| | HT1 | HT2 | HT3 | HT4 | HT5 | HT6 |
|---|---|---|---|---|---|---|
| Year 7 | **Impact of Technology** | **Using Media** | **How do computers work?** | | **Networks** | **Modelling Data - Spreadsheets** |
| | Explore living safety and effectively in a digital world | Explore the use of media in Computing and concerns with legal issues. | Examine how computers work including how to give instructions using programming fundamentals | | Examine data transmission, online services, the construction, and benefits of networks | Explore the use of data and information and how spreadsheets can model solutions in real life context |
| Year 8 | **Computer Systems** | **Mobile App Development** | **Developing for the web** | **Media - Digital Graphics** | **Data Representation** | **Introduction to Text Based Programming** |
| | Explore the hardware and software needed to create a computer system | Explore object oriented, event driven programming to create a solution for a project while using computational thinking | Explore the technologies that make up the internet and World Wide Web | Explore the difference between vector and bitmap graphics and their uses. | Explore how all data is represented on a computer | Explore text-based programming languages and algorithm thinking |
| Year 9 | **Cyber Security** | **Data Science** | **Text Based Python Programming** | **Representations (Audio/Visual)** | **Physical computing** | **Future Technologies** |
| | Study practices and preventions to the threats to data | Study the transition between data and information and how visualisations give insights to help decision making. | Be able to design, use, test and evaluate computer programs in a fully text-based language | Focus on digital media such as images and sounds, and discover the science that lies beneath | Explore control technology and programming real-world devices | Explore current and emerging digital technology and the impact on the economy |

# Contents

| Year 7:<br>Impact of Technology<br><br>**Explore living safety and effectively in a digital world** | SKILLS:<br><br>• Use appropriate file and folder names<br>• Create a memorable and secure password for an account on the school network<br>• Locate and open personal documents and common applications<br>• Recognise a respectful email by examining its components<br>• Construct an effective email and send it to the correct recipients<br>• Plan and construct effective presentations for a given audience<br>• Check who you are talking to online<br>• Be able to present to an audience |
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| | KNOWLEDGE:<br><br>• How to be safe while using digital devices<br>• Requirements for a strong password<br>• How to communicate safely with peers online<br>• How to remain respectful online<br>• Describe what is meant by cyberbullying<br>• Know how to remain safe online<br>• Explain the effects of cyberbullying<br>• Know what to include in a presentation for a particular audience<br>• Know the meaning of digital footprint with examples |

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| Year 7:<br><br>Using Media<br><br>**Explore the use of media in Computing and concerns with legal issues.** | SKILLS:<br><br>• Select the most appropriate software to use to complete a task<br>• Identify the key features of different software<br>• Apply the main types of appropriate formatting to a document<br>• Evaluate formatting techniques to understand why we format documents<br>• Select appropriate images for a given context<br>• Demonstrate an understanding of licensing issues involving online content<br>• Demonstrate the ability to credit the original source of an image<br>• Critique digital content for credibility<br>• Apply techniques in order to identify whether or not a source is credible<br>• Apply referencing techniques and understand the concept of plagiarism<br>• Evaluate online sources for use in own work<br>• Organise the content of the digital artefact based on credible sources<br>• Construct a digital artefact using appropriate software<br>• Organise the content of a digital artefact based on credible sources<br>• Apply referencing techniques that credit authors appropriately |
| | KNOWLEDGE:<br><br>• Know a variety of software packages and their purpose<br>• Explain what is meant by formatting<br>• Understand why we format documents<br>• Understand what is meant by context<br>• Understand what is meant by appropriate for audience and suitability for purpose<br>• Understand the copyright law and its implications<br>• Understand plagiarism, paraphrasing and citation<br>• Understand that some sources are more credible than others<br>• Know how to identify credible sources<br>• Know what is meant by a digital artefact<br>• Know some potential impacts from the wider world |

