**Shipston High School - Computer Science Department**

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| **Year 7** | | |
| **Term** | **Content covered** | **Key Assessment** |
| **Autumn** | Using IT Systems: this term students look at how to log on, how to access resources on our network and how we must make sure that we stay safe while doing this. Students also consider how our use of computing technologies can have an impact on our environment. | Assessment Paper 1  Environment booklet |
| **Spring** | The Computer System: this term students study the components that make up a computer system to include input, processor, storage and output. They start to think about how we can connect to a network, the benefits of doing so and how data is actually transmitted around a network. | Assessment Paper 2 (Components)  Components PowerPoint  Assessment Paper 3 (Networks)  Networks booklet |
| **Summer** | Computational Thinking: students end Year 7 by looking at instructions, how we can plan out and then provide instructions to a machine to create our own software. As part of this they consider what is meant by the term applications software and use the program ‘Scratch’ to create their own game. | Game diary  Assessment Paper 4 (Computational Thinking concepts) |

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| **Year 8** | | |
| **Term** | **Content covered** | **Key Assessment** |
| **Autumn** | Using IT Systems: students start Year 8 by revising the essential health and safety considerations we should have whilst using IT systems and then consider the legal implications we should be aware of when working with computing technologies. We end this term looking at how the machine can use the data that we input. | Assessment Paper 1 (Year 7 revision and Legislation focus)  Legislation PowerPoint |
| **Spring** | The Computer System: students revise the content that they looked at in Year 7 about the components that make up a computer system and consider how we can choose between computer systems if we were to be responsible for purchasing one. After this students continue their work on networking and consider the risks that networks bring, and how we can protect the data we store on a network. | Assessment Paper 2 (Components)  Components booklet  Assessment Paper 3 (Networking)  Networking PowerPoint |
| **Summer** | Computational Thinking: students end Year 8 by reviewing the work they did in Year 7 on giving instructions in the form of flowcharts and program code and extend on this to work with text-based code to include sequence and selection techniques within the Python programming language. | Development Log  Assessment Paper 4 (Computational Thinking concepts) |

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| **Year 9** | | |
| **Term** | **Content covered** | **Key Assessment** |
| **Autumn** | Creating a program – The Project: Students in Year 9 work towards the Entry Level R354 in Computer Science, this starts off with designing, planning, coding and testing a solution to a given problem using the range of techniques covered in Year 7 and Year 8. | Formal coursework assessment for the R354 course. |
| **Spring** | Computational Thinking, Algorithms and Programming: Once the project is complete students look at the theoretical concepts such as how data is represented in binary code, how logic gates are used and revise producing algorithms.  The Computer System: Students revise the work they have done throughout Year 7 and Year 8 and build upon this to describe how data moves through a computer system from input to output. | CTAP Exam session  CS Exam session |
| **Summer** | Text-Based Coding: Students work towards creating a text-based adventure game utilising the skills and knowledge gained through the KS3 course. | Project planning  Development log  Formal testing |

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| **Year 10** | | |
| **Term** | **Content covered** | **Key Assessment** |
| **Autumn** | Students start the GCSE course with a focus on Unit 2 where they consider the importance of creating algorithms in order to plan solutions to problems and then build on the techniques that they started to work with in their Year 9 text-based coding unit while considering the key features of the IDE that they are using in order to produce code and why the code they create needs to be translated. | Algorithms and Programming Assessment Paper 1  Algorithms and Programming Assessment Paper 2 |
| **Spring** | During the Spring term students in Year 10 start to look at how data is processed with a focus on the hardware that is required to do this including the processor, storage technologies and the different types of memory that are needed. They also consider how images, sounds and characters are all processed as binary code. Students go on to consider the need for networks in today’s society and review the different types, models and topologies that we might use to connect devices. | Components Unit 1 Assessment 1  Components Unit 1 Assessment 2  Networking Unit 1 Assessment 3 |
| **Summer** | Students return to Unit 2 in this final term of Year 10 where they study how logic is used within computing and then work on planning and creating larger solutions to problems in the form of two projects. | Mock Examinations  Algorithms and Programming Assessment Paper 3 |

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| **Year 11** | | |
| **Term** | **Content covered** | **Key Assessment** |
| **Autumn** | Unit 2: Algorithms and Programming – students revise the work they did last year on planning solutions using algorithms and key coding techniques by working on a range of mini tasks. They then move on to working on a substantial coding project as outlined by the exam board. | Mock Examinations |
| **Spring** | Students spend the Spring term by revising and refining their knowledge of both Unit 1 and Unit 2 in order to be successful in answering exam questions. This starts off with Unit 1 where they review systems architecture, memory and storage, networking, software, ethics and law.  They then move back to the unit 2 concepts of algorithms, programming techniques, logic and languages. | Mini paper: 1.1  Mini paper: 1.2  Mini paper: 1.3  Mini paper: 1.4 & 1.5  Mini paper: 1.6  Mini paper: 2.1  Mini paper: 2.3  Mini paper: 2.4 & 2.5 |
| **Summer** | During the summer term there are very few lessons in Computer Science due to the placement of the GCSE Examinations being early in the session. With these lessons we work on practice exam papers and review how to best to complete these papers in exam conditions. | Formal GCSE Examinations |