

**IT**

**2025 – 2026**



**THE GRANGE SCHOOL**



## IT and Computer Science – Year 7

<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>To develop understanding of the use of IT and the use of different applications to create and evaluate products.</li> <li>Introduction to IT and the use of Satchel One, MS Teams, Seneca and BromCom.</li> <li>An introduction to Computer Science and the development of programming skills using block programming.</li> <li>Introduction to spreadsheets.</li> <li>Introduction to E-safety.</li> </ul>
<b>Curriculum Content:</b>	
<b>Autumn Term 1<sup>st</sup> Half</b>	<p><b>Introduction to IT.</b></p> <p>Using e-mails. Health and safety in IT. Digital Footprint. E-safety (staying safe online). This unit introduces the topics listed above allowing the learner to gain an insight into each topic. This topic introduces the important issue of staying safe online.</p>
<b>Autumn Term 2<sup>nd</sup> Half</b>	<p><b>Understanding Computers.</b></p> <p>This topic looks at the use of Binary numbers, what makes up a computer and the development of computers over the years.</p>
<b>Spring Term 1<sup>st</sup> Half</b>	<p><b>Spreadsheets.</b></p> <p>Graphs in spreadsheets. Manipulating data. This unit introduces the use of spreadsheets and looks at the manipulation of data within a model.</p>
<b>Spring Term 2<sup>nd</sup> Half</b>	<p><b>Safe use of Computers</b></p> <p>This topic looks at Encryption, Passwords and our Digital Footprint.</p>
<b>Summer Term 1<sup>st</sup> Half</b>	<p><b>Computational Thinking (Algorithms)</b></p> <p>This unit introduces algorithms and uses flowcharts to show the flow of data and use of algorithms to solve problems. Simple programming is introduced using Python programming.</p>
<b>Summer Term 2<sup>nd</sup> Half</b>	<p><b>Block Programming</b></p> <p>This use will focus on programming using a block-based programming language.</p>
<b>Assessments</b>	<p>Each of the units of work will have some assessment. Some units will have small assessments, others will work towards creating one final piece of assessed work. The theory units of work will be assessed by a test at the end of the unit.</p>
<b>Homework Structure</b>	<p>Homework will be set throughout the units of work. Some will be paper-based and others will be interactive work. All homework will be recorded on Satchel One and/or MS Teams.</p>
<b>School-based enrichment opportunities</b>	<p>Students have access to computers and printers in the afterschool homework club. These operate every day from 3 – 4pm.</p>
<b>Resources available for home-based study</b>	<p>Resources from the lessons can be found on Satchel, Seneca and/or MS Teams <a href="https://senecalearning.com">https://senecalearning.com</a></p> <p>Resources and support to help with learning Python. <a href="https://www.python.org/">https://www.python.org/</a></p>

## IT and Computer Science – Year 8

<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>• To solve problems independently, using Python.</li> <li>• To understand concepts relating to e-safety, machine learning and AI.</li> <li>• To understand how computer networks and network terminologies.</li> <li>• To develop an improved understanding of cyber security.</li> <li>• To look at the use of computers and how to keep themselves safe when doing so.</li> <li>• To deepen students understanding of spreadsheets.</li> </ul>
<b>Curriculum Content:</b>	
<b>Autumn Term 1<sup>st</sup> Half</b>	<b>E-Safety:</b> In this unit of work, students will be looking at online communication and how to keep themselves safe. They will look at what information they should share and also what to do if they have a problem.
<b>Autumn Term 2<sup>nd</sup> Half</b>	<b>Spreadsheets:</b> In this section, students will look at developing and manipulating a model, using a range of more advanced skills. They will use graphs and be able to present their data in a range of ways. The students will investigate what happens when data in a model is changed and the impact it has on other data.
<b>Spring Term 1<sup>st</sup> Half</b>	<b>Networks:</b> In this unit of work, students will look at how computers can be connected in different ways. How information can be stored in the cloud.
<b>Spring Term 2<sup>nd</sup> Half</b>	<b>Computer Crime and Cybersecurity:</b> In this unit of work students will look at Emails, scams, protecting personal data, hacking, copyright and health and safety when using the computer.
<b>Summer Term 1<sup>st</sup> Half</b>	<b>Python</b> In this unit of work, students will start to develop their skills in Python and will look at writing short programs.
<b>Summer Term 2<sup>nd</sup> Half</b>	<b>Python continued</b> In this unit of work, students will continue develop their skills in Python and will look at writing short programs and fixing basic errors.
<b>Assessments</b>	Each of the practical units of work will have some assessment. Some units will have small individual assessments; others will work towards creating one final piece of assessed work. The theory units of work will be assessed by a test at the end of the unit.
<b>Homework Structure</b>	Homework will be set throughout the units of work. Some will be paper-based, and others will be interactive work e. All homework will be recorded on Satchel One and/or MS Teams.
<b>School-based enrichment opportunities</b>	Students have access to computers and printers in the lunchtime Homework club and also in the afterschool homework club. These operate every day.
<b>Resources available for home-based study</b>	Resources from the lessons can be found on Satchel, Seneca and/or MS Teams <a href="https://senecalearning.com">https://senecalearning.com</a>

