

# Computing & Technology

Statement of curriculum intent for each key stage for every subject.

## Computing

### KS3

The overarching aim for Computing at KS3 is to promote high standards of computational thinking and creativity, to understand how computing is used in everyday life. We aim for all our students to enjoy their computing lessons through a variety of exciting tasks designed to engage and provoke thought.

All students will be equipped with the ability to-

- understand how to use technology safely, including protecting their online identity and be able to recognise and report inappropriate content.
- demonstrate how to model real life situations and as a result, are able to design, create, test and evaluate their solutions to solve problems and this will give them a solid base for future life and study skills.
- appreciate how technology can be used to proactively help current issues that impact on modern society.
- use a variety of programming languages and applications
- understand the components of a computer system and how they communicate.

### KS4

The overarching aim in Computing at KS4 is designed to recognise prior learning, provide first hand learning experiences, allow all students to develop interpersonal skills, build resilience and become creative and critical thinkers. We ensure that students become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

All students will be equipped with the ability to-

- use a variety of software with confidence, to solve relevant problems.
- develop knowledge and understanding of different types of user interfaces, how user interface design principles are used to meet the needs of different users, and how organisations collect, manipulate and interpret data to draw conclusions and make decisions
- development IT skills such as project planning, iterative design of a user interface, using data manipulation tools to create a dashboard, interpreting and drawing conclusions from data
- demonstrate reflective practice, identifying areas for improvement and responding to feedback
- explore how organisations use digital systems and the wider implications associated with their use.

## KS4

The overarching aim in Computer Science at KS4 is to encourage students to use computational thinking and creativity to understand and change the world. Computer Science has deep links with mathematics, science and design and technology, and provides insights into both natural and artificial systems. Students are taught the principles of information and computation, how digital systems work and apply this knowledge through programming. Building on this knowledge and understanding, students are equipped to use information technology to create programs, systems and a range of content.

All students will be equipped with the ability to-

- understand and apply the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms, and data representation
- analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs
- think creatively, innovatively, analytically, logically and critically
- understand the components that make up digital systems and how they communicate with one another and with other systems
- understand the impact of digital technology on the individual and on wider society
- apply mathematical skills relevant to computer science.

# Technology

## KS3

The overarching aim for Design Technology at KS3 is to provide an inspiring, rigorous and practical subject, to promote high standards, which allows them to exercise their creativity through designing and making. The students are taught to combine their designing and making skills with knowledge and understanding in order to design and make a product. Skills are taught progressively to ensure that all children are able to learn and practice in order to develop, as they move through the school. Evaluation is an integral part of the design process and allows students to adapt and improve their product; this is a key skill, which they need throughout their life. D&T allows students to apply the knowledge and skills learned in other subjects, particularly Maths, Science and Art. Student's interests are captured through theme learning, ensuring that links are established in a cross-curricular way, giving children motivation and meaning for their learning.

All students will be equipped with the ability to-

- use research to study different cultures, investigate, past, present and new emerging technologies to identify and solve a problem
- understand and use the properties of materials/tools and how these can be used in their own products
- use a range of software applications to develop their technical knowledge, design and make skills
- develop and communicate design ideas using annotated sketches, detailed plans, 3D and mathematical modelling.
- test, evaluate and refine ideas and products against a specification

## KS4

The overarching aim for Design Technology at KS4 is to encourage students to develop and use their creativity and imagination. Students design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They obtain a broad range of subject knowledge and draw on disciplines from mathematics, science, engineering, computing and art. Students are inspired to take risks, becoming more independent, resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world.

All students will be equipped with the ability to-

- develop realistic design proposals as a result of the exploration of design opportunities and users' needs, wants and values
- use imagination, experimentation and combine ideas when designing
- develop the skills to critique and refine their own ideas while designing and making
- communicate their design ideas and decisions using different media and techniques, as appropriate for different audiences at key points in their designing
- develop decision-making skills, including the planning and organisation of time and resources when managing their own project work
- develop a broad knowledge of materials, components and technologies and practical skills to develop high-quality, imaginative and functional prototypes
- be ambitious and open to explore and take design risks in order to stretch the development of design proposals, avoiding stereotypical responses.
- consider the costs, commercial viability and marketing of products

# Food Preparation & Nutrition

## KS3

The overarching aim for Food Preparation & Nutrition at KS3 is to promote high standards through learning how to cook and apply principles of nutrition and healthy eating. Students will be equipped with the knowledge, understanding and skills required to cook and apply the principles of a health and nutrition.

All students will be equipped with the ability to-

- understand and apply the principles of nutrition and health
- cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet
- become competent in a range of cooking techniques by selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes.
- understand the source, seasonality and characteristics of a broad range of ingredients

## KS4

The overarching aim in Food Preparation & Nutrition at KS4 is to equip students with the knowledge, understanding and skills required to cook and apply the principles of food science, nutrition and healthy eating. It encourages students to cook, enables them to make informed decisions about food and nutrition, and allows them to acquire knowledge, make connections between theory and practice, in order to be able to feed themselves and others affordably and nutritiously, now and later in life.

All students will be equipped with the ability to-

- demonstrate effective and safe cooking skills by planning, preparing and cooking a variety of food commodities whilst using different cooking techniques and equipment
- develop knowledge and understanding of the functional properties and chemical characteristics of food as well as a sound knowledge of the nutritional content of food and drinks
- understand the relationship between diet, nutrition and health, including the physiological and psychological effects of poor diet and health
- understand the economic, environmental, ethical and socio-cultural influences on food availability, production processes, diet and health choices
- demonstrate knowledge and understanding of functional and nutritional properties, sensory qualities and microbiological food safety considerations when preparing, processing, storing, cooking and serving food
- understand and explore a range of ingredients and processes from different culinary traditions (traditional Welsh, British and international) to inspire new ideas or modify existing recipes.