



## QCA Scheme of Work for Key Stages 1 and 2

<b>Unit 1A</b>	An introduction to modelling
<b>Unit 1B</b>	Using a word bank
<b>Unit 1C</b>	The information around us
<b>Unit 1D</b>	Labelling and classifying
<b>Unit 1E</b>	Representing information graphically: pictograms
<b>Unit 1F</b>	Understanding instructions and making things happen
<b>Unit 2A</b>	Writing stories: communicating information using text
<b>Unit 2B</b>	Creating pictures
<b>Unit 2C</b>	Finding information
<b>Unit 2D</b>	Routes: controlling a floor turtle
<b>Unit 2E</b>	Questions and answers

<b>Unit 3A</b>	Combining text and graphics
<b>Unit 3B</b>	Manipulating sound
<b>Unit 3C</b>	Introduction to databases
<b>Unit 3D</b>	Exploring simulations
<b>Unit 3E</b>	E-mail
<b>Unit 4A</b>	Writing for different audiences
<b>Unit 4B</b>	Developing images using repeating patterns
<b>Unit 4C</b>	Branching databases
<b>Unit 4D</b>	Collecting and presenting information: questionnaires and pie charts
<b>Unit 4E</b>	Modelling effects on screen
<b>Unit 5A</b>	Graphical modelling
<b>Unit 5B</b>	Analysing data and asking questions: using complex searches
<b>Unit 5C</b>	Evaluating information, checking accuracy and questioning plausibility
<b>Unit 5D</b>	Introduction to spreadsheets
<b>Unit 5E</b>	Controlling devices
<b>Unit 5F</b>	Monitoring environmental conditions and changes
<b>Unit 6A</b>	Multimedia presentation
<b>Unit 6B</b>	Spreadsheet modelling
<b>Unit 6C</b>	Control and monitoring - What happens when...?
<b>Unit 6D</b>	Using the internet to search large databases and to interpret information



## Year 5 Expectations

<b>Unit 5A</b>	Graphical modelling	<p><i>most children will:</i> use an object-based graphics package to create, combine and manipulate objects and explore possibilities</p> <p><i>some children will have progressed further and will:</i> use an object-based graphics package to create and explore an accurate graphical model checking predictions and make decisions</p>
<b>Unit 5B</b>	Analysing data and asking questions: using complex searches	<p><i>most children will:</i> use 'AND', 'OR', '&lt;=' and '&gt;=' in their searches</p> <p><i>some children will have progressed further and will:</i> carry out complex searches to check hypotheses</p>
<b>Unit 5C</b>	Evaluating information, checking accuracy and questioning plausibility	<p><i>most children will:</i> interpret, check and question data; recognise that poor quality information leads to unreliable results</p> <p><i>some children will have progressed further and will:</i> interpret, check and question data; use logical inference to identify implausible and inaccurate data; recognise that poor quality information leads to unreliable results</p>
<b>Unit 5D</b>	Introduction to spreadsheets	<p><i>most children will:</i> use a spreadsheet to carry out calculations</p> <p><i>some children will have progressed further and will:</i> use a spreadsheet to carry out calculations; explore the effects of changing the data in a spreadsheet</p>
<b>Unit 5E</b>	Controlling devices	<p><i>most children will:</i> design and create a simple advertising display which produces a combination of events; write simple procedures and be able to link output devices together; amend their procedures to get a desired outcome</p> <p><i>some children will have progressed further and will:</i> design and create an imaginative advertising display which produces a combination of events; write, correct and improve procedures to link output devices together; realise the limitations of the system</p>
<b>Unit 5F</b>	Monitoring environmental conditions and changes	<p><i>most children will:</i> choose the appropriate sensor/s to monitor environmental conditions and changes and carry out experiments safely and independently</p> <p><i>some children will have progressed further and will:</i> understand when it might be appropriate to use a computer device for datalogging; select appropriate sensors and carry out the experiments safely and independently; draw simple conclusions from data</p>



