
- **annotating** and **evaluating** using relevant language and keywords.

COMPUTING

Students will develop their **KNOWLEDGE** of:

- The effects on a person due to social media
- Digital computers using binary to represent all data including text, images and sound
- Why we compress files
- More advanced Python skills
- Computational thinking methods
- Logic gates
- Simple sorting and searching algorithms
- How computers learn from data
- Why infographics are used
- Different ways data can be displayed

Students will develop their **SKILLS** in:

- using logical reasoning to predict outcomes.
- breaking down a problem to create a suitable solution using a high-level programming language.
- using arithmetic operators, 'if statements' and 'loops' to create a small program.
- finding and correcting errors in programs (debugging).
- showing the use of declaring and assigning variables.
- Carrying out binary and decimal conversions, together with binary additions
- Using logic gates in a variety of scenarios
- How to complete basic sorting and searching of small data sets
- How to present data in a variety of formats
- Evaluating ethics of AI

DESIGN TECHNOLOGY

Students will develop their **KNOWLEDGE** of:

- understanding the role of engineers and celebrating their areas of success
- developing knowledge to make informed choices with regard to composite material properties and selection
- understanding the performance characteristics of materials in regards to their heat performance and properties
- developing their knowledge and understanding of how to apply a systematic design approach
- developing knowledge of elderly needs and how this affects design outcomes
- being able to test and evaluate the use of electronic components
- developing knowledge of industrial manufacturing processes such as shaping and deforming techniques
- debating the impact of modern inventions and technology has on our lives today.

Students will develop their **SKILLS** in:

- being able to carry out effective research tasks
- applying and developing technical communication skills
- developing and applying evaluation and analysis skills
- being able to plan and follow a range of design approaches
- developing independency when working on a project
- use of modelling and Computer Aided Design in communicating ideas
- carrying out testing strategies and recording results
- being able to identify and record areas for improvement and/or modification
- developing the ability to discuss and articulate ideas.

DRAMA

Students will develop their **KNOWLEDGE** of:

Theatrical Style:

- Artaud and the Theatre of Cruelty
- Willy Russell and contemporary Social Theatre
- Devised theatre (combinations of any styles of theatre studied to date)

Culture:

- Early 20th Century expressionism and Avant Garde theatre
- Role of designers in the Theatre industry
- Shakespeare's Macbeth
- Social divide / 1980's Britain (Thatcherism)
- The role and importance of Musical Theatre

Theatrical Conventions:

- Artaudian devices (bombardment of the senses, symbolism, non-naturalistic movement, precision and repetition of movement, visual imagery)
- Theatrical design: costume, lighting, sound, set
- Narration, purposeful still image, split focus, marking the moment

Students will develop their **SKILLS** in:

- Communication and oracy
- Group work
- Leadership / directing
- Active listening
- Using drama terminology when creating or evaluating work
- Audience awareness
- Verbal analysis
- Communication with an audience using eye contact and projection
- Staying in role

ENGLISH

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**.**

Writing:

- the methods used to write with engagement and control.

Speaking and Listening:

- the various ways in which talk and discussion can be used to articulate meaning.

Cultural Knowledge:

- how English has changed from Ancient Greece to the modern era
- the influences that the different cultures and eras have had on the English Language and its Literature.

Students will develop their **SKILLS** in:

Reading:

- articulating informed interpretations of meanings supported by textual reference
- analysing methods used to convey ideas, including language, structure and form
- using subject terminology accurately to support their analysis of language, structure and form
- comparing ideas, attitudes, methods and contexts in order to evaluate effectiveness
- relating different texts to their relevant social, historical and literary context
- evaluating a text and the effect it has on a range of audience
- explaining the author's intentions, using their name and embedding references throughout to support interpretations.

Writing:

- 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
- organising cohesive whole texts, effectively sequencing and structuring details within texts
- producing texts that match the audience, purpose and register of different genres
- writing with control and engagement for a variety of different audiences and purposes.

Speaking and Listening:

- talking in purposeful and imaginative ways to explore ideas and feelings
- listening and responding to others, including in pairs and groups
- creating and sustaining different roles and scenarios
- understanding the range and uses of spoken language.

FOOD AND NUTRITION

Students will develop their **KNOWLEDGE** of:

- extending their knowledge and understanding of food, diet and health
- extending their knowledge of consumer food choices
- explaining the characteristics and functions of ingredients and how they are used in cooking
- adapting and following basic recipes to prepare and cook a range of dishes
- demonstrating a range of food preparation and cooking techniques and independently apply the principles of food safety and hygiene
- understanding the scientific principles behind preparing and cooking foods
- understanding the basic terminology of food science.