## IT and Computer Science – Year 9

<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>• To solve problems independently, using appropriate IT solutions.</li> <li>• To select software appropriately.</li> <li>• To write requirements and specifications and use them when designing and developing systems.</li> <li>• To look at the use of models and how these can be adapted to provide a range of information for the user.</li> <li>• To reflect on the work produced and to develop it further.</li> </ul>
<b>Curriculum Content:</b>	
<b>Autumn Term 1<sup>st</sup> Half</b>	<b>Binary</b> – In this unit, students will look at representing numbers in Binary form and the converting between Binary and Denary and back again.
<b>Autumn Term 2<sup>nd</sup> Half</b>	<b>Algorithms</b> In this unit of work, students will look at representing Algorithms with Flowcharts and Abstraction. Introduction to courses on offer in Key Stage
<b>Spring Term 1<sup>st</sup> Half</b>	<b>Python</b> In this unit of work, students will work on the Python code they have learned in Year 8 and will develop more complex programs.
<b>Spring Term 2<sup>nd</sup> Half</b>	<b>Spreadsheets</b> - In this section, students will look at developing and manipulating a model, using a range of more advanced skills. They will use graphs and be able to present their data in a range of ways. The students will investigate what happens when data in a model is changed and the impact it has on other data.
<b>Summer Term 1<sup>st</sup> Half</b>	Students will be split into classes based on which Key Stage 4 course they are following. They will then follow a computing-based topic or an IT based topic.
<b>Summer Term 2<sup>nd</sup> Half</b>	Students will be split into classes based on which Key Stage 4 course they are following. They will then follow a computing-based topic or an IT based topic.
<b>Assessments</b>	Each of the practical units of work will have some assessment. Some units will include small individual assessments, while others will involve working towards creating one final piece of assessed work. The theory units will be assessed by a test at the end of the unit.
<b>Homework Structure</b>	Homework will be set throughout the units of work. Some will be paper-based and others will be interactive work e. All homework will be recorded on Satchel One and/or MS Teams.
<b>School-based enrichment opportunities</b>	Students have access to computers and printers in the lunchtime Homework Club and also in the afterschool Homework Club. These operate every day.
<b>Resources available for home-based study</b>	Resources from the lessons can be found on Satchel, Seneca and/or MS Teams <a href="https://senecalearning.com">https://senecalearning.com</a> Resources and support to help with learning Python.

## Computer Science - GCSE

<b>Course Details</b>	<p><b>Exam Board: Edexcel</b></p> <p><b>Level: GCSE Grades 9-1</b></p> <p><b>Examination Structure: 100% examination – 2 papers</b> One written examination and one practical examination involving solving programming problems that are set by the exam board on the computer.</p> <p><b>Coursework/Controlled Assessment:</b> There is no coursework</p>
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>• To be able to develop Python code to solve a practical problem.</li> <li>• To understand problem-solving using algorithms.</li> <li>• To understand how data is represented in different ways.</li> <li>• To understand hardware and software.</li> <li>• To understand how computers communicate using networks and the internet.</li> <li>• To understand the impact computers have on the environment, our lifestyles, and privacy.</li> </ul>
<b>Curriculum Content – Year 10</b>	
<b>Autumn Term</b> (September – December)	Systems architecture and storage. Systems software. Introduction to programming. Data representation 1. String manipulation.
<b>Spring Term</b> (January - April)	Introduction to Turtle. Data representation 2. 1Dimensional lists.
<b>Summer term</b> (May - July)	Computer networks, protocols and layers 2 Dimensional lists. Network and cybersecurity. Further programming. Ethical, legal and environmental.
<b>Curriculum Content – Year 11</b>	
<b>Autumn Term</b> (September – December)	Sorting and searching. Data types and errors. Robust and secure programming.
<b>Spring Term</b> (January - May)	2-Dimensional Data. Basic and Advanced programming concepts. <b>Revision.</b>
<b>Assessments</b>	Written examination: 1 paper. Programming paper: 1 paper.
<b>Homework / independent study</b>	Use of online Python resources. Revision Guide and workbook available to purchase. It is strongly recommended that all students purchase these, as they are very useful in preparing students for the written examination and providing further examples of typical examination-style questions. Seneca learning and Smart revise.
<b>School-based enrichment opportunities</b>	Use of computers after school.
<b>Resources available for home-based study</b>	Resources available on appropriate online platforms. There is a range of videos to support each section of the specification. Seneca Learning is also used to support understanding.