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| Year 7: How do computers work<br><br>**Examine how computers work including how to give instructions using programming fundamentals** | SKILLS:<br><br>• Compare how humans and computers understand instructions (understand and carry out)<br>• Be able to define sequence, selection and iteration<br>• Predict the outcome of a simple sequence of code<br>• Be able to modify basic programs using sequence<br>• Identify variables in code<br>• Recognise that computers follow the control flow of input/process/output<br>• Predict the outcome of a simple sequence that includes variables<br>• Trace the values of variables within a sequence<br>• Be able to create a program involving sequence<br>• Be able to create a program involving selection<br>• Be able to identify selection within code and recognise the condition<br>• Create conditions that use comparison operators (>,<,=)<br>• Create conditions that use Boolean logic operators (and/or/not)<br>• Be able to create a program involving some form of iteration<br>• Be able to choose which type of iteration is required in a program<br>• Identify the different types of loop<br>• Detect and correct errors in a program (debugging)<br>• Independently design and apply programming constructs to solve a problem<br>• Identify possibilities for the use of basic subroutines<br>• Apply decomposition methods to a problem<br>• Create and utilise lists in programming |

| | KNOWLEDGE: |
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| | <ul><li>Know the difference between how humans and computers process instructions</li><li>Know different types of activities best suited to humans and computers</li><li>Know how to explain sequence, selection and iteration</li><li>Know what is meant by variables and their purpose</li><li>Understand and explain examples of variables in programs</li><li>Know what is meant by input-process-output</li><li>Know what is meant by tracing an algorithm</li><li>Know what is meant by decisions and conditions</li><li>Explain comparison operators</li><li>Explain the use of Boolean operators in programming</li><li>Know and explain the different types of loop</li><li>Describe reasons why we might use iteration</li><li>Explain what is meant by debugging</li><li>Explain what is meant by a subroutine</li><li>Explain the use of decomposition and its benefits</li><li>Define what is meant by a list and be able to use one</li><li>Describe the need for lists and identify when lists can be used in a program</li></ul> |

| Year 7: Networks<br><br>**Examine data transmission, online services, the construction and benefits of networks** | SKILLS:<br><br>• Be able to define what a computer network is<br>• Be able to explain how data travels between computers across a network<br>• Define 'protocol' and provide examples of non-networking protocols<br>• List examples of the hardware necessary for connecting devices to networks<br>• Compare wired to wireless connections<br>• Be able to list examples of specific networking hardware<br>• Be able to define 'bandwidth<br>• Be able to use the appropriate units for measuring the rate at which data is transmitted<br>• Be able to discuss familiar examples where bandwidth is important<br>• Be able to define what the internet is<br>• Be able to describe key words such as 'protocols', 'packets', and 'addressing'<br>• Be able to explain the difference between the internet and the World Wide Web<br>• Evaluate some internet services<br>• Be able to describe how services are provided over the internet<br>• List some of these services and the context in which they are used<br>• Be able to explain the term 'connectivity'<br>• Be able to describe how internet-connected devices can affect me<br>• Be able to describe various components forming the internet |

KNOWLEDGE:

- Know what a computer network is
- Know how data is transmitted between computers across networks
- Know some different protocols and their uses
- Know the hardware required to set up a network
- Know different types of wired and wireless connections and their differences
- Know what is meant by 'bandwidth'
- Know the different units for measuring the rate at which data is transmitted
- Know some examples of where bandwidth is important
- Know some examples of internet services and their uses
- Know how data travels between computers across the internet
- Describe key words associated with data transmission
- Know and understand the difference between the internet and the World Wide Web
- Know how some connectivity relates to online safety
- Know what is meant by connectivity
- Know the various components that create the internet