## Year 6 Expectations

<b>Unit 6A</b>	Multimedia presentation	<p><b>most children will:</b> use a multimedia authoring program to organise, refine and present a set of linked multimedia pages, which incorporate images, sounds and text</p> <p><b>some children will have progressed further and will:</b> use a multimedia package to organise, refine and present a set of linked multimedia pages, which incorporate images, sounds and text; create pages which offer users a variety of options; present information that matches the needs of the audience</p>
<b>Unit 6B</b>	Spreadsheet modelling	<p><b>most children will:</b> explore the effects of changing data in a spreadsheet</p> <p><b>some children will have progressed further and will:</b> explore the effects of changing data in a spreadsheet; make predictions and use a spreadsheet to test them</p>
<b>Unit 6C</b>	Control and monitoring - What happens when...?	<p><b>most children will:</b> produce simple procedures to turn on lights and sound alarms; need help with their program and will need to make amendments</p> <p><b>some children will have progressed further and will:</b> produce procedures without difficulty; string procedures together; recognise patterns in programming; recognise the weaknesses of the system</p>
<b>Unit 6D</b>	Using the internet to search large databases and to interpret information	<p><b>most children will:</b> search the internet taking care when framing questions; understand when the information is valid and present it for a chosen audience</p> <p><b>some children will have progressed further and will:</b> search the internet using a range of operators to find a range of information; validate resources and check for bias in presenting to a specific audience</p>



## KS 3 ICT Sample Teaching Units – Year 7

Unit	Title	1	2	3	4	5	6	7	8
7-1	<b>Using ICT</b> (Launch, Communication: text and graphics)	Pupils create, refine and evaluate a presentation for a given purpose and audience. Pupils consider appropriate use of images, sound, fonts and colour. <i>Use of digital cameras, scanners, sound files, images, fonts and colour.</i>							
		Selecting and organising content for a presentation	Selecting and using appropriate images	Selecting and using appropriate fonts and colours	Selecting and using appropriate sounds	Modifying the style of a presentation for a different audience	Modifying the content of a presentation for a different audience		
7-2	<b>Using data and information sources</b> (Communication: sound and video)	Pupils identify the purposes of information and how to set up a survey sample. They explore the Internet as a source of information and learn how to narrow down a search. Finally, they learn how they can be misled by inaccurate or incomplete information and how to judge the reliability of a website. <i>Internet</i>							
		Matching information to purpose	Selecting sources and finding relevant information	Assessing the reliability of information					
7-3	<b>Making a leaflet</b> (Communication: text and graphics)	Pupils create a high quality leaflet to a common theme. Pupils consider common forms and conventions together with appropriateness for audience and purpose. <i>Digital cameras, scanners and image manipulation. Desktop publishing.</i>							
		Corporate image	Designing a leaflet	Creating a logo	Capturing images fit for a purpose	→	Creating a folded leaflet		
7-4	<b>Introduction to modelling and presenting numeric data</b> (Modelling)	Pupils use a spreadsheet to model the feasibility of running a school disco. They amend their model to include a range of potential variables. Conclusions are presented in a formal report. <i>Use of spreadsheets.</i>							
		Using a spreadsheet	Modelling using a spreadsheet	Using a spreadsheet to build a model	Refining and developing a model	Ways of presenting information from a spreadsheet			



Unit	Title	1	2	3	4	5	6	7	8
7-5	<b>Data handling</b> (Handling data)	Pupils design a questionnaire and data handling structure. They collect and enter data and test for errors. They sort and search the data and create graphs and charts. Pupils draw conclusions and check for plausibility. <i>Use of a flat file data structure and software for drawing charts and graphs.</i>							
		Evaluating and interrogating an existing data set	Presenting information in different formats to test hypotheses	Designing a questionnaire to collect data	Creating a questionnaire and designing a data handling file structure to answer a key question	Entering, checking and testing data	Drawing conclusions and selecting data to support them		
7-6	<b>Control and monitoring</b> (Control and monitoring)	Pupils develop a range of everyday systems. Some take in real data and use it to control a system, for example, a lighthouse, greenhouse, lock, etc. <i>Implementation and testing of the solution to a system design. Simulation of control and monitoring.</i>							
		Understanding control in everyday life	Using flowchart symbols and writing instructions	Using a sensor as a switch in a control model	Creating and testing control models	Creating an efficient system to monitor an event			



