



## Computing Curriculum

### Intent

The principal aim of our computing curriculum is to provide our pupils with a high-quality computing education, which equips them with computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science and design and technology; it provides insights into both natural and artificial systems.

The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to apply this knowledge through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content.

Computing also ensures that our pupils become digitally literate. They are able to use, and express themselves and develop their ideas through, information technology, at a level that is suitable for the workplace and as active participants in a digital world.

### **Our curriculum for computing aims to ensure that all pupils:**

Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.

Analyse problems in computational terms, and have regular practical experiences of writing computer programs in order to solve such problems.



Learning in our 3D immersive space

Evaluate and apply information technology, including new and unfamiliar technologies, analytically solving problems.

Be responsible, competent, confident and creative users of information and communication technology.

### **Implementation**

Schools have a responsibility to deliver computing to all pupils. At Humberston Cloverfields Academy, we ensure that sufficient time is given to enable all pupils to master the computing curriculum and securely achieve age-related expectations. We follow iCompute to ensure all pupils have the chance to learn, develop and master their computing skills in a wide variety of engaging activities whilst developing their skills as the curriculum is coherent and progressive. Computing lessons provide all pupils with the support and challenge they require to be successful, according to their needs.

All pupils take part in a one hour computing lesson each week as well as applying their computing skills across the curriculum, as computing is used as an integral part of learning sequences.

E-safety is a priority at Humberston Cloverfields and is taught specifically throughout the year and throughout topics. Key issues such as cyber-bullying and personal security are included in the topics covered. Microsoft Office skills are taught alongside the iCompute lessons to ensure pupils are ready for secondary school and future employment. Pupils are regularly given opportunities to apply their skills throughout the wider curriculum.

Our whole-school iCompute scheme ensures pupils are given the opportunity to use various technological equipment including, but not limited to, iPads, laptops, cameras, visualisers and Beebots. Learning is progressive throughout the year and across year groups. We use applications including iCompute and Scratch, which allows all pupils to:

Design and write programs that accomplish specific goals, including controlling and simulating physical systems, and solve problems by decomposing them into smaller parts.

Use sequence, selections and repetitions in programs, work with variables and various forms of input and output, generate appropriate inputs and outputs to test programs.

Use logical reasoning to explain how a simple algorithm works, detect and correct errors in algorithms and programs.

Understand computing networks, including the internet, how they can provide multiple services, such as the World Wide Web and the opportunities they offer for communication and collaboration.

Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish goals, including collecting, analysing, evaluating and presenting data and information.

Gain knowledge and understanding of a world beyond the school via our 3D immersive classroom.

### **Impact**

At Humberston Cloverfields Academy, we want our computing provision to impact our pupils in the ways listed below. We want our pupils to become effective coders and users of technology. In order to achieve this, our pupils will demonstrate:

A competence in coding for a variety of practical and inventive purposes, including the application of ideas across the curriculum.

The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.

An understanding of the connected nature of devices.

The ability to communicate ideas well by using applications and devices throughout the curriculum.

The ability to collect, organise and manipulate data effectively.

Be ready for the next stage of their education.

Be able to take an active and safe role in an increasingly technological society.

We monitor the impact of our computing provision through half termly whole school assessments and challenges, quizzes, lesson observations, monitoring and evaluations of outcomes.