| | SKILLS: |
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| Year 7: Modelling Data<br><br>**Explore the use of data and information and how spreadsheets can model solutions in real life context** | <ul><li>Identify columns, rows, cells, and cell references in spreadsheet software</li><li>Be able to use cell references correctly</li><li>Use formatting techniques in a spreadsheet</li><li>Use conditional formatting in a spreadsheet</li><li>Use basic formulas using cell references to perform calculations in a spreadsheet</li><li>Use the autofill tool to replicate cell data</li><li>Be able to explain the difference between data and information</li><li>Be able to explain the difference between primary and secondary sources of data</li><li>Be able to collect data from a primary source</li><li>Be able to analyse data</li><li>Use a spreadsheet to sort and filter data</li><li>Create appropriate charts in a spreadsheet</li><li>Use the functions like SUM, COUNTA, MAX, and MIN in a spreadsheet</li><li>Use the functions AVERAGE, COUNTIF, and IF in a spreadsheet</li><li>Be able to use a spreadsheet model as a solution to a given problem</li></ul> |
| | KNOWLEDGE:<br><br><ul><li>Know what is meant by a row, column and cell</li><li>Know what is meant by a cell reference and their contents</li><li>Know what is meant by formatting in reference to a spreadsheet</li><li>Know what is meant by conditional formatting and its purpose</li><li>Know what is a meant by a formula and a calculation</li><li>Know what is meant by replicating data including formulas</li><li>Know the difference between data and information</li><li>Know the difference between primary and secondary sources of data</li><li>Know examples of primary and secondary data sources</li><li>Know the difference between sorting and filtering and its uses</li><li>Know the different types of charts and graphs and their purpose</li></ul> |

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| | - Know what is meant by a function and know some examples<br>- Know what is meant by modelling and some examples |

| Year 8:<br>Computer<br>Systems<br><br>**Explore the hardware and software needed to create a computer system** | SKILLS:<br><br>- Be able to recognise different types of computer system<br>- Be able to explain that programs are made from algorithms<br>- Be able to explain the criteria required to be classed as a computer<br>- Be able to identify the key hardware components of all computers<br>- Be able to describe the function of the hardware components used in computing systems<br>- Be able to explain the purpose of an operating system<br>- Be able to identify and explain different input and output devices<br>- Be able to summarise key information in a formatted document for a certain audience<br>- Identify examples of artificial intelligence in the real world |
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| | KNOWLEDGE:<br><br>- Know what is meant by a general-purpose computing system<br>- Know the difference between a computer and an embedded system<br>- Know the different types of computer and their uses<br>- Know how computers have developed over time<br>- Know that humans interact with computers through software<br>- Know different hardware components and their uses<br>- Know a variety of input and output devices and those that are combined into in device<br>- Know that all computing systems, regardless of form, have a similar structure ('architecture')<br>- Know how the hardware components used in computing systems work together in order to execute programs<br>- Know what an operating system is and its purpose<br>- Know what is meant by 'artificial intelligence' including some real-world examples |

| Year 8:<br>Mobile App<br>Development<br><br>**Explore object oriented, event driven programming to create a solution for a project while using computational thinking** | SKILLS:<br><br>● Be able to apply decomposition to break down a large problem into more manageable steps<br>● Be able to establish user needs by creating success criteria<br>● Be able to implement and customise GUI elements to meet the needs of the user<br>● Be able to recognise that events can control the flow of a program<br>● Be able to utilise user input in an event-driven programming environment<br>● Be able to utilise variables in an event-driven programming environment<br>● Be able to identify and fix common coding errors<br>● Be able to pass the value of a variable into an object<br>● Use a programming language (Javascript) to create a sequence<br>● Use a programming language (Javascript) to include sequencing and selection<br>● Use computational thinking to solve a problem to meet user need<br>● Evaluate the success of the programming project<br>● Respond to function and user testing |
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| | KNOWLEDGE:<br><br>● Know what is meant by decomposition and how it is applied<br>● Know what is meant by an object, event and a trigger<br>● Know what is meant by event-driven programming<br>● Know what is meant by object-oriented programming<br>● Know what is meant by a variable and their importance<br>● Know what is meant by testing and its importance<br>● Know the implications of a poorly tested application<br>● Know what is meant by user needs and success criteria<br>● Know what is meant by sequence, selection and iteration<br>● Know how programming constructs are executed in event-based programming |

