**Computing at Mount Primary**

**Long Term Plan**

**Key Concepts**

**Code**

Involves developing an understanding of instructions, logic and sequences

**Connect**

Involves developing an understanding of how to safely connect with others

**Communicate**

Involves using apps to communicate one’s ideas.

**Collect**

Involves developing an understanding of databases and their uses.

**Topics**

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| **Year** | **Topic** | **Overview** | **rationale** |
| Year 1 | Programming | Understand programmable toys  Create and debug simple programs  Use logical reasoning to predict the behaviour of simple programs | Build upon UW in EYFS – recognising how technology is used  Make links with positional language in maths |
|  | eSafety | Use technology safely and respectfully  Know the importance of staying safe online | Links with PSHE and keeping ourselves safe  ESafety week |
|  | Design | Use technology purposefully to create, organise, store, manipulate and retrieve digital content | Recap using basic apps to draw and create  Explore how to create things digitally |
|  | Music Creator | Use technology purposefully to create, organise, store, manipulate and retrieve digital content  Create sampled music using code blocks | Make links with music curriculum  Compare music on apps with instruments |
| Year 2 | Recognises uses of IT | Recognise common uses of information technology beyond school.  Know and name the parts of a computer | Build upon KUW in EYFS – recognising how technology is used  Consider how technology is used in the local area |
|  | Animation | Understand that animation is a series of images played in order as a film to create motion  Create animations by using stop motion | Compare animation clips  Learn how to create a simple clip similar to ones they have watched |
|  | eSafety | Importance of keeping personal information private.  Know how to report concerns if you are worried or feel at risk.  Be aware of the dangers of posting personal information online  Know the importance of being responsible on the internet and the importance of showing respect for others. | Links with PSHE and keeping ourselves safe  ESafety week |
|  | Data handling | Know that data is a collection of information gathered by observation, questioning or measurement.  Know that a computer can be a very useful tool for making pictograms, bar charts, line graphs | Links with maths and science  Use skills from design topic in Year 1 |
|  | Programming | Predict the outcome of an algorithm before ‘running’ it  Understand that an algorithm uses multiple steps which are the same, they can simplify the algorithm by using a loop.  Understand that a loop in a computer program is an instruction that repeats | Build on Y1 Programming  Consider how programming will be used in real-life  Links to maths- positional language |
|  | EBook creator | Know that an EBook is a paperless way of presenting information and can be done using a variety of IT skills.  Know that an EBook can be edited using an app | Links with English – writing and editing skills  Understand how and why eBooks are used in real life  Develop using a range of apps |
| Year 3/ 4 Cycle A | Programming | Design, write and debug programs that accomplish specific goals  Use sequence, selection, and repetition in programs  Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs | Build on knowledge from KS1 programming  PSHE- resilience  Use algorithms to solve a problem |
|  | ESafety | Use technology safely, respectfully and responsibly  Recognise acceptable/unacceptable behaviour;  Identify a range of ways to report concerns about content and contact. | Links with PSHE and keeping ourselves safe  ESafety week |
|  | Comic creation | Be aware that comics are a medium used to express narratives or other ideas through images, usually combined with text  Know the different aspects of comic creation: scenes, backgrounds, characters, narration/speech bubbles, stickers.  Know that comics can be edited | Recap eBooks from KS1 curriculum  Links with English- writing and editing  Consider importance of technology and explore the different ways it can be used in life |
|  | Document editing and word processing | Use search technologies effectively  Know that documents can be created and edited using software on Google Docs and that they can combine a range of IT skills | Revisit eSafety topic and how to use search engines safely  Links with English- writing and editing  Recap skills from comic creation topic Y3/4 and eBooks in KS1 |
|  | Music creator | Know the music can be created on a computer  Understand that sound can be mixed | Build on skills taught in KS1 lessons  Links with science and music  Use apps to create own piece of music  Compare music created using the app and instruments |
| Year 3/ 4  Cycle B | Animation | Understand different ways of animating  Be aware of the special effects used in animation | Links with KS1 animation  Consider animations they have seen  Be aware of famous animators e.g. Walt Disney |
|  | Internet Research | know that the internet can be used to research things we want to find out. | Links with eSafety |
|  | ESafety | Understand what they can do if something upsets them or if they feel bullied and/or threatened.  Consider actions to take to stay safe online | Links with KS1 eSafety  Links with PSHE |
|  | EBook | Be aware of how to edit an eBook  Understand the features of an eBook | Build on KS1 eBook  Links with English- writing and editing |
|  | Programming | Know that computational thinking requires decomposition  Use code.org | Build on KS1 programming lessons |
|  | 3D Design | Use apps to create a design  Be aware that the app has different features | Consider how design is used in real-life  Links with DT lessons |
| Year 5/ 6 Cycle A | Data handling | Understand what a spreadsheet is and how it is used  Create a spreadsheet for a purpose, adding text, numbers and suitable cell sizes. | Build on skills from KS1 data handling topic  Use skills from maths/science lessons  Consider how spreadsheets are used in real-life |
|  | Understanding computer networks and the world wide web | Know that a computer network is a number of computers linked together to allow them to “talk” to each other and share resources.  Know that networked computers can share hardware, software and data. | Consider how technology is used in real-life  Consider careers that use these skills  Consider how technology has changed |
|  | ESafety | Learn that whatever we post online it can still be seen by anyone far into the future – this is our ‘digital footprint’.  Know that phishing is when people pretend to be a reputable person or company to get you to share your personal information with them.  Understand that cyberbullying can have an impact on people’s mental health and wellbeing. | Links with PSHE and keeping ourselves safe  ESafety week  Build on eSafety lessons from KS1 and LKS2 |
|  | Programming physical systems | Know how a Microbit works  Know that you can make different things using a Microbit |  |
|  | Programming | Know how to make algorithms more efficient.  Understand the importance of variables and functions | Build on programming from KS1 and LKS2  Consider careers where these skills are used |
| Year 5/ 6 Cycle B | HTML Web Programming | Know that HTML is a language used by computers that helps us to design and build web pages and websites.  Be aware of the key elements to build a webpage | Consider careers where these skills are used |
|  | Computers- Past, present and Future | Explore how computers have changed over the years | Build on EYFS and Y2 uses of technology  Links with History- how technology has changed |
|  | ESafety | Know that information can be searched in different ways  Be aware of fake news | Build on previous eSafety units  Links with PSHE lesson |
|  | Binary Code | Understand binary code and its importance  Know the features of binary code |  |
|  | Programming | Know what binary code is  Know that sequential steps and loops can help make algorithm more efficient  Know about variables, functions and parameter | Build on Binary code topic |