Students will develop their **SKILLS** in:

- adapting and following a recipe using appropriate ingredients and equipment to prepare and cook a range of more complex and well-presented dishes
- demonstrating an extended range of food preparation and cooking techniques with accuracy
- developing creative, technical and practical expertise to perform everyday tasks confidently and with flair
- evaluating, testing and adapting their ideas and products
- using a range of specialist equipment, techniques and processes
- using a range of ingredients to adapt and make savoury and sweet recipes
- using the cooker (hob, grill, oven) with confidence
- using the bridge hold and claw grip with confidence and accuracy
- being aware and confident of how to prepare, cook, store and reheat food safely
- improving time management skills
- demonstrating the function of ingredients in a range of different products
- demonstrating batch production and explaining the importance portion control.

GEOGRAPHY

Students will develop their **KNOWLEDGE** of:

- Development
- Tectonics
- Glaciation
- 21st century challenges
- Coasts

Students will develop their **SKILLS** in:

- Cartography
- Graphicacy
- Numeracy
- Enquiry
- Communication

HISTORY

Students will develop their **KNOWLEDGE** of:

- The First World War
- Female Suffrage
- 20th Century Dictatorships
- The Second World War
- The Holocaust
- 20th Century Britain
- The Cold War
- The British Empire – Decolonisation

Students will develop their **SKILLS** in:

- Causation
- Change and Continuity
- Using Historical Evidence
- Interpretation

MATHS

Students will develop their **KNOWLEDGE** of:

- Using ratio tables to solve problems with fluency. Selecting appropriate strategies considering efficiency when using a calculator and not. Using multiplication and division by decimals and fractions with relative ease
- Using the number line efficiently to order numbers written in different formats including index form, standard form and surd form
- Using combination tables when solving linear simultaneous equations
- Developing effective strategies to solve equations with unknown on both sides including those involving subtraction and fractional values of x
- Using the area model effectively to factorise and expand single and double brackets
- Using a combination of strategies to calculate area and surface area of complex shapes and compound shapes
- Further explore co-ordinate geometry through big picture ideas linking algebra and graphs including, quadratics, cubics and simultaneous equations
- Continue to develop statistical reasoning through probability
- Exploring the unit circle as an introduction to Trigonometry

Students will develop their **SKILLS** in:

- appreciating that being stuck is a necessary step to learning mathematics and are developing strategies to make progress in these situations. They are able to simplify multi-step problems and appreciate the importance of identifying what they can work out in order to make some progress with a given task.
- developing noticing and justification skills to actively make links in areas of mathematics and where appropriate outside the subject. They have an inquisitive approach to mathematics and are not satisfied with reaching a solution. They regularly ask themselves questions like 'how can the problem be made easier/harder', 'what changes if we change …', what happens if …', 'is this always/sometimes/never true'.
- appreciating links in graphical representation and are able to reverse problems (start with any aspect to complete others) – in particular looking at the graph of quadratics

- using mathematical language appropriately
- beginning to distinguish between examples and mathematical proof
- using construction equipment with relative ease.

MFL – FRENCH, GERMAN AND SPANISH

Students will develop their **KNOWLEDGE** of:

- how to build on and improve on grammar and vocabulary from Year 8 as appropriate to ensure progress
- a wide range of regular and irregular verb forms, including less common irregular verbs in different tenses
- using verb forms in past, present, future and conditional tenses without prompting
- using time markers to express different time frames
- how to use adjective agreement consistently accurately in different contexts
- using a very 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:

- reviewing and redrafting work and correcting errors regularly (study skills)
- 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

MUSIC

Students will develop their **KNOWLEDGE** of:

Music Theory:

- performing fluently using staff notation
- music with accidentals and in different keys.
- Ukulele and guitar notation

Appraising Music:

- Developed and increasingly independent application of the musical elements and wider linked vocabulary through critical listening of key repertoire.
- Music from a variety of different genres including music from the 'great composers.'

Students will develop their **SKILLS** in:

Performing

- **Keyboard:** performing music sequences in different keys,
- **Keyboard:** playing the keyboard with two hands.
- **Singing**: Singing as part small of a group performance as a soloist.
- **Ukulele and Guitar:** performing chord sequences indifferent key and melodies using tab.

Composing:

- Compose a section of a piece (including a melody, drum loop, bass line and chord sequence) using technology.
- Sequence, arrange and edit using technology with a more advanced use of texture and post-production techniques.

PE

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
- identifying antagonist muscle movement in sport specific skills
- identifying and describing components of fitness that benefit different sports/activities and developing these through HRE
- ways to effectively outwit opponents in a variety of activities
- the benefits of leading a healthy active lifestyle – through exercise and physical activity outside of school.