## KS 3 ICT Sample Teaching Units – Year 8

Unit	Title	1	2	3	4	5	6	7	8
8-1	<b>Public information systems</b> (Launch)	Pupils create a weather information system that uses live data. <i>Work with others to solve a problem. Make use of a range of information, paying attention to its characteristics and purpose.</i>							
		Revising datalogging, sensors and data representation	Using and displaying live data	Planning and creating a simple public information system	Automating processes in a simple information system	Meeting the needs of the user			
8-2	<b>Publishing on the web</b> (Communication: sound and video)	Pupils use web technology to design and create a virtual visit to a school. <i>Internet and web authoring software.</i>							
		Introducing the unit and a text mark-up language, HTML	Comparing methods of producing web pages	Planning the website structure	Introducing web page creation, structure and appearance	Designing and creating a front page for a section	Designing web pages	Creating more web pages	Completing and evaluation the project
8-3	<b>Information: reliability, validity and bias – unit overview</b> (Handling data)	Pupils explore the Internet as a source of information. They will consider the importance of evaluation the information they find in terms of reliability, validity and possible bias. Pupils will also consider the extent of the fitness for purpose of the information they find. <i>Working with a range of information to consider its characteristics, structure, organisation and purposes.</i>							
		Criteria for evaluating information	Using searches	Extending and refining search methods	Independent application of new learning: searching and evaluating				
8-4	<b>Models and presenting numeric data</b> (Modelling)	Pupils create and interrogate models for a given purpose, e.g. identifying the most suitable mobile phone tariffs for a given user profile. They will also consider the use of random numbers as test data. Finally pupils will consider the rules, variables and processes associated with some web-based models. <i>Use of spreadsheets and web-based simulations.</i>							
		Introducing the unit	Developing a new model	Using graphs to model with spreadsheets	Investigating models	Simulations and models			



Unit	Title	1	2	3	4	5	6	7	8
8-5	<b>An ICT system: Integrating applications to find solutions</b> <i>(Progression into and through Year 9)</i>	Pupils are given a range of opportunities to demonstrate their ICT capability across all four themes of the Framework. They will design and implement and test a system, which simulates aspects of a charity fund raising exercise including a control and monitoring activity. <i>Designing, implementation and testing of a system to solve a given problem. Exploration of a variety of information sources and ICT tools.</i>							
		Introduction to the unit: Feasibility study for a system	Modelling the finances	Developing the financial model	Using control systems to automate a process	Programming and testing the solution	Extending the control system	Marketing the product	Developing a marketing package
									Lesson 9: Producing the project report and analysis of the result



## KS 3 ICT Case Studies – Year 9

Unit	Title	1	2	3	4	5	6	7	8	9	10
9-1	<b>Explore ICT systems within the context of designing a new water ride in a theme park</b>	Pupils explore ICT systems within the context of designing a new water ride in a theme park.									
		Introducing and planning the project	Devising the theme park ride	Controlling the ride	Designing and programming the ride	Implementing and testing	Completing the system	Developing the system	Presentation		
9-2a	<b>Classes/Pupils linked remotely for the purpose of “Exchanging information and questionnaires”</b>	Pupils undertake a large project that involves linking remotely to other pupils for the purpose of 'Exchanging Information and questionnaires.									
		Introducing and planning the project	Developing a questionnaire	Refining and collating the questionnaire	Developing the project documentation	Planning the database structure	Entering data into the database and planning an enquiry	Carrying out the enquiry, developing and framing the query	Comparing findings, refining the enquiry and planning a presentation	Preparing a presentation	Presenting findings
9-3	<b>Systematically design a front-of-house ticketing system</b>	Pupils undertake a large project that will involve developing an ICT system for a school pantomime.									
		1	2	3	4	5	6	7			
		Planning the project	Input, process, output	Implementing the final seating plan	Random numbers, refining the financial or seating plan	Testing and refining the financial or seating plan	Further refinement and user documentation for the financial or seating plan	Common forms and conventions (logos) creating tickets			
		8	9	10	11	12	13	14			
		Refining the financial or seating plan in the light of user feed-back, implementation of ticket design	Publicity for the production, mail-merge and personalised letters	Implementing publicity	Preparing a presentation for the user features of a presentation	Preparing a presentation for the user	Presenting the solution to the user	Completing and compiling project documentation			