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| Year 8: Developing for the Web<br><br>**Explore the technologies that make up the internet and World Wide Web** | SKILLS:<br><br>● Be able to describe what HTML is<br>● Be able to use HTML to structure static web pages<br>● Be able to modify HTML tags to improve the appearance of web pages<br>● Be able to display images within a web page<br>● Be able to apply HTML tags to construct a web page structure<br>● Be able to create hyperlinks to allow users to navigate between multiple web pages<br>● Implement navigation to complete a functioning website<br>● Be able to describe what CSS is and its purpose and benefits<br>● Be able to use CSS to style static web pages<br>● Be able to describe what a search engine is<br>● Be able to explain how search engines work and how they rank results<br>● Use search technologies effectively |
| | KNOWLEDGE:<br><br>● Know what HTML is and its purpose<br>● Know a variety of HTML tags to create components of a website<br>● Know how different digital devices read and display web languages<br>● Know how images and other media are displayed within a web page uses tags<br>● Know what CSS is, its benefits, and some common examples<br>● Know what a search engine is, some examples, how they work and rank results<br>● Know where websites are stored and how they are accessed<br>● Know what is meant by a web crawler e.g. Googlebot<br>● Know that search engines use an index and not search the entire web<br>● Know how to use search technologies effectively<br>● Know what is meant by navigation and how to implement it into webpage |

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| Year 8:<br>Media –<br>Digital<br>Graphics<br><br>**Explore the difference between vector and bitmap graphics and their uses.** | SKILLS:<br><br>● Be able to explain what vector graphics are<br>● Provide examples where using vector graphics would be appropriate<br>● Be able to explain what bitmap graphics are<br>● Provide examples where using bitmap graphics would be appropriate<br>● Be able to explain the difference between vectors and bitmaps<br>● Draw basic shapes with different properties<br>● Resize objects while maintaining proportions<br>● Manipulate individual objects<br>● Manipulate groups of objects<br>● Combine multiple tools and techniques to create a vector graphic design for a purpose<br>● Combine multiple tools and techniques to create a bitmap graphic design for a purpose |
| | KNOWLEDGE:<br><br>● Know what a bitmap and vector graphic are including some examples<br>● Know that bitmaps are made up from pixels<br>● Know the concept of layers when creating graphics<br>● Know that vector graphics are made up from paths<br>● Know what is meant by a gradient<br>● Know terminology such as fill, stroke, erase, duplicate<br>● Know the importance of maintaining proportions<br>● Know what is meant by transparency and opacity<br>● Know the difference between a vector and bitmap graphic and the uses of both<br>● Know a variety of tools in digital graphics and their uses |

| | SKILLS: |
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| Year 8: Data Representation<br><br>**Explore how all data is represented on a computer** | <ul><li>Be able to list examples of data representation</li><li>Be able to recall that characters can be represented as sequences of symbols</li><li>Be able to recall that characters can looked up in different character sets</li><li>Measure the length of a representation as the number of symbols that it contains</li><li>Explain what binary digits (bits) are, in terms of familiar symbols such as digits or letters</li><li>Measure the size or length of a sequence of bits as the number of binary digits that it contains</li><li>Convert a decimal number to binary</li><li>Convert a binary number to denary</li><li>Be able to rank data sizes in order</li><li>Be able to convert bits to bytes</li><li>Be able to explain why data is transmitted in bits and not bytes</li><li>Use the conversion process and the ASCII table to be able to convert binary to text</li><li>Be able to explain metadata with some examples</li><li>Be able to explain file types with some examples</li><li>Be able to draw the NOT, AND, and OR logic gates</li><li>Be able to give a real life use of the logical operators</li><li>Be able to Describe the NOT, AND, and OR logical operators</li><li>Be able to complete the truth tables for the 3 logic gates</li><li>Use logic gates to construct logic circuits, and associate these with logical operators and expressions</li><li>Be able to describe and apply some basic encryption methods</li></ul> |

