Computing
Progression in Skills at Fawkham CEP School

Programming

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1-6	Term 3 & Term 6	Term 3 & Term 6	Term 3 & Term 6	Term 3 & Term 6	Term 3 & Term 6	Term 3 & Term 6
-explore and interact with the environment using a range of equipment -recognise simple icons, buttons and shortcuts -use appropriate icons, button and shortcuts to complete an action -explore the functions of a simple programming tool (e.g. beebots) -begin to plan and test instructions with adult support	-create a simple series of instructions -plan and test instructions -record routes -understand forwards, backwards, up, down -put two instructions together to control a programmable device (e.g. beebots) -begin to understand an algorithm is a set of instructions to achieve a specific purpose -understand that we control computers by giving them instructions -understand that the order of instructions in an algorithm is important	-begin to understand input and output -predict the outcomes of a set of instructions -test and amend a set of instructions -predict the outcome of a simple program -write and test a simple program -use repeat commands -combine four directions commands to make increasingly more complex sequences -explain what happens when we change the order of commands -understand that instructions in an algorithm need to be in order, clear and unambiguous	-understand input and output -experiment with variables and control models -use 90 degree and 45 degree turns -give an on-screen robot directional instructions -draw regular shapes on screen using commands -write more complex programs leading to varying outcomes -debug errors to accomplish specific goal -decompose a problem into smaller steps	-make accurate predictions about the outcome of a program they have written -use repeat instructions to draw regular shapes using commands -understand repetition in programming is also called looping -experiment with variables to control models -make turns specifying degrees -give an on-screen robot specific directional instructions that takes them from x to y -debug errors in increasingly complex programs to accomplish specific goal -understand, identify and justify when to use	-write programs that have sequences and repetitions, including selection to produce a given outcome -explore 'What if?' questions by playing online games -combine sequences of instructions and procedures to turn devices on/off -use ICT program to control a number of events for an external device that is electrical/mechanical -design, write and debug their own computer control applications -debug errors in increasingly complex programs	-explain how an algorithm works -detect errors in a program and correct them -explore 'What if?' questions by planning different scenarios for controlled devices -produce complex flowcharts using IF statements -implement the use of input and output devices within flowcharts -plan a program which includes variables to produce a given outcome -solve problems using decomposition, tackling each part separately

		-use the word debug to correct mistakes in an algorithm -evaluate the success of an algorithm	-explain the order (**sequence**) of commands can effect the outcome -use logical reasoning to detect errors in program -identify different sequences can achieve the same outcome	'infinite' or 'count-controlled' loops -use logical reasoning to detect and correct errors in programs	-plan a solution to a problem using decomposition -use a condition in an *if…then…* statement to produce a given outcome -use logical reasoning to detect errors in increasingly complex programs	-explain that a variable has a name and a value -identify a variable in an existing program -use a variable in a conditional statement to control the flow of a program -independently explain algorithms using sequence, repetition, selection and variable

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Programming

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Term 1-6	Term 3 & Term 6	Term 3 & Term 6	Term 3 & Term 6	Term 3 & Term 6	Term 3 & Term 6	Term 3 & Term 6
N/A	**Greater Depth Skills:** -plan, test and evaluate a set of instructions	**Greater Depth Skills:** -appreciate and explain why some algorithms are more efficient than others	**Greater Depth Skills:** -use the repeat command in logo to create a pattern	**Greater Depth Skills:** -explain an algorithm in their own words, using sequence, repetition and selections	**Greater Depth Skills:** -give reasons for errors in programs and explain how they have corrected these	**Greater Depth Skills:** -check and refine a series of instructions

Computing
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Creating Content

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1-6	Term 2 & 5	Term 2 & 5	Term 2 & 5	Term 2 & 5	Term 2 & 5	Term 2 & 5
-use available applications and software to create simple, original content	-use digital technology to store and retrieve content -create original content using digital technology -create content (e.g. presentation, video, animation) in a small group and record the narration -identify and find keys in a keyboard -add and remove text using basic typing skills -begin to print, retrieve and edit work, with support -create drawing using a range of tools	-use the computer to create something useful -begin using multimedia within word documents -experiment with drawing tools, text, pictures and animation to create content (e.g. presentations, eBook, word) -identify and find keys on a keyboard with increasing confidence and speed -change font, style and size of text -save, print, retrieve and edit work independently -upload images or movies with support	-manipulate text, underline text, centre text, change font and size and save text to a folder -combine text, images and sounds (using copy and paste) and show awareness of audience -develop typing skills and identify keyboard shortcuts -search for an image, then copy and paste it into a document -copy and paste text into a document -use automatic spell checker to edit spellings -use editing software to manipulate media (e.g. crop, add effects) -copy graphics from a range of sources and paste into a desktop publishing program	-capture images using a range of devices and further manipulate them -use editing software to manipulate audio - select media to download, import or export -create a presentation that is aimed at a specific audience -insert media into a presentation -manipulate text, underline text, centre text, change font and size and save text to a folder -recognise images can be changed for different purposes -consider the impact of changes made on	-use a range of presentation applications -use technology (such as online presentations) to capture and share a range of sophisticated multimedia -explore the menu options and experiment with images -add special effects to alter the appearance of a graphic -add, remove, modify and combine objects to create a graphical drawing -recognised objects are layered and can be modified in groups -identify the features of a good video	-listen, download, produce and upload a variety of broadcast media -manipulate sound using audio editing software -select music from a variety of sources and incorporate it into presentations -develop simple film editing skills to present -save file as gif or I peg to make the file size smaller -present a film for a specific audience -plan a solution to a problem using decomposition -make a home page for a website that contains links to other pages -understand the need for a navigation path -create 3D graphical objects on a computer -alter the view of a 3D space