## Information Technology – BTEC Level 3

<b>Course Details</b>	<p><b>Exam Board: Pearson</b></p> <p><b>BTEC Extended Certificate in Information Technology</b></p> <p><b>Examination Structure:</b> 4 units of work equivalent to 1 A level. 2 written examinations and 2 coursework-based units of study (practical &amp; theory)</p> <p><b>Coursework/Controlled Assessment:</b> 2 units of work.</p>
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>• Gain specialist knowledge and understanding of the use of ICT.</li> <li>• Understand how Cyber Security, Incident Management and ICT affects our lives.</li> <li>• Develop independent study skills and organisation.</li> <li>• Develop spreadsheet and database skills.</li> </ul>
<b>Curriculum Content – Year 12</b>	
<b>Autumn Term</b> (September – January)	<p><b>Unit 1: Information Technology Systems</b></p> <p><b>Learning Outcomes:</b> By the end of this unit, students will understand:</p> <ul style="list-style-type: none"> <li>• Digital devices used in IT systems and how they operate</li> <li>• Peripheral devices and media</li> <li>• Computer software in IT systems</li> <li>• Choosing IT systems</li> <li>• Emerging technologies</li> <li>• Transmitting data: connectivity, networks, security and bandwidth</li> <li>• Operating online</li> <li>• Protecting data and information</li> <li>• the impact of IT systems on individuals and organisations.</li> <li>• Moral, ethical and legal issues</li> </ul> <p><b>This examination will be sat in January of Year 12.</b></p>
<b>Spring Term</b> (February - May)	<p><b>Unit 2: Cyber Security and Incident Management</b></p> <p><b>Learning Outcomes:</b> By the end of this unit, students will understand:</p> <ul style="list-style-type: none"> <li>• Cyber security threats</li> <li>• System vulnerabilities</li> <li>• Legal responsibilities</li> <li>• Software and hardware security measures</li> <li>• Network types, components, and infrastructure services and resources</li> <li>• Cyber security documentation and internal policies</li> <li>• Forensics procedures and collection of evidence</li> <li>• Systematic forensic analysis of suspect systems</li> </ul> <p><b>This examination will be sat in May of Year 12.</b></p>
<b>Summer Term</b> (June - July)	<p><b>Unit 3: Website Development</b></p> <p><b>Learning Outcomes:</b> By the end of this unit, students will understand:</p> <ul style="list-style-type: none"> <li>• Purpose and principles of websites</li> <li>• Planning a website in response to a client brief</li> </ul> <p><b>Learning Aim A of this coursework will be completed by Summer Holiday of Year 12.</b></p>
<b>Curriculum Content – Year 13</b>	
<b>Autumn Term</b> (September – December)	<p><b>Unit 3: Website Development</b></p> <p><b>Learning Outcomes:</b> By the end of this unit, students will understand:</p> <ul style="list-style-type: none"> <li>• Website design</li> <li>• Asset management techniques</li> </ul>

	<ul style="list-style-type: none"> <li>• Planning a website in response to a client brief</li> <li>• Common tools and techniques to produce a website</li> <li>• Website development process</li> <li>• Website testing</li> </ul> <p><b>Learning Aims B and C of this coursework will be completed by Christmas Holiday of Year 13.</b></p>
<b>Spring Term</b> (January - May)	<p><b>Unit 4: Relational Database Development</b></p> <p><b>Learning Outcomes:</b> By the end of this unit, students will understand:</p> <ul style="list-style-type: none"> <li>• Relational database management systems</li> <li>• Manipulating data structures and data in relational databases</li> <li>• Normalisation</li> <li>• Planning relational database solution in response to a client brief</li> <li>• Relational database design techniques and processes</li> <li>• Design documentation</li> <li>• Reviewing and refining designs</li> <li>• Producing, Testing, Reviewing and Optimising a database solution</li> </ul> <p><b>Learning Aims A, B and C of this coursework will be completed by May Half Term Holiday of Year 13.</b></p>
<b>Assessments</b>	<p>Candidates will be assessed via practical and written assignments and assessments and exam papers during the course.</p> <p><b>Units 1 and 2 are assessed by an externally marked written examination.</b></p> <p><b>Units 3 and 4 assessed by internally marked coursework.</b></p>
<b>Homework / independent study</b>	<p>Students will be set research and practical skills tasks to prepare for and complete the set assignments. They will be expected to continue with coursework and to supplement their learning in theory work.</p>
<b>Equipment required</b>	<p><b>Level: 3 BTEC National Information Technology (ISBN 978-1292754888)</b></p> <p>Revision guide and workbook, course textbook.</p>
<b>School-based enrichment opportunities</b>	<p>Students should use study time during their timetable to complete assignments and to prepare and research tasks. They should also prepare their skills so that they are confident in using the software.</p>
<b>Resources available for home-based study</b>	<p>Resources available on Satchel and Teams</p> <p><a href="#">Know it all Ninja website</a></p> <p><a href="#">Craig and Dave website</a></p>