

	Algorithms & Coding <i>(Programming)</i>	Computers <i>(Hardware, Software & Networks)</i>	Handling Data <i>(Databases & Spreadsheets)</i>	AF4: Digital Literacy <i>(Digital media)</i>
	<ul style="list-style-type: none"> <input type="checkbox"/> Plan solutions using a structured notation (pseudo-code) that include selection, loops, and variables. <input type="checkbox"/> Use decomposition to plan sub solutions (procedures) <input type="checkbox"/> Use a text-based programming language such as Python or JavaScript to independently solve problems <input type="checkbox"/> Define, assign and use variables with the correct data type <input type="checkbox"/> Use if/else/else-if selection statements, demonstrating an understanding of the difference between if, else if, and else <input type="checkbox"/> Use iteration, including “for” and “while” <input type="checkbox"/> Can use standard libraries (import) <input type="checkbox"/> Can use a range of data types, operators and expressions (Boolean, True, ==, <=, !=, AND) <input type="checkbox"/> Implement simple procedures <input type="checkbox"/> Detect & correct syntax errors <input type="checkbox"/> Understand different tasks that are best completed by humans or computers <input type="checkbox"/> Recognise that different algorithms can solve the same problem 	<ul style="list-style-type: none"> <input type="checkbox"/> Understand the types and benefits of different Networks. <input type="checkbox"/> Recognise and understand the function of the main internal parts of a computer architecture <input type="checkbox"/> Understand data transmission between digital computers over networks (IP addressing and packet switching) <input type="checkbox"/> Identify the basic hardware of a Network <input type="checkbox"/> Plan and develop a basic solution involving Inputs and Outputs <input type="checkbox"/> Recognise different types of software: application, utility, OS etc <input type="checkbox"/> Be able to calculate with Binary numbers (add) <input type="checkbox"/> Recognise and understand why computers use binary to represent data <input type="checkbox"/> Understand how bit patterns are used to represent numbers and images <input type="checkbox"/> Work out the size of files in Mb, Kb <input type="checkbox"/> Be able to construct static web pages using HTML and CSS 	<ul style="list-style-type: none"> <input type="checkbox"/> Make choices about data types and use logical and appropriate structures to organise data. <input type="checkbox"/> Use spreadsheet functions such as IF Statements. <input type="checkbox"/> Use conditional formatting to display output data clearly. <input type="checkbox"/> Change variables and explain impact. <input type="checkbox"/> Create useful database queries, including multiple criteria and create reports in a flat file database. <input type="checkbox"/> Present data in a variety of graphical forms (infographic, pie chart, line graph, bar chart, scatter diagram) 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain design choices when designing for a particular purpose and user group/audience. <input type="checkbox"/> Make appropriate choices of digital tools and devices for particular tasks. <input type="checkbox"/> Consider different file types when exporting and saving work. <input type="checkbox"/> Use various tests to make judgements about reliability and validity of information. <input type="checkbox"/> Design criteria to evaluate solutions, identifying improvements and making refinements. <input type="checkbox"/> Recognise ethical issues around use of IT outside of school <input type="checkbox"/> Use technology safely, understanding and implementing ways to stay safe online.
	<ul style="list-style-type: none"> <input type="checkbox"/> Plan solutions using flow diagrams that include selection and iteration (loops) <input type="checkbox"/> Use a text-based programming language such as Python or JavaScript with guidance <input type="checkbox"/> Understand basic data types (text, numbers, date) <input type="checkbox"/> Use if/else selection statements in programs, demonstrating an understanding of the difference between if and else <input type="checkbox"/> Use post-tested loops such as “repeat – until” <input type="checkbox"/> Use pre-tested loops such as “while” <input type="checkbox"/> Use loops that use a variable and relational operators to govern termination (until i <= 3, while response != “n”) 	<ul style="list-style-type: none"> <input type="checkbox"/> Identify the internal and external components and describe their purpose <input type="checkbox"/> Understand the role of the Operating System. <input type="checkbox"/> Recognise the size of common file types <input type="checkbox"/> Know the difference between physical, wireless and mobile networks <input type="checkbox"/> Be able to convert Binary to Denary and vice-versa <input type="checkbox"/> Shows awareness of different internet protocols such as VOIP, SMTP (speaking, mail, video calls etc.) 	<ul style="list-style-type: none"> <input type="checkbox"/> Use sum/min/max/average formulas effectively. <input type="checkbox"/> Use single criteria searches to find information involving Boolean and relational operators (such as < = True) <input type="checkbox"/> Present data in a graphical form suited to purpose, ensuring labelling is adequate and appropriate. <input type="checkbox"/> Explore relationships between inputs and outputs in a spreadsheet model. <input type="checkbox"/> Use search engines effectively, and understand how results are selected. 	<ul style="list-style-type: none"> <input type="checkbox"/> Create digital content for a particular purpose and user group/audience. <input type="checkbox"/> Effectively search and select information and resources <input type="checkbox"/> Understand the benefits of collaboration using a computer network <input type="checkbox"/> Make judgements on usefulness of information sources. <input type="checkbox"/> Make improvements based on feedback/criteria and comments on success of solution. <input type="checkbox"/> Demonstrate responsible use of technologies, and know a range of ways to report concerns. <input type="checkbox"/> Understand risks (appropriate to age group) associated with electronic communication and make good suggestions for precautions.