KNOWLEDGE:

- Know that almost all real-world data can be stored digitally
- Know that we use the denary number system and there are 10 possible values
- Know that computers use the binary number system and there are 2 possible values
- Know how binary can be converted into denary and vice-versa
- Know how characters are stored in character sets such as ASCII, EXT ASCII and UNICODE
- Know the units of data in size order from bit to terabyte
- Know the relationship between bits and bytes and the conversion process
- Know that all data is transmitted in bits and stored in bytes
- Know what is meant by file types and how they are used
- Know what is meant by metadata and some specific example
- Know the NOT, AND, and OR logic gates symbols
- Know some real life uses of the logical operators
- Know the logic behind the NOT, AND, and OR logical operators
- Know the corresponding truth tables for each logic gate
- Know how logic gates can be combined to construct logic circuits
- Know the need for encryption and some basic methods of encryption

| Year 8: Introduction to Text Based Programming<br><br>**Explore text-based programming languages and algorithm thinking** | SKILLS:<br><br>● Be able to describe what algorithms and programs are and how they differ<br>● Be able to describe the translation process<br>● Be able to write simple Python programs that display messages, assign values to variables, and receive keyboard input<br>● Locate and correct common syntax errors<br>● Use simple arithmetic expressions in assignment statements to calculate values<br>● Receive input from the keyboard and convert it to a numerical value using casting<br>● Use relational operators to form logical expressions<br>● Use selection to control the flow of program execution<br>● Be able to generate and use random integers<br>● Use multi-branch selection (if, elif, else statements) to control the flow of program execution<br>● Be able to describe how iteration (while statements) controls the flow of program execution<br>● Use iteration to control the flow of program execution<br>● Use variables as counters in iterative programs<br>● Combine iteration and selection to control the flow of program execution<br>● Solve algorithm challenges |
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KNOWLEDGE:

- Know what algorithms and programs are and how they differ
- Know that code needs to be translated to be understood by the computer
- Know the syntax used to create simple programs
- Know what is meant by syntax
- Know the difference between a syntax and logic error
- Know some common syntax errors
- Know some common logic errors
- Know the basic arithmetic operators
- Know what is meant by casting and how it is applied to data types
- Know the logical operators and their uses
- Know what is meant by selection and how to apply it
- Know how to create random numbers
- Know how to use selection for multiple choices
- Know the different types of iteration and how they can be used
- Know how iteration and selection can control the flow of a program
- Know how to use counters to track changes of variables in a program

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| Year 9: Cybersecurity<br><br>**Study practices and preventions to the threats to data** | SKILLS:<br><br>- Be able to identify what happens to data entered online<br>- Be able to explain the main legislation relating to ICT security<br>- Be able to recognise how human errors pose security risks to data<br>- Be able to implement strategies to minimise the risk of data being compromised through human error<br>- Be able to define hacking in the context of cyber security<br>- Be able to explain how a DDoS attack can impact users of online services<br>- Be able to explain strategies to reduce the chance of a cyber-attack being successful<br>- Be able to list the common malware threats<br>- Be able to explain the impact of some cyber threats<br>- Be able to explain how malicious bots can have an impact on societal issues<br>- Be able to compare security threats against probability and the potential impact to organisations<br>- Be able to explain how networks can be protected from common security threats<br>- Be able to explain how you can prevent against data interception<br>- Be able to Identify the most effective methods to prevent cyberattacks |
| | KNOWLEDGE:<br><br>- Know where data is stored when working online<br>- Know the Data Protection Act and its principles<br>- Know the Computer Misuse Act and its principles<br>- Know the various risks caused by human error<br>- Know what is meant by social engineering<br>- Know some strategies that can reduce human error security risks<br>- Know what is meant by hacking and ethical hacking<br>- Know what is meant by a DDOS attack<br>- Know some strategies to reduce the risk of cyber attacks<br>- Know some common malware threats and their potential impact<br>- Be able to explain how you can prevent against data interception<br>- Know what is meant by bots and botnet |

