Key Stage 3: Computing Levels

	AF1: Planning, developing & evaluating	AF2: Handling data, sequencing information and modelling	AF3: Finding, using and communicating information
3	• Know how to plan a project using ICT effectively to solve a problem • Comment on the success of my work • Can make changes to my work to improve it • Describe how I use ICT at school and how it is used outside school • I can recognise similarities between storyboards of everyday activities	• Collect, store and retrieve data • Can use a sequence of instructions to control things • Can use ICT simulations or models e.g. Spreadsheets, to answer questions • Can develop and improve my instructions • Can plan a linear (non-branching) sequence of instructions	• Can identify and select appropriate information using straightforward searches • Can present information using text, images and other media e.g. sound • Can use digital communication to exchange ideas e.g. email • Can identify ways to keep safe when using ICT • Can present data in a systematic way
4	• Can plan and implement ICT solutions that combine and refine different forms of information • Can evaluate the quality and success of my solutions • Can explain how and why the use of ICT varies in and out of school • Can think through an algorithm and predict and outcome	• Can organise and process data for a purpose • Can devise and refine sequences of instructions • Can use models to explore relationships between inputs & outputs and explain how models work • Can understand the need for care and precision of syntax and typography in giving instructions • Can give instructions involving selection and repetition	• Can use appropriate search criteria to find relevant information and check its plausibility and usefulness • Can represent information in different forms suited to purpose • Can use ICT to communicate and collaborate, identifying some of the risks and acting to minimise them • Can represent data in a structured format suitable for processing
5	• Can plan and develop structured solutions to problems which use a combination of ICT tools and techniques • Can use criteria to evaluate the quality of solutions, identifying improvements to be made and refining work • Can identify limitations and benefits of using ICT both at school and elsewhere • Can partially decompose a problem into its sub problems and make use of notation to represent it	• Can use logical and appropriate structures to organise and process data • Can create precise and accurate sequences of instructions • Can change variables within models and explain the impact of changes • Can recognise similarities between simple problems and the commonality in the algorithms to solve them • Can give instructions involving selection and repetition	• Can take account of accuracy and potential bias when searching and selecting information • Can present information in a range of forms for specific purposes and familiar audiences • Can use ICT safely and responsibly • Can analyse and present an algorithm for a given task
6	• Can plan and develop solutions which sow efficiency and integration of ICT tools and techniques • Can use criteria and feedback to improve the effectiveness and efficiency of solutions • Can explore the impact of the use of ICT in work, leisure and home • Can recognise similarities in given simple problems and am able to produce a model which fits some aspects of these problems • Can design and use 2D data structures	• Can devise a data handling solution to test hypotheses that uses techniques to reduce input errors • Can create efficient sequences of instructions including the use of subroutines • Can test predications by varying rules in models and assess the validity of my conclusions • Can fully decompose a problem into its sub-problems and can make use of a notation to represent it • Can make use of procedures with parameters and functions returning values in their programs and am also able to manipulate 1 dimensional arrays	• Can use complex lines of enquiry efficiently to interrogate information • Can explain choices when presenting information for different purposes and wider or remote audiences • Can independently write and/or debug a short program • Can describe more complex algorithms, e.g. sorting or searching algorithms
7	• Can design and plan an ICT based system by showing how the information will flow through the system • Can devise and apply success criteria to ensure a quality solution, refining this work as it progresses • Can identify the advantages and limitations of the system • Can identify the impact of ICT on people, communities and cultures • Can recognise similarities in given more complex problems and are able to produce a model which fits some aspects of these problems • Can design and use complex data structures including relational databases • Can consider the benefits and limitations of programming tools and of the results they produce, and use these results to inform future judgements about the quality of programming	• Can select appropriate tools and techniques to implement an ICT system in which: • *Data flow is automated* • *Sequences of instructions are developed, tested and refined* • *Assumptions, variables and rules are identified* • Can fully decompose a problem into its sub-problems and can make error-free use of an appropriate notation to represent it • Can use pre-constructed modules of code to build a system • Can program in a text-based language, demonstrating the processes outlined above. Can document and demonstrate that work is maintainable. Can debug statements.	• Can develop an appropriate user interface for an ICT based system which: • *Enables efficient data input* • *Displays system outcomes that are fit for purpose and audience* • Can describe key algorithms, e.g. sorting/searching, parity and is aware of efficiency • Can analyse complex data structures, use them in programs and simplify them • Can select and use programming tools suited to work in a variety of contexts, translating specifications expressed in ordinary language into the form required by the system