YEAR 5

May 2014

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Computer Science	Information Technology	Digital Literacy
Design programs that accomplish specific goals	**Select a variety of software to accomplish given goals**	**Understand the opportunities computer networks offer for communication**
Design solutions (algorithms) that use repetition and two-way selection i.e. if, then and else. Use diagrams to express solutions. Use logical reasoning to predict outputs, showing an awareness of inputs.	Begin to independently select, process and import images, video and sounds from a variety of sources to enhance presentations. (TM) Begin to use appropriate editing tools to ensure their work is clear and error free, e.g. spell checker, thesaurus, find and replace (TM) Use a variety of layouts, formatting, graphics and illustrations for different purposes or audiences. (TM) Recognise intended audience and suggest improvements to make their work more relevant to that audience. (TM) Choose appropriate tools and techniques for a given task, being able to justify and evaluate their choices. (IVA) Combine images, video and animations with other media e.g. text and sound. (IVA) Combine sounds/music with images, video and animations. (S) Develop consistency across a document, using the same styles of font, colour, size for headings, body text, etc. (TM) Make effective use of transitions and animations in presentations. (TM) Recognise the audience when designing and creating digital co.ntent.	Use different styles of language, layout and format of different electronic communications depending on the audience. (EC) Publish their work to a wider audience, e.g. class blogs, school website. (EC) Add e-mail addresses, group or distribution lists of contacts to an address book. (EC) Learn how to use the cc and bcc facilities when sending an email and discuss when these should be used. (EC) Understand the potential of information technology for collaboration when computers are networked.
Design and create programs		**Identify a range of ways to report concerns about content**
Create programs that implement algorithms to achieve given goals. Declare and assigns variables. Use post-tested loop e.g. 'until', and a sequence of selection statements in programs, including an if, then and else statement.		Demonstrate responsible use of technologies and online services, and know a range of ways to report concerns. Work together to outline common expectations in order to build a strong digital citizenship community. Sign pledge. Learn what spam is and the forms it takes. Identify strategies to deal with it.
Debug programs that accomplish specific goals		
Represent solutions using a structured notation. Can identify similarities and differences in situations and can use these to solve problems (pattern recognition).		
Use repetition in programs		
Understands that iteration is the repetition of a process such as s loop. Recognises that different algorithms exist for the same problem.		
Control or simulate physical systems		
Use logical reasoning to detect and correct errors in programs	**Select, use and combine internet services**	**Recognise acceptable/ unacceptable behaviour**
Design, write and debug modular programs using procedures. Know that a procedure can be used to hide the detail with sub- solution (procedural abstraction).	Independently, and with regard for safety, select and use appropriate communication tools to solve problems. (EC)	Independently, and with regard for safety, select and use appropriate communication tools to solve problems (EC) Send 'group' e-mails and be aware of the benefits and risks in 'replying to all'. (EC)
	Analyse information	
Understand how computer networks can provide multiple services, such as the World Wide Web	Check the reliability of data; identify and correct inaccuracies.	

	Begin to consider the effectiveness of key questions on search results and refine where necessary.(DR) Use strategies to verify the accuracy and reliability of information distinguishing between fact and opinion, e.g. cross checking with different websites or books. (DR) Choose the most appropriate search engine for a task, e.g. image search, search within a specific site or searching the wider Internet. (DR)	(DH) Search data according to more than one criterion. (DH) Design questions and perform complex searches using key words, to search a large pre-prepared database looking for relationships and patterns. (DH)	Recognise ethical issues surrounding the application of Information Technology beyond school. Learn to create secure passwords to protect information online. Learn the importance of citing all sources when they do research. How to write bibliographical citations for online sources. Learn how photos can be altered digitally. Advantages and disadvantages of doing this and how these images are perceived in the health and beauty industry.
YEAR 5	Appreciate how search results are selected Design questions and perform complex searches using key words, to search a large pre-prepared database looking for relationships and patterns. (DH) Understand how to effectively use search engines, and know how search results are selected, including that search engines use 'web crawler programs'.	Evaluate information Raise questions and translate them into search criteria that can be used to find answers to specific questions. (DH) Compare and understand the uses of different charts and graphs. Know that these are used for different purposes. (DH) Perform more complex searches for information e.g. using Boolean and relational operators. Analyse and evaluate data and information, and recognise that poor quality data leads to unreliable results, and inaccurate conclusions.	
	Solve problems by decomposing them into smaller parts Show an awareness of tasks best completed by humans or computers. Design solutions by decomposing a problem and creates a sub-solution for each of these parts (decomposition). Recognise that different solutions exist for the same problem. Begin to use selection in programs Begin to work with variables with increasing confidence Understand the difference between, and appropriately uses if and if, then and else statements. Use a variable and relational operators within a loop to govern termination. Design, write and debug modular programs using procedures. Know that a procedure can be used to hide the detail with sub- solution (procedural abstraction)	Collect data Independently use a datalogger both connected to a computer and also remotely. (DL) Use a range of sensors to capture and record data in the course of an investigation. (DL) Enter formulae, e.g. 'SUM' into a pre-prepared spreadsheet model to explore the effects of changing variables. (SSM) Identify and enter the correct formulae into cells. Make predictions of the outcome of changing variables. (SSM) Present data Select the most appropriate representation e.g. pie charts, line graphs to display and interrogate collected data. (DL) Construct, refine and interpret bar charts, scatter graphs, line graphs and pie charts. (DH)	

Key for Lancashire Progressions:	**TM** = Text & Multimedia	**IVA** = Images, Video & Animation	**S** = Sound	**EC** = Electronic Communication
DR = Digital Research	**DH** = Data Handling	**DL** = Data Logging	**LC** = Logo & Control	**SSM** = Simulations & Spreadsheet modelling