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| | • Know the probability of certain cyber-attacks occurring<br>• Know some common preventions for cyber attacks |

| | SKILLS: |
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| Year 9: Data Science<br><br>**Study the transition between data and information and how visualisations give insights to help decision making.** | <ul><li>Be able to define what is meant by data science</li><li>Identify insights from a visualisation</li><li>Be able to explain how visualising data can help identify patterns and trends in order to help us gain insights</li><li>Use an appropriate software tool to visualise data sets and look for patterns or trends</li><li>Recognise examples of where large data sets are used in daily life</li><li>Select criteria and use data sets to investigate patterns</li><li>Define the terms 'correlation' and 'outliers' in relation to data trends</li><li>Describe the need for data cleansing and apply data cleansing methods</li><li>Solve a problem by implementing steps of the investigative cycle on a data set</li><li>Use the findings of an investigation to support a recommendation</li><li>Apply computational thinking techniques to combine with the use of data science</li><li>Apply data cleansing techniques to a data set</li><li>Apply sorting and filtering to a data set</li><li>Apply formatting techniques to a data set</li><li>Create Visualisations from a data set</li><li>Analyse visualisations to identify patterns, trends, and outliers</li><li>Draw conclusions and report findings from a data set</li></ul> |

| | KNOWLEDGE: |
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| | • Know what is meant by data science<br>• Know how to identify insights from a visualisation<br>• Know what is meant by 'correlation' and 'outliers' in relation to data trends<br>• Know examples of where large data sets are used in daily life<br>• Know real world uses of data science historical and present<br>• Know the need for data cleansing and know some common data cleansing methods<br>• Know some key real-world data and how it can be used to support decisions<br>• Know the difference between a visualisation and an infographic |

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| Year 9: Text Based Programming<br><br>**Be able to design, use, test and evaluate computer programs in a fully text-based language** | SKILLS:<br><br>• Write programs that display messages, receive keyboard input, and use simple arithmetic expressions in assignment statements<br>• Use selection (if-elif-else statements) to control the flow of program execution<br>• Create lists and access individual list items<br>• Perform common operations on lists or individual items<br>• Use iteration (while statements) to control the flow of program execution<br>• Perform common operations on strings or individual characters<br>• Use iteration (for statements) to iterate over list items<br>• Perform common operations on lists or strings<br>• Use iteration (for loops) to iterate over lists and strings<br>• Use variables to keep track of counts and sums<br>• Combine key programming language features to develop solutions to meaningful problems |
| | KNOWLEDGE:<br><br>• Know what is meant by selection and how it can control the flow of the program<br>• Know how to create lists of data and how to access items from a list<br>• Know some common operations on lists or individual items from a list<br>• Know what is meant by iteration and how it can control the flow of the program<br>• Know what is meant by string manipulation<br>• Know how to access parts of a string<br>• Know how to combine iteration to search through a list or a string<br>• Know how to use variables to keep track of counts and sums for an iterative program<br>• Know how key programming language features can be combined to develop solutions to meaningful problems |

