**Y6 Computing Whole School Progression of Knowledge and Skills**

**Digital Literacy, Online Safety and ICT**

**Computational Thinking**

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| **YEAR SIX** |
| **Vocabulary/Significant Knowledge** | **Communicating: Text and Images** | **Communicating: Multimedia** | **Understanding and Sharing Data** | **Programming A**What is an algorithm? | **Programming B**What is a program? |
| How do I use a computer to present information effectively? | What makes an excellent film? | Why do we use spreadsheets? | How do I build complex physical systems? | How do I design complex programs? |
| Design Raster Bitmap Vector File format | Sound Media Video File Edit Clip Script Record Play Stop Pause Media Trim Narration Sound effect Credits Wide shot Close up Mid shot Pan Zoom | Data Information Spreadsheet Chart Infographic Database Personal information Formula Cell Row Column Mode Median Mean Range | program algorithm variables repetition loops selection procedure subroutine to debug code sensor physical system input output decomposition, LED. | program algorithm sequence repetition decomposition selection variable procedure input output sprite to debug loops code operators |
| **Enquiry Questions** | Can you combine media to present information on a topic using a suitable tool?Can you define the purpose of your digital artefact and the audience?Can you define the success criteria for your chosen design and plan it out in detail? On completion, can you evaluate your artefact, test it out and refine accordingly? | What makes a good film? (Focus on different camera angles, camera work, content and storytelling)What kind of content affects the rating of a film?Can you practice using cameras and tripods to film steady footage of static and moving subjects?Can you practise editing video clips using trim and split clip tools?Can you plan out a film and create a storyboard?Can you write the script, assign roles, plan props and rehearse?Can you review film clips and reject any which are unsuitable? | How is media combined to present information effectively?How do we store raw data? What is a spreadsheet and why do we use them?What is the effect if we change the data in a spreadsheet?How are simple operations used in a formula?Can you find the mode and range, median and mean of a set of data? | What is a variable?Can you identify variables in a range of programmes?What other elements of the code do you recognise?What is a procedure?Can you create your own algorithm? | Can use sequence, repetition, selection, variables to create an algorithm?What makes a good computer game?What sort of content will affect the rating? |
| **Strand Skills** | Select, combine and remix a range of media to create original content. - Consider all steps of the design process when creating content (e.g. identify problem, plan, create, evaluate, share.) - Identify the most effective tools to present information for a specific purpose. - Explain the benefits of using technology to collaborate with others. - Evaluate existing digital content in terms of effectiveness and design. | - Recognise what a spreadsheet is and what it is used for. - Explain the difference between physical, mobile and wireless networks. - Use simple formulae in a spreadsheet to find out information from a set of data. - Collect data for a purpose and plan out a spreadsheet to present it effectively, using relevant formulae. - Produce graphs from data in a spreadsheet to answer a question. - Analyse and evaluate data and information in a spreadsheet, chart or database. - Recognise that poor quality data leads to unreliable results | - Design and program a physical computing system that uses sensors. - Recognise and use procedures (sub-routines) in programs. - Plan out a program in detail, including task, algorithm, code and execution level. - Explain common errors in programs and how to fix them. - Use nested selection statements in a program or algorithm effectively. - Combine a variable with relational operators (< = >) to determine when a program changes, e.g. if score > 5, say “well done”. - Recognise key concepts (sequence, selection, repetition and variables) in a range of languages and contexts |