-explain why tools were chosen and used	-add and resize images -explain and begin to justify why tools were chosen and used	-use return to create paragraphs -change orientation of images -plan, review and improve an animation	the quality of the image -recognise recorded audio is stored as a file -edit and alter recorded audio -save and export an audio file -consider the results of editing choices made	-plan and produce a video using storyboard -consider the impact of changes made on the quality of the video -use bullets and numbering tools -download a document and save it to a computer	-confidently choose the correct page set up option when creating a document -confidently use text formatting tools, including heading and body text

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Creating Content

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1-6	Term 2 & 5	Term 2 & 5	Term 2 & 5	Term 2 & 5	Term 2 & 5	Term 2 & 5
N/A	**Greater Depth Skills:** -use digital technology to organise and edit content	**Greater Depth Skills:** -begin to show awareness of audience when creating content	**Greater Depth Skills:** -evaluate content against a given goal	**Greater Depth Skills:** -design and create content on a computer in response to a given goal, paying attention to the needs of the known audience	**Greater Depth Skills:** -evaluate content according to its effectiveness and impact on a target audience	**Greater Depth Skills:** -consider audience when editing film and justify choices - make a multimedia presentation that contains: sound; animation; video and buttons to navigate

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Data and Information

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1-6	Term 4	Term 4	Term 4	Term 4	Term 4	Term 4
-collect simple information using ICT	-label objects -identify that objects can be counted -count objects with the same properties -compare groups of objects -describe objects in different ways	-use a web page as a resource -find information on a website -recognise that objects can be counted and compared using tally charts -select objects by attribute and make comparisons -recognise objects can be represented as pictures -create a pictogram -explain that information can be presented using a computer	-find relevant information by browsing a menu -search for information in a single site -understand that search engines select pages according to keywords found in the content -identify object attributes needed to collect relevant data -create a branching database -identify objects using a branching database -compare information shown in a pictogram with a branching database -explain that data can be used to answer questions	-use a standard search engine to find information -understand that search engines rank pages according to relevance -use a search engine to find a specific website -use ICT to enter, order and sort information -collect data using a digital device -recognise that a sensor can be used as an input device for data collection -use a larger data set to find information -use a computer program to sort	-use filters to make more effective use of a standard search engine -understand that search engines use a cached copy of the crawled web to select and rank results -use complex searches using '+' "OR" "Find the phrase in the inverted commas" -compare the results of different searches -use a form to collect information -navigate a flat-file database -apply knowledge of a database to ask and answer real-world questions -design a structure for a flat-file database	-use a range of search engines appropriate to finding information that is required -understand that search engines rank pages based on the number of quality in-bound links -create simple formulae for a given purpose (excel) -identify questions that can be answered using data -create a spreadsheet for a purpose -apply a formula that can be used to produce calculated data -recognise data can be calculated using different operations -choose suitable ways to present data

				data by one attribute -export information and present data in a table and a graph	-choose tools to select and analyse data to answer questions -select an appropriate graph to visually compare data -choose a suitable way to present information	

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Data and Information

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1-6	Term 4	Term 4	Term 4	Term 4	Term 4	Term 4
N/A	**Greater Depth Skills:** -recognise that objects can be counted and compared using tally charts	**Greater Depth Skills:** -explain that data can be used to answer questions	**Greater Depth Skills:** -recognise the impact of keyword choice on search engine results	**Greater Depth Skills:** -compare the results of different searches	**Greater Depth Skills:** - compare the information provided on two tabbed websites looking for bias and perspectives	**Greater Depth Skills:** -evaluate results in comparison to the question asked

Computing
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Computing Systems and Networks

