Subject Skills Progression: Subject: Computing

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| Subject: | Computing |
| **Skill / Knowledge** | **End of EYFS** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Computing Science / Programming** |  | • Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that an algorithm written for a computer is called a program• Children can work out what is wrong with a simple algorithm when the steps are out of order• When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. | • Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code.• Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors• Children can identify the parts of a program that respond to specific events and initiate specific actions. | • Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts.• Children can identify an error within their program that prevents it following the desired algorithm and then fix it.• Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. Children understand how variables can be used to store information while a program is executing.• In programs such as Logo, they can ‘read’ programs with several steps and predict the outcome accurately. | • Children understand ‘if statements’ for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs.• As well as understanding how variables can be used to store information while a program is executing, they are able to use and manipulate the value of variables. | • Children can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code. | • Children test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem.• Coding displays an improving understanding of variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks |
| Information Technology |  | • Children can name, save and retrieve their work and follow simple instructions to access online resources. | • Children demonstrate an ability to organise data using, for example, a database• Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound. | • Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails | • Children recognise the main component parts of hardware which allow computers to join and form a network• Children make informed software choices when presenting information and data. They create linked content using a range of software | • Children search with greater complexity for digital content when using a search engine. They are able to explain in some detail how credible a webpage is and the information it contains. | • Children compare a range of digital content sources and are able to rate them in terms of content quality and accuracy. Children use critical thinking skills in everyday use of online communication.• Children make clear connections to the audience when designing and creating digital content. The children design and create their own blogs to become a content creator on the internet. |
| Generic Skills | Children will: • be aware that pressing buttons will make a device respond eg remote control toy • use the mouse and the keyboard to explore programs • be aware that moving the mouse moves the pointer on the screen • be aware of the effect of pressing the mouse buttons • have experience of a range of ICT equipment and software • talk about what they are doing with ICT and use appropriate ICT vocabulary | Children will: •be able to print work using the Print icon • use both hands on the keyboard • load programs with support • know that work can be saved and retrieved • save work with support • retrieve work with support | Children will:• save work independently • retrieve work independently • plan what they are going to do • make simple modifications to their work (edit) • practise keyboard skills using both hands, try to use more than two fingers, and try to use the thumb on the spacebar. | Children will:• print work using the drop down menu • use Print Preview • make changes to their work (edit) • select items and use cut, copy and paste as necessary | Children will:• plan what they are going to do and evaluate the results • understand that work can be saved in different places eg network, USB stick • understand the use of folders and be able to create and name new folders  | Children will:•understand and use the hierarchical file system • consolidate keyboard skills -possibly using typing tutor software | Children will:•be able to choose and combine the use of appropriate ICT tools to complete a task • be able to critically evaluate the fitness for purpose of work as it progresses |
| Word Processing | Children will: • use the keyboard to enter letters strings (play writing) • begin to use the space bar to break letter strings into groups of letters • use the Back Space key to delete, use a wordbank or word list to enter text eg to match with pictures | Children will: • use upper and lower case • use the space bar • use the Return key • use the Shift key to make a capital letter | Children will: • change the font style • change the font size • change the font colour • print their work using the Print icon • use the cursor (arrow) keys for simple on screen editing | Children will: • select text and change the font style, size and colour • select text and use Bold and Underline icons • justify / align text • import graphics and add text • print using the menu • use print preview | Children will: • import graphics and use the Picture Toolbar to choose the text wrapping • use the spell checker • use find, search and replace if appropriate • use Page Setup to choose Portrait or Landscape page as appropriate • learn how to insert and use a simple table • use the zoom menu to view the whole page |  |  |
| Databases and Spreadsheets  | Children will: • do practical sorting activities and discuss sorting criteria • begin to develop simple classification skills | Children will: • develop simple classification skills based on practical sorting activities • with support, use simple data plotting/ graphing programs to produce pictograms and other simple graphs | Children will: • independently plot data as a pictogram, block chart or bar graph • be aware that graph types can be changed • interpret the graphs - discuss the graphs and answer simple questions use the search tools in a prepared database to answer simple questions. | Children will: • collect and enter data into a prepared database structure • use the search tools to answer simple questions relevant to an investigation • sort the data for a purpose• learn how to produce graphs from the data• with support, use a spreadsheet to record data and produce graphs | Children will: • prepare a data collection form • identify fields • create a datafile and enter data • use the database to carry out an investigation • present data in different forms – graphs, tables • amend errors• use a spreadsheet to record data and produce graphs • enter data in a prepared spreadsheet • select data to produce a graph | Children will: • carry out more complex searches on more complex prepared databases eg be able to answer complex questions such as – Did all the minibeasts in a particular habitat have the same diet? • use AND and OR in their searches • identify datahandling opportunities, set up a datafile and enter data • check for validity • be able to set up a spreadsheet with appropriate headings • be able to use a simple formula eg SUM • use a spreadsheet to investigate eg cost of foods / drinks. Which is the best value drink? | Children will: • use a more complex database to explore patterns and relationships in data eg In a minibeasts database - Is there a relationship between habitat and diet? • independently set up and use a datafile to carry out an investigation • amend and delete data from records • organise, refine and present information appropriate to the audience• be able to use formulae and functions in a spreadsheet • alter the format of a spreadsheet • change data to satisfy ‘What if’ queries |
| Digital Literacy |  | • Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.• Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash. | • Children can effectively retrieve relevant, purposeful digital content using a search engine.Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically | • Children can explain the negative implications of failure to keep passwords safe and secure. They understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as | • Children can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact. | • Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others. | • Children demonstrate the safe and respectful use of a range of different technologies and online services. They identify more discreet inappropriate behaviours through developing critical thinking, |