



**CURRICULUM  
KNOWLEDGE AND SKILLS  
SUBJECT REFERENCE GUIDE  
YEAR 9**

## **ART AND DESIGN**

Students will develop their **KNOWLEDGE** of:

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

Students will develop their **SKILLS** in:

- drawing through a range of techniques in observational studies
- experimenting and using different media such as pencil, pens, types of paint and collage
- learning new processes such as printmaking, mixed media and papercutting
- developing a personal response through creativity with their artwork
- discussing and explaining ideas relevant to their work using art terminology
- discussing and comparing the work of others (artists and other sources)
- annotating and evaluating using relevant language.

## **COMPUTING**

Students will develop their **KNOWLEDGE** of:

- what 'if statements' and 'loops' are and how to use them effectively
- knowing that digital computers use binary to represent all data
- knowing how an image is represented in binary
- knowing the difference between hardware and software and their role within a computer system.
- Knowing the main functions of an operating system.

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.

## DESIGN AND TECHNOLOGY

Students will develop their **KNOWLEDGE** of:

- technical drawing techniques including, oblique drawing, isometric projection 1 and 2 point perspective.
- orthographic engineering drawing using both CAD and traditional drawing tools
- the impact of modern inventions such as CAD/ CAM and how this technology has impacted designers
- producing 3D models to develop and communicate ideas
- design briefs and understand how to reformulate them
- a range of lifestyle factors and consumer choices when designing products
- working confidently within a range of relevant domestic, local and industrial contexts, such as the health, leisure, culture, engineering, manufacturing, food, and fashion
- taking creative risks when making design decisions
- creating digital presentations and use computer-based tools to present professional portfolios
- an increasing range of designers, engineers, chefs, technologists and manufacturers and be able to relate their products to their own designing and making
- how to store, prepare and cook food safely and hygienically
- the principles of cleaning, preventing cross-contamination, chilling, cooking food thoroughly and reheating food until it is steaming hot.

Students will develop their **SKILLS** in:

- a broad range of drawing techniques to communicate in 3D
- using a broad range of machinery to manufacture products precisely
- making adjustments to the settings of equipment and machinery such as sewing machines
- testing, evaluating and refining their ideas and products against a specification to product graphic outcomes
- investigating and developing skills in modifying the appearance of materials including textiles and other manufactured materials e.g. dying and appliqué
- CAD and related software packages to validate their designs
- 3D CAD to model, develop and present their ideas
- following procedures for safety and hygiene and understand the process of risk assessment
- cooking a repertoire of predominantly savoury dishes to feed themselves and others a healthy and varied diet
- how to use a broader range of preparation techniques and methods when cooking, e.g. stir-frying, steaming, blending.

## DRAMA

Students will develop their **KNOWLEDGE** of:

- a range of theatre practitioners such as Stanislavski, Brecht, Berkoff, and Frantic Assembly.
- the theatre practitioner Antonin Artaud and the style of immersive theatre.
- Artaud's backlash to theatre at the time and its aesthetics
- Artaud's impact on the modern 21st century theatre.
- how to bring scripts to life through the use of performance skills (Physical, vocal, and spatial).
- the creative process of bringing to life a piece of theatre from page to stage using the extracts from the play Blood Brothers by Willy Russell.
- subtext through the study of the play text Blood Brothers by Willy Russell.
- devising and creating performance work through different historical events.
- Advanced dramatic conventions that will enhance a piece of performance.
- Developing characters for stage through different rehearsal techniques.
- Evaluating and analysing key moments from recorded live theatre.
- How lighting, sound, set, costume and props all enhance a piece of performance and how they make impact on an audience.
- Career roles found within a theatre setting.

Students will develop their **SKILLS** in:

- Creating Ritualistic Artaudian movement.
- Using and creating symbolic movement/gestures to create meaning.
- Adapting and creating movement sequence to add context.
- Using non-naturalistic movement to create abstract performances.
- Considering proxemics and space to communicate meaning.
- Focusing on body language and NVC as a way of communicating to an audience.
- using vocal skills in order to create character. Students continue to develop their use of the vocal toolbox focussing more on the use of volume and projection, and accent and dialect.
- Experimentation with the use of sound to communicate narrative rather than the use of dialogue.
- Annotation of scripts to find subtext.
- 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.

## 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 and effect their audience.

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:

- Suffrage and protest in Britain
- World War One
- 20<sup>th</sup> Century dictatorships
- World War Two
- Holocaust

Students will develop their **SKILLS** in:

- causation
- change and continuity
- historical evidence
- interpretation
- significance.

## 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 exploring co-ordinate geometry through big picture ideas linking algebra and graphs including, quadratics, cubics and simultaneous equations
- continuing 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.

## MODERN FOREIGN LANGUAGES: FRENCH, GERMAN AND SPANISH

Students will develop their **KNOWLEDGE** of:

- understanding that nouns have a gender and knowing the gender of a range of these
- understanding the difference between the different words used to say 'a/the/some'
- agreeing adjectives correctly and accurately
- using different verb forms for regular and some irregular verbs in the present tense
- using time markers to express different time frames
- using verbs in the past, present and future tenses
- understanding and using a variety of vocabulary to add detail to a range of topics.

