



## Computing: Year 8

Scheme of Learning	Assessments
<p><b>Half Term One: Using Computers</b></p> <p>This unit will look at different hardware and software, including how the CPU works, memory and storage, networks, operating systems and Open Source Vs Proprietary software. It will also look at translating binary addition.</p> <p><b>Key concepts:</b></p> <p><b>CS AO4:</b> Understand the components that make up digital systems, and how they communicate with one another and with other systems.</p> <p><b>CS AO5:</b> Understand the impacts of digital technology to the individual and to wider society.</p> <p><b>CS AO6:</b> Apply Mathematical skills relevant to Computer Science.</p> <p><b>The Overarching Inquiry:</b> How does a computer actually work?</p>	<p><b>Assessment One:</b></p> <p>Create a presentation that looks at current and possible future uses of technology. (AO4, AO5)</p> <p><b>Assessment Two:</b></p> <p>End of Unit Quizizz test covering input/output devices, the CPU, memory, networks, search engines (AO4) and Binary (AO6)</p>
<p><b>Half Term Two: Programming (Python)</b></p> <p>In this unit we will be working in Python to complete a small project that includes a variety of programming techniques. We will also look at the Systems Development Lifecycle, algorithms and prototyping.</p> <p><b>Key concepts:</b></p> <p><b>CS AO1:</b> Understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms and data</p>	<p><b>Assessment One:</b></p> <p>Quizizz test covering programming terminology and techniques, development lifecycle and algorithms (AO1, AO3)</p> <p><b>Assessment Two:</b></p> <p>Create annotated screenshot evidence of a program created in Python, using data types, sequencing and techniques such as variables, iteration, IF statements,</p>

<p>representation.</p> <p><b>CS AO2:</b> Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs.</p> <p><b>CS AO3:</b> Think creatively, innovatively, analytically, logically and critically.</p> <p><b>CS AO6:</b> Apply Mathematical skills relevant to Computer Science.</p> <p><b>The Overarching Inquiry:</b> How would a computer program control a car park?</p>	<p>loops, Boolean logic and selection, accompanied by testing and evaluation of the program (<b>AO2, AO3, AO6</b>)</p>
<p><b>Half Term Three:</b> Web Design / Graphics</p> <p>This unit will look at how to create a website that is suitable for audience and purpose, looking at both HTML and CSS, while creating appropriate graphical images to use in the site using graphics editing software.</p> <p><b>Key concepts:</b></p> <p><b>ICT AO2:</b> Perceptively evaluate the purpose and uses of creative media.</p> <p><b>ICT AO3:</b> Understand and use a wide range of creative media terminology correctly.</p> <p><b>ICT AO4:</b> Demonstrate, in depth research, analytical and evaluative skills.</p> <p><b>ICT AO5:</b> Interpret and present information with sensitivity to needs and with a flair for effective Communication.</p> <p><b>ICT AO7:</b> Create solutions which demonstrate detailed consideration of target audience and for a specific brief.</p> <p><b>The Overarching Inquiry:</b> What makes a good website?</p>	<p><b>Assessment One:</b></p> <p>Create a report to review and explain what makes a good website and graphics. Create a set of graphics images that are suitable for audience and purpose. (<b>ICT AO2, AO3, AO4 &amp; AO7</b>)</p> <p><b>Assessment Two:</b></p> <p>Create a website for a theme park, using appropriate content, demonstrating appropriate use of tools and techniques, accompanied by an evaluation of the product. (<b>ICT AO5 &amp; AO7</b>)</p>