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1-6	Term 1	Term 1	Term 1	Term 1	Term 1	Term 1
-recognise and use simple keyboard commands -help adults operate equipment around the school, independently operating simple equipment	-identify technology -develop awareness and use of keyboard layout and use navigation skills appropriately -understand the appropriate vocabulary according to equipment available -recognise different forms of digital communication and their purposes -identify and evaluate the uses of a computer -identify a computer and its main parts	-begin to use a wider range of digital technologies and websites for a purpose -identify information technology in the home and beyond school -explain how information technology benefits us -recognise the uses and features of information technology -continue to practise mouse skills independently	-explain how a computer network can be used to share information -explore how digital devices can be connected -recognise the physical components of a network -explain how digital devices function	-identify the benefits of ICT to send messages and to communicate -describe how networks physically connect to other networks -recognise how network devices make up the internet -describe how content can be added and accessed on the World Wide Web -recognise how the content of the WWW is created and shared by people -describe the current limitations of World Wide Web media	-contribute to discussions online -conduct a video chat with people in another country or organisation -identify the difference between WWW and the internet -use ICT to collect, organise, evaluate, predict and present data -explain that computers can be connected together to form systems -recognise the role of computer systems in our lives -recognise how information is transferred over the internet -explain how sharing information online lets people in different places work together -contribute to a shared project online	-explain what the internet is and how it is used as a network -use a variety of software to accomplish given goals -continue to develop online searching skills to enhance online communication and collaboration

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Computing Systems and Networks

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1-6	Term 1	Term 1	Term 1	Term 1	Term 1	Term 1
N/A	**Greater Depth Skills:** -begin to use different forms of digital communication for a purpose	**Greater Depth Skills:** -identify the impact of using ICT to develop content online in comparison to offline	**Greater Depth Skills:** -identify the benefits of ICT to send messages and to communicate	**Greater Depth Skills:** -begin to give advice and support others when using the internet	**Greater Depth Skills:** -evaluate different ways of working together online	**Greater Depth Skills:** -evaluate the role of the internet in today's society

Computing
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Internet Safety

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1-6	Term 1-6	Term 1-6	Term 1-6	Term 1-6	Term 1-6	Term 1-6
-act if they find something they are unsure of online (including identifying people who can help)	-know that personal information should not be shared online -act if they find something they are unsure of (including identifying people who can help; minimising screen; online reporting using school system etc.) -understand how to communicate safely online -understand how to identify age appropriate content	-recognise advertising on websites and learn to ignore it -identify the difference between safe and unsafe sites -begin to evaluate websites and know that not everything on the internet is true -understand why it is important to communicate safely online -identify the difference between private and public information and how this could be seen and used by others -understand the need to develop an alias for some public online use	-recognise the difference between the work of others which has been copied (plagiarism) and restructuring and re-presenting materials -recognise that information on the internet may not be reliable -know how to respond if asked for personal information or feel unsafe about the content of a message -explain how to use e-mail safely, responsibly and respectfully -compare online and offline communication	-recognise that cyber bullying is unacceptable and explain the consequences -understand the need for caution when using an internet search for images -understand the need for rules to keep them safe when online -know how to identify and report an incident of cyber bullying -consider the difference between using online communication tools in school and at home -explain the concept of a digital footprint -understand and explain the use of passwords	-discuss positive and negative impacts of the use of ICT -understand the need to be critical evaluators of content (including images that have been altered) -understand that some websites have commercial interests -recognise the potential risks of using internet communicate tools (e.g. spam e-mails) -understand they should not publish other people's pictures without permission -use technology in ways which minimise risk -independently use communication tools to collaborate and communicate -reference information sources -use appropriate strategies for finding, evaluating and verifying information	-identify the potential risk of providing personal information -understand that some material on the internet is copyrighted -know how to deal with messages or content that may be malicious or inappropriate -understand security settings used in online environments to protect the user -understand the benefits of developing a 'nickname' for online use -know how to report any suspicions -know that content put online is extremely difficult to remove -create strong passwords and manage them so that they remain strong -identify the impact of media and stereotyping online -identify the benefits and risks of apps and the impact this can have

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Internet Safety

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1-6	Term 1-6	Term 1-6	Term 1-6	Term 1-6	Term 1-6	Term 1-6
N/A	**Greater Depth Skills:** -begin to identify positive and negative aspects of the internet	**Greater Depth Skills:** -consider when digital technology leads to improvements or has the potential to make things worse	**Greater Depth Skills:** -know how to distinguish between fact, fiction and opinion online -use strategies to verify information	**Greater Depth Skills:** -give detailed advice and guidance to others about the use of online technologies	**Greater Depth Skills:** -consider and evaluate the wider positive and negative impacts of altering media (such as photos)	**Greater Depth Skills:** -identify, critically evaluate and make comparisons between online behaviours (such as cyberbullying) and offline behaviours.