Students will develop their **SKILLS** in:

- holding a short conversation with some spontaneity
- speaking with generally accurate pronunciation and intonation
- asking questions for communicative purposes
- giving opinions in different ways with reasons
- writing with extended sentences using connectives
- using vocabulary books and/or a dictionary to check spellings and find words
- checking work for mistakes in spelling and meaning
- writing paragraphs which include more complex language
- identifying cognates and key words to understand unfamiliar language
- understanding simple poetry and stories which stimulate their imagination
- reading and understanding both gist and detail in longer texts
- listening to and understanding speech of varying speed and length to understand both gist and detail
- transcribing words and short sentences which they hear with increasing accuracy
- translating texts using their understanding of both the Target Language and English to convey meaning accurately
- identifying learning needs from tests and assessments (study skills) and responding to feedback.

## MUSIC

Students will develop their **KNOWLEDGE** of:

- the elements of music (pitch, dynamics, tempo, texture, sonority (timbre), rhythm, metre, melody, harmony, tonality, articulation)
- musical symbols (such as notes on a staff, treble clef, time signatures, accidentals)
- notes of the keyboard (able to know the notes without support)
- treble clef notation (have a good understanding of treble clef notation for use in practical tasks)
- rhythmical musical symbols (crotchets, minims, quavers, equivalent rests etc.)
- musical genres (developing understanding of the musical features within a variety of musical genres, exploring the contexts, origins and traditions of different musical styles)
- musical vocabulary (knowledge of various musical terms, including Italian terms and ability to apply them correctly to various musical tasks).

*N.B. This knowledge is in addition to the development of their Year 8 musical knowledge, which will now be explored at a more advanced level.*

Students will develop their **SKILLS** in:

Performing Music -

- singing with expression, clear diction, fluency and accuracy – both solo and in a group
- demonstrating high level of confidence in performance
- maintaining an appropriate role within a group (leading, solo part or support)
- showing awareness of the needs of others in group tasks
- performing fluently and accurately on the keyboard and tuned percussion
- performing longer parts from memory and/or from music notations.

Composing Music -

- improvising melodic/rhythmic material within extended structures
- using tempo and dynamics creatively
- sustaining and developing musical ideas
- making significant contributions to a group
- composing music for different genres which explore musical features and devices
- using rehearsal time effectively to refine material.

Understanding Music -

- identifying different genres of music and their features within listening tasks
- describing and comparing musical features in listening tasks, using appropriate vocabulary

- recognising a variety of different instrument sounds, knowing the instrument families (to a higher level)
- knowing the musical elements and recognising them in listening tasks (to a higher level)
- considering successful/non-successful outcomes and improve their own and others' work
- describing and comparing musical features in listening tasks, using appropriate vocabulary
- evaluating how venue, occasion and purpose affect the way music is created performed and heard
- exploring the contexts, origins and traditions of different musical styles
- beginning to analyse music in more detail, using key words and musical terms
- using appropriate musical vocabulary when creating or evaluating work.

*N.B. The skills in performance, composition and listening & appraising are in addition to the skills they have learnt in Year 8 but working to a more advanced level.*

## **PHYSICAL EDUCATION (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:

- health related exercise, invasion games, dance, 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.
- the 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 principal 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 -

- the variation between species and within species and how humans have used this to their advantage through selective breeding.
- 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
- developing their understanding of variation, to identify that some organisms compete more successfully, driving natural selection
- factors affecting photosynthesis plus adaptations of plants for photosynthesis and water transport
- the role of the phloem and the xylem
- the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules
- how enzymes act as biological catalysts and are responsible for processes such as photosynthesis and respiration that they learnt in Year 8
- relationships in an ecosystem, including food webs including biodiversity and food security
- how farming practices can impact the environment and plant growth including use of pesticides and the environmental impact of fertilisers (eutrophication).

Chemistry -

- composition, properties and uses of every day materials including ceramics, polymers and composite materials
- consider further effects of pollution caused by manufacturing of materials, examine benefits of recycling everyday materials
- represent chemical reactions using balanced symbol equations
- develop their understanding of the reactivity series in terms of corrosion, sacrificial protection, reactions with water and acids, displacement and displacement reactions
- use the reactivity series to explain the extraction methods for different metals
- have an understanding of endo and exothermic reactions, determine which a reaction is
- 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. Later in the year, students will be introduced to the structure of the atom and sub-atomic particles.

Physics -

- the forces involved in motion. Students calculate and investigate different aspects of speed, velocity and acceleration including distance-time graphs
- simple machines; this covers the concepts of levers, moments, pressure and



- calculating work done.
- students review the basics of series and parallel circuits before moving on to more complex ideas of electricity such as static electricity and resistance
- the physics behind magnets and electromagnets, looking at their mechanisms and uses
- the waves unit. Students will revise what they learnt about waves in the light unit of year 7 and compare and contrast that learning with the new topic of light waves.
- gravitational forces, looking at the solar system from the point of view of the forces acting on people, satellites and planets.

Students will develop their **SKILLS** in:

Biology -

- an ability to represent continuous and discontinuous data through considering variation between individuals
- 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.
- the waves unit. Students will revise what they learnt about waves in the light unit of year 7 and compare and contrast that learning with the new topic of light waves.
- gravitational forces, looking at the solar system from the point of view of the forces acting on people, satellites and planets.

Chemistry -

- carry out crystallisation to produce pure, dry copper sulphate crystals
- 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 to determine whether a reaction is endo or exothermic.
- writing and balancing symbol equations.

Physics -

- the practical skills including construction of simple electromagnets and investigating factors which affect their strength
- investigating factors affecting resistance in electrical circuits
- calculation - students' skills are also developed through the practice of various equations.



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