<p><b>Half Term Four: Sound Editing</b></p> <p>This unit will teach pupils how to use appropriate audio software tools for creating and editing audio tracks. It will also look at the planning and preparation involved in creating a successful piece of audio that is suitable for a given audience.</p> <p><b>Key concepts:</b></p> <p><b>ICT AO2:</b> Perceptively evaluate the purpose and uses of creative media.</p> <p><b>ICT AO3:</b> Understand and use a wide range of creative media terminology correctly.</p> <p><b>ICT AO4:</b> Demonstrate, in depth research, analytical and evaluative skills.</p> <p><b>ICT AO5:</b> Interpret and present information with sensitivity to needs and with a flair for effective Communication.</p> <p><b>ICT AO6:</b> Use techniques efficiently to source, select and store appropriate assets effectively, in a wide variety of contexts.</p> <p><b>ICT AO7:</b> Create solutions which demonstrate detailed consideration of target audience and for a specific brief.</p> <p><b>The Overarching Inquiry:</b> How do music producers create the latest hit track?</p>	<p><b>Assessment One:</b></p> <p>Create a plan for an audio file. Collect an appropriate set of audio files and create a table to source them clearly. (ICT AO2, AO3, AO4, AO6)</p> <p><b>Assessment Two:</b></p> <p>Create an audio file advert, using tools such a crop, trim, pitch and fade, which appeals to the appropriate audience. (ICT AO5 &amp; AO7)</p>
<p><b>Half Term Five: Data Handling</b></p> <p>This unit will look at creating forms and reports, complex queries using Boolean operators, key fields and validation. It will teach pupils about the importance of database maintenance and GIGO.</p> <p><b>Key concepts:</b></p> <p><b>CS AO1:</b> Understand and apply the fundamental principles and concepts of Computer Science, including abstraction,</p>	<p><b>Assessment one:</b></p> <p>Annotated screenshot evidence of queries, forms and reports created in a database model. (AO1, AO6, ICT AO5)</p> <p><b>Assessment Two:</b></p> <p>End of Unit Quizizz test covering Boolean, complex queries (AO6), forms, reports (ICT AO5, AO6 &amp; AO7), maintenance, GIGO and validation (AO1, ICT AO5 &amp; AO6).</p>

<p>decomposition, logic, algorithms and data representation.</p> <p><b>CS AO6:</b> Apply Mathematical skills relevant to Computer Science.</p> <p><b>ICT AO5:</b> Interpret and present information with sensitivity to needs and with a flair for effective Communication.</p> <p><b>ICT AO6:</b> Use techniques efficiently to source, select and store appropriate assets effectively, in a wide variety of contexts.</p> <p><b>ICT AO7:</b> Create solutions which demonstrate detailed consideration of target audience and for a specific brief.</p> <p><b>The Overarching Inquiry:</b> How do police use databases to help them catch criminals?</p>	
<p><b>Half Term Six:</b> Extended STEM Project</p> <p>This unit will use a variety of skills to plan the launch of a space rover to another planet. It will incorporate research skills, sensors, spreadsheet modelling, image editing and some programming.</p> <p><b>Key concepts:</b></p> <p><b>CS AO1:</b> Understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms and data representation.</p> <p><b>CS AO2:</b> Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs.</p> <p><b>CS AO3:</b> Think creatively, innovatively, analytically, logically and critically.</p> <p><b>CS AO4:</b> Understand the components that make up digital systems, and how they communicate with one another and with other systems.</p>	<p><b>Assessment One:</b></p> <p>Provide evidence of researching and analysing a planet (<b>ICT AO4</b>), the use of sensors (<b>AO3, AO4</b>) and creating a spreadsheet model with analysis of data (<b>AO1, AO3, AO6, ICT AO5</b>)</p> <p><b>Assessment Two:</b></p> <p>Create promotional material (<b>ICT AO5, AO7</b>), a flowchart and a program that show the operation of the planetary rover (<b>AO1, AO2, AO3, AO6</b>)</p>

**CS AO5:** Understand the impacts of digital technology to the individual and to wider society.

**CS AO6:** Apply Mathematical skills relevant to Computer Science.

**ICT AO4:** Demonstrate, in depth research, analytical and evaluative skills.

**ICT AO5:** Interpret and present information with sensitivity to needs and with a flair for effective communication.

**ICT AO7:** Create solutions which demonstrate detailed consideration of target audience and for a specific brief.

**The Overarching Inquiry:** How is technology used in space missions to research planets?  
spreadsheets to analyse data that we collect?