IT Curriculum Overview—Key Stage 3

	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Year 7	Topic: Digital Skills and Security Resources: Computers, Google Classroom, Diagnostic Questions, Microsoft Office/Office 365, Focus: How do I set up a safe system of working on computers in school? Outcome: School systems set up securely, ready for use across curriculum. Duration: 3 lessons	Topic: Digital Skills and Security Resources: Google Classroom, Internet Focus: Do I understand Data Law and Encryption? Outcome: Describe laws of computing and how data is encrypted. Duration: 3 lessons	Topic: E-Safety Resources: Google Classroom, Internet Focus: How can I stay safe online? Outcome: Use the Internet, apps and social media safely. Duration: 3 lessons	Topic: E-Safety and Python Resources: repl.it Focus: Can I create a quiz that is coded in Python and shows my understanding of staying safe online? Outcome: Code a quiz in Python that shows other young people how to stay safe online. Duration: 3 lessons	Topic: Careers Online Resources: Careers Websites Focus: What online resources are there to help me choose a future career? Outcome: Identify some future potential careers and understand the qualifications needed and application process. Duration: 3 lessons	Topic: Careers Online Resources: Google Classroom Focus: How do I apply for jobs? Outcome: Write a CV and formal letter to apply for a job. Duration: 3 lessons
Year 8	Topic: Algorithms Resources: Google Classroom Focus: What are algorithms, flow charts and simple programs? How do we design and develop them? Outcome: Create an algorithm, flow chart and simple program to solve a problem. Duration: 3 lessons	Topic: Programming Resources: repl.it, Google Classroom Focus: How do you develop a program in Python to complete a series of steps? Outcome: Develop a program in Python that solves a real-world problem. Duration: 3 lessons	Topic: Computer Hardware Resources: Computer components, Google Classroom Focus: What are the components of a computer system? Which factors influence the performance of a computer system? Outcome: Select a computer system to meet specific requirements within a specified budget. Duration: 3 lessons	Topic: File Storage and Binary Resources: Calculators, Google Classroom, repl.it Focus: How do computers store data? How can you convert between number bases? Outcome: Create a quiz using Python on computer hardware, data storage and binary. Duration: 3 lessons	Topic: Networks Resources: Network hardware, Internet access, Google Classroom Focus: How do networks operate? What are the different types? Why do we use a particular type of network? Outcome: Create a presentation about different types of networks. Duration: 3 lessons	Topic: Web Design Resources: W3 Schools online, Internet, Google Classroom Focus: How do I create web pages using HTML? Outcome: Create a website of hyperlinked web pages with images and text. Duration: 3 lessons

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Year 9	Topic: Algorithms

Resources: Google Classroom, repl.it, Python

Focus: How do I think computationally? What steps do I need to take to solve a problem? How can I lay out those steps logically?

Outcome: I can write algorithms to solve problems including searching and sorting algorithms.

Duration: 9 lessons | Topic: Flowcharts and Exam Reference Language

Resources: Google Classroom, repl.it, Python

Focus: How do I think computationally? What steps do I need to take to solve a problem? How can I lay out those steps logically?

Outcome: I can create flow diagrams using the correct symbols. I can write algorithms in Exam Reference Language.

Duration: 9 lessons | Topic: Python Programming

Resources: Google Classroom, repl.it, Python

Focus: How does Python define different types of data? How can I output information from a program?

Outcome: I can write simple programs that solve problems. I can identify and fix errors in my code.

Duration: 9 lessons | Topic: Python Programming

Resources: Google Classroom, repl.it, Python

Focus: How can I streamline my code? How do I design solutions to complex problems?

Outcome: I can write complex programs with loops that solve real world problems.

Duration: 9 lessons | Topic: Components of a Computer System

Resources: Website, Google Classroom, Physical components, MS Paint

Focus: What are the parts that make up a computer? What is the function of the CPU? How does memory work?

Outcome: I can identify and describe the roles of the key components of a computer system.

Duration: 9 lessons | Topic: Memory and Data Storage

Resources: Website, Google Classroom, MS Paint

Focus: How do computer store information? What are the different types of memory and software?

Outcome: I can describe different types of memory and their purpose. I can explain the differences between types of software.

Duration: 9 lessons |
| Year 10 | Topic: Python Programming

Resources: Google Classroom, repl.it, Python

Focus: How can I streamline my code? How do I design solutions to complex problems?

Outcome: I can write complex programs with loops that solve real world problems.

Duration: 12 lessons | Topic: Programming, Assessment and Design

Resources: Google Classroom, repl.it, Python

Focus: What are arrays? How can I use sub programs? What is defensive design?

Outcome: I can create complex programs that create and use arrays and sub programs. I can explain defensive design. | Topic: Networks

Resources: Website, Google Classroom, MS Paint

Focus: Why are there different types of network? How do I choose the best one for a task? What hardware is used in networking?

Outcome: I can identify and describe different types of networks. I can explain the different items of network | Topic: Networks

Resources: Website, Google Classroom, MS Paint

Focus: What are network protocols? How does network security work? What is the Internet?

Outcome: I can explain network layers and protocols. I can describe how to protect data from various attacks. | Topic: Ethics and Legal Issues

Resources: Website, Google Classroom, MS Paint

Focus: What are the ethical, environmental, cultural, and legal issues in computing?

Outcome: I can describe the issues in computing. I can ensure that I use a computer legally and can protect myself from illegal | Topic: Designing and Testing Programs, Data Representation

Resources: Google Classroom, repl.it, Python

Focus: How can I design and test my programs? What are translators and IDEs and how can I use them? How can I convert between different number bases?

Outcome: I can exhaustively test my programs to ensure they meet design criteria. I |

		Duration: 12 lessons	hardware. I can describe a network topology. Duration: 12 lessons	Duration: 12 lessons	threats. Duration: 12 lessons	can convert between binary and denary numbers. Duration: 12 lessons
Year 11	Topic: Data Representation Resources: Website, Google Classroom, MS Paint Focus: How do computers store different types of data? Outcome: I can convert between binary, denary and hexadecimal. I can describe how computers store characters, images, sound, and compressed data. Duration: 12 lessons	Topic: Programming Tasks Resources: Google Classroom, repl.it, Python, sample programming tasks Focus: How do we structure, design, test and explain programming solutions to sample programming tasks? Outcome: I can design, test, and explain using flow charts, pseudocode and Python solutions to sample programming tasks. Duration: 12 lessons	Topic: Computer Hardware, Memory and Software Resources: Website, Google Classroom, MS Paint, Past papers Focus: How do we explain different features of computer hardware and software? Outcome: I can structure clear explanations of the features of computer hardware and software. Duration: 12 lessons	Topic: Networks and Ethics Resources: Website, Google Classroom, MS Paint, past papers Focus: How do we describe networks, their topologies, and layers? What are the ethics and laws in computing? Outcome: I can structure clear explanations of network technology. I can describe the ethics and laws in computing. Duration: 12 lessons	Topic: Types of Software and Revision Resources: Website, Google Classroom, MS Paint, past papers Focus: What are the different types of software? What are the key topics that I need to focus my revision on? How can I improve my understanding of these topics? Outcome: I can describe different types of software, their uses and features. I can identify strengths and weaknesses in my knowledge. I can use strategies to fill in any gaps in my knowledge. Duration: 12 lessons	