| | SKILLS: |
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| Year 9:<br><br>Representations – Audio/Visual<br><br>**Focus on digital media such as images and sounds, and discover the science that lies beneath** | • Be able to describe how digital images are composed of individual elements called pixels<br>• Recall that the colour of each picture element is represented using a sequence of binary digits<br>• Be able to define key terms such as 'pixels', 'resolution', and 'colour depth'<br>• Describe how an image can be represented as a sequence of bits<br>• Describe how colour can be represented as a mixture of red, green, and blue<br>• Compute the representation size of a digital image<br>• Describe the trade-off between representation size and perceived quality for digital images<br>• Describe and assess the creative benefits and ethical drawbacks of digital manipulation<br>• Recall that sound is a wave<br>• Explain the function of microphones and speakers as components that capture and generate sound<br>• Define key terms such as 'sample', 'sampling frequency/rate', 'sample size'<br>• Describe how sounds are represented as sequences of bits<br>• Calculate representation size for a given digital sound, given its attributes<br>• Explain how attributes such as sampling frequency and sample size affect characteristics such as representation size and perceived quality, and the trade-offs involved<br>• Perform basic sound editing tasks using appropriate software<br>• Define 'compression', and describe why it is necessary |

| | KNOWLEDGE: |
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| | <ul><li>Know that images are made up from pixels</li><li>Know what each pixel has 3 colour values Red, Green and Blue</li><li>Know that each pixel has 24 bits (8 per channel) in modern imagery</li><li>Know what is meant by 'pixels', 'resolution', and 'colour depth'</li><li>Know the impact of changing the colour depth of a pixel</li><li>Know how to calculate the file size of an image</li><li>Know the impact of increasing resolution in terms of quality and file size</li><li>Know some ethical considerations of image manipulation (e.g. filters)</li><li>Know sound analogue sound is recorded as a wave</li><li>Know the function of microphones and speakers as components that capture and generate sound</li><li>Know the meaning of key terms such as 'sample', 'sampling frequency/rate', 'sample size'</li><li>Know how sounds is digitised using sound sampling</li><li>Know how to calculate the file size for a given digital sound, given its attributes</li><li>Know the impact of increasing the sampling rate of a sound file in terms of quality and file size</li><li>Know what is meant by 'compression', and why it is necessary in modern society</li></ul> |

| Year 9: Physical Computing<br><br>**Explore control technology and programming real-world devices** | SKILLS:<br><br>- Be able to describe what physical computing is<br>- List examples of input and output devices in terms of physical computing (sensors, motors)<br>- Use a development environment to write, execute, and debug a Python program for a physical device<br>- Write programs that use a physical device's built-in input and output devices<br>- Write programs that use a physical device to generate output and receive input<br>- Write programs that communicate with other devices by sending and receiving messages wirelessly<br>- Design a physical computing artefact purposefully, keeping in mind the problem at hand, the needs of the audience involved, and the available resources<br>- Decompose the functionality of a physical computing system into simpler features<br>- Implement a physical computing project, while following, revising, and refining the project plan |
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| | KNOWLEDGE:<br><br>- Know what is meant by physical computing<br>- Know a variety of input and output devices in terms of physical computing<br>- Know the benefits of using automated and programmed systems<br>- Know what is meant by decomposition and how it can be applied to a project<br>- Know some of the current uses of physical computing in the real world<br>- Know that different devices use different instruction sets<br>- Know that code needs to be translated for a physical device |

| Year 9:<br>Future<br>Technologies<br><br>**Explore current and emerging digital technology and the impact on the economy** | SKILLS:<br><br>• Be able to describe some modern and emerging technologies<br>• Be able to identify example uses of emerging technologies<br>• Be able to discuss positive and negative impacts of technology on the environment<br>• Be able to discuss some ethical and moral implications of the use of technology<br>• Be able to describe the basics of the economy and the stock market |
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| | KNOWLEDGE:<br><br>• Know the new and emerging technologies that are shaping the world<br>• Know different new health-based technologies<br>• Know exciting new technologies on the horizon<br>• Know some emerging technologies in the power and energy industries<br>• Know some of the environmental effects from technology and possible solutions<br>• Know some of the ethical and moral implication of digital technology<br>• Know how the economy works and how technology has affected it |