	<ul style="list-style-type: none"> <input type="checkbox"/> Understand the distinction between “algorithm & Implementation”. <input type="checkbox"/> Plan/Design a simple algorithm (flow diagram) using loops/repetition and two way selection (Such as REPEAT and IF/ELSE, either on paper or using LOGO, Scratch, Yenka for example) <input type="checkbox"/> Use logical reasoning to predict outputs, showing awareness of inputs. <input type="checkbox"/> Use and assign variables with guidance <input type="checkbox"/> Implement a sequence of instructions to achieve a given goal using a programming environment (Scratch, LOGO or Python). <input type="checkbox"/> Detect and correct simple errors (debugging). 	<ul style="list-style-type: none"> <input type="checkbox"/> Understand what a Network is and the benefits of a Network <input type="checkbox"/> Understand the difference between the Internet and WWW <input type="checkbox"/> Shows awareness of different uses of the internet - (speaking, mail, video calls etc.) <input type="checkbox"/> Understand that computers can collect data from a range of sensors and inputs. <input type="checkbox"/> Know the distinction between hardware and software, and their roles in a computer system 	<ul style="list-style-type: none"> <input type="checkbox"/> Understand the difference between data and information. <input type="checkbox"/> Understand how sorting information can improve its usefulness <input type="checkbox"/> Apply sorts and filters to data in order to find information. <input type="checkbox"/> Use single criteria searches to find information <input type="checkbox"/> Present data in a graphical form. <input type="checkbox"/> Recognise different data types and their uses. <input type="checkbox"/> Use basic formula to perform calculations. 	<ul style="list-style-type: none"> <input type="checkbox"/> Combine the use of software packages and/or internet services. <input type="checkbox"/> Independently collect, organise and present data for a given purpose. <input type="checkbox"/> Refine work based on feedback. <input type="checkbox"/> Recognise what is acceptable and not acceptable behaviour when using technology and online services (permission for photos, inappropriate content) <input type="checkbox"/> Know a range of ways to report concerns

	<ul style="list-style-type: none"> <input type="checkbox"/> Understand that algorithms are implemented as programs. <input type="checkbox"/> Design a simple algorithm using selection (IF, either on paper Yenka for example) <input type="checkbox"/> Be able to check and change a simple program or sequence <input type="checkbox"/> Implement a simple algorithm or sequence of instructions using selection (if) to achieve a given goal using a programming environment (Scratch, LOGO, or Kodu). <input type="checkbox"/> Be able to make predictions about the behaviour of programs 	<ul style="list-style-type: none"> <input type="checkbox"/> to be able to classify devices as Inputs and Outputs <input type="checkbox"/> recognise the range of devices that can be considered a computer and identify key peripherals <input type="checkbox"/> Understand that programs/software specify the function of a computer (Mobiles, Laptop, Parking machine) 	<ul style="list-style-type: none"> <input type="checkbox"/> Recognise that data can be structured into tables to make it useful. <input type="checkbox"/> Recognise different types of data such as text & number, appreciate that programs work with different types of data. 	<ul style="list-style-type: none"> <input type="checkbox"/> Purposefully collect, organise and present information digitally using a variety of software, with a degree of independence. <input type="checkbox"/> Discuss, improve solutions based on feedback <input type="checkbox"/> Share experiences of their use of technology both inside and outside of school <input type="checkbox"/> Navigate the WWW and perform searches to collect digital content. <input type="checkbox"/> Know a range of ways to report unacceptable content/contacts
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