Students will develop their **SKILLS** in:

- climbing, trampolining, health related exercise, invasion games, table tennis, Athletics, striking and fielding
- team work
- using advanced techniques, strategies and tactics in a range of sports in competitive game situations and developing more advanced compositional ideas
- being able to make the correct decisions in competitive situations to allow you to beat an opponent regularly and effectively challenge their strategies and tactics within games
- accurately replicating movement patterns and using them successfully under pressure
- analysing performance of yourself and others during performance to alter the outcome of a game.

RELIGIOUS STUDIES (RS)

Students will develop their **KNOWLEDGE** of:

- Philosophy: Explorations of arguments for and against God's existence, the problem of Evil and Suffering, the Design Argument, the Big Bang Theory and the Oscillating Universe Theory.
- Miracles, God of the gaps and Near-Death Experiences
- Philosophical literacy
- Ultimate Philosophical questions and Philosophical literacy
- Judaism – understanding the first covenant between Abraham and God
- The Exodus – Moses and the Israelites
- Significance of Jewish festivals, the Torah and beliefs about the Messiah
- What it means to keep Kosher
- The role and significance of the Synagogue

Students will develop their **SKILLS** in:

- Using comprehensive religious and philosophical language to analyse religions and beliefs.
- Contextualise interpretations of religion with reference to historical, cultural, social and philosophical ideas.
- Critically evaluate the impact of beliefs and values.
- Coherently analyse differing interpretations of religious, spiritual and moral sources, using some of the principle methods by which religion and belief is studied.
- Appraise different understandings of religion and belief.
- Interpret and evaluate varied forms of expression.
- Synthesise a range of evidence, arguments, reflections and examples, fully justifying your own views and providing detailed evaluations.
- Give independent, well informed and highly reasoned insights.
- Provide well-substantiated and balanced conclusions.
- Debate challenging questions.
- Develop emotional intelligence and a greater sense of identity, compassion and empathy for others.

SCIENCE – BIOLOGY, CHEMISTRY AND PHYSICS

Students will develop their **KNOWLEDGE** of:

Biology –

- learning that heredity is a process that transmits genetic information from one generation to the next
- considering a simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin
- how blood glucose levels are regulated by two key hormones: Glucagon and insulin
- key structures in the nervous system and how these are involved in both voluntary and reflex reactions
- developing their understanding of variation, to identify that some organisms compete more successfully, driving natural selection
- how enzymes act as biological catalysts and are responsible for processes such as photosynthesis and respiration that they learnt in Year 8
- how to sample both plant and animal populations within an ecosystem.

Chemistry –

- consolidating their understanding of some basic chemistry fundamentals learnt in earlier years. Students will quickly move on to learn about chemical reactions and build upon their knowledge of this topic first covered in year 7. Towards the end of the first term, students will be introduced to the structure of the atom and sub-atomic particles.
- continuing to learn about the structure of atoms and discover how this links in with the arrangement of elements in the periodic table. Students will look at group 1, group 7 and transition group elements in more detail
- building upon ideas first met in Year 7 when they look at different separating techniques including distillation and chromatography and focusing on how to separate mixtures based on their properties.

Physics –

- reviewing their understanding of forces and electricity then advancing that understanding using the contexts of Newton's laws of motion and generating electricity
- simple machines; this covers the topics of pressure, moments and Hooke's Law. These are all essential basics for how this works and also present lots of mathematical skills that are the basis of much of Physics at KS4

- nuclear Physics covering the basics of alpha, beta and gamma radiation as well as the processes involved in nuclear power
- starlight. Students will combine knowledge of cosmological principles such as the life cycle of stars and the Big Bang theory with how we know anything about space, the light emitted by stars
- electromagnetism; this covers the topics of power stations, energy resources, mains electricity, electrical power, energy bills and the national grid.

Students will develop their **SKILLS** in:

Biology –

- an ability to represent continuous and discontinuous data through considering variation between individuals
- developing their sampling techniques and ability to record observations through the 'Ecology and Environment' topic
- how to comment on accuracy and reliability of experiments and suggest improvements
- how to calculate averages e.g. the mean result
- how to describe and explain trends in data e.g. describe and explain how temperature affects enzyme activity
- how to draw line and bar graphs.

Chemistry –

- learning about several different types of chemical reactions, which involve using practical skills and teamwork in order to carry out reactions safely
- carrying out experiments in order to separate a mixture based on the properties of the mixture using various separating techniques.

Physics –

- the practical skills of previous years looking at forces and electric circuits, and develop practical skills involving beams of light, springs and pivots. The expectations of how the data is presented (e.g. table of results and graphs) is to KS4 standard
- calculation - students' skills are also developed through the practice of various formulae.