
# Computing Progression Framework (Intent)

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| **During Nursery and Reception planned opportunities and provision will enable children to…** | Through *Personal, Social and Emotional Development* pupils should remember rules without needing an adult to remind them; show resilience and perseverance in the face of a challenge; and know and talk about the different factors that support their overall health and wellbeing, such as sensible amounts of 'screen time'. During *Physical Development* pupils will be able to match their developing physical skills to tasks and activities in the setting; and develop their small motor skills so that they can use a range of tools competently, safely and confidently. In *Understanding the World* pupils will explore how things work and listen to a broad selection of stories non-fiction, rhymes and poems will foster their understanding of our ***technologically*** diverse world. | | |
| **ELG** | Personal, Social and Emotional Development | Managing Self | • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.<br>• Explain the reasons for rules, know right from wrong and try to behave accordingly |
| | Expressive Arts and Design | Creating with Materials | • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. |

*[Project Evolve]

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| **Reception [Kapow]** | • Children are able to practically follow instructions, through activities and games. They will begin to give simple instructions and follow instruction to complete a task. Pupils start to learn that an algorithm is a set of instructions to carry out a task in a given order.<br>• Children will experiment with programmimg a floor toy (Bee-Bot) and learn how to given simple commands. They will follow instructions and start to learn how to amend the instructions when things go wrong. | • Children are able to sort and categories objects. They will have experience of using branching databases and will begin to learn how to interpret a basic program. | • *Children are are to recognise ways in which the internet can be used to communicate.<br>• *Children can identify ways that they can put information on the internet<br>• *Children can describe ways that some people can be unkind online<br>• *Children can talk about how to use the internet as a way of finding information online<br>• *Children start to identify rules that help keep us safe and healthy when using technology | • Children are able to identify what a keyboard is and how to locate relevant keys. They will develop their mouse skills and start to develop an understanding of logging in and out of the Computer (including chromebook).<br>• Children start to explore different hardware and technology. They will have experience of taking photographs and exploring how we can re-visit photographs. |
| **KS1 [Purple Mash]** | **Computer Science** | **Information Technology** | **Digital Literacy (e-safety)** | **Digital Literacy (Technology in our lives)** |
| **Year 1 –**<br><br>**Emerging knowledge, skills and concepts** | • Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that a computer program turns an algorithm into code that the computer can understand.<br>• Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g. Colouring in a Bird activity. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code.<br><br>• 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, for example, interpret where the turtle in 2Go challenges will end up at the end of the program. | • Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count. | • 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.<br><br>• *Children start to recognise that there may be people online who could make someone feel sad, embassrssed or upset.<br>• *Children begin to give examples of when they should ask permission to do something online and explain why this is important<br>• *Children begin to realise that information can stay online and it can be copied<br>• *Children start to describe how to behave online in ways that do not upset others<br>• *Children start to understand how to find information using digital technologies<br>• *Children can explain rules to keep themselves safe when using technology | • 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 |


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| | • 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 | • Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple | • Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically such as posting work to the Purple | • Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the |
| **NC Attainment Targets Year 2 –**<br><br>**Expected by the end of KS1** | **Key stage 1** Pupils should be taught to:<br>• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions<br>• create and debug simple programs<br>• use logical reasoning to predict the behaviour of simple programs<br>• use technology purposefully to create, organise, store, manipulate and retrieve digital content<br>• recognise common uses of information technology beyond school<br>• use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. | | | |
| **SEND in computing** | Practical, experiential learning wherever possible to promote depth of understanding and engagement- Differentiation of equipment where required eg a child with significant challenges in motorskills may be given touch screen technology to access something others are accessing on chromebooks or an enlarged keyboard for visual impairment- - Pre-teaching (and regular revisiting) of target vocabulary- Complexity of instructional language used differentiated according to individual needs- Visuals to support all teaching eg demonstration of appropriate use of technology before expecting a child to enact something themself- Opportunities for free- expression and exploration to develop sense of self | | | |
| | | | • *Children explain simple guidance for using technology in different environments and settings. | |

## Computing Vocabulary List

| | Specific Vocabulary | | |
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| | **Computer Science** | **Information Technology** | **Digital Literacy** |
| **EYFS - Nursery** | instruction | information | Computer, ipad, tablet, technology, internet, website, safe, e-safety |
| **EYFS - Recpetion**<br><br>**[Kapow]** | [Unit 2 Programming 1: All about instructions]<br>Left, Right, Instructions, Two-part instructions, Order, Sequence, Next, Last, First<br><br>[Unit 4 Programming 2: Programming Bee-Bots]<br>Forward, Back, Backwards, Right, Left, Arrow, Direction, Turn, Program, Algorithm, Algorithm, Debug | [Unit 5 Data handling: Introduction to data]<br>Sort<br>Categorise, Category, Group, Pictogram, Graph, Column, Row, Square, Data | [Unit 1 Networks and systems 1: Using a computer]<br>Computer, Monitor, Keyboard, Mouse, Log in, Log out, Computer safety, Protect, Password, Private<br><br>[Unit 3 Computing systems and networks 2: Exploring hardware]<br>Mouse, Buttons, Keyboard, Keys, Technology, Power, USB stick, Electricity, Camera, iPad, Tablet<br><br>[Project Evolve] Communicate, technology, internet, online, information, unkind, mean, device (smart phone, tablet, game console), rules, safe |


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| **Year 1**<br><br>**[Purple Mash SoW]** | [Unit 1.2 Grouping & sorting]<br>criteria, describe, equal, groups, less than, more than, sort<br><br>[Unit 1.4 Lego Builders]<br>algorithm, code, computer, debugging, instructions, program<br><br>[Unit 1.5 Maze Explorers]<br>Algorithm, challenge, command, delete, direction, instruction, left and right, route, undo, unit<br><br>[1.7 Coding]<br>action, algrith, background, code, command, debug/debugging, event, execute, input, instructions, object, properties, output, run, sound, scale, scene, when clicked | [Unit 1.3 Pictograms]<br>Collect data, compare, data, pictogram, record results, title<br><br>[Unit 1.6 Animated Story Books]<br>Animation, background, clip-art gallery, e-book, edit, font, file, sound effect, text<br><br>[Unit 1.8 Spreadsheets]<br>Button, clip-art, cells, column, clipart, count tool, data, delete, image, lock tool, move cell, speak tool, spreadsheet, speak tool, rows, value | [Unit 1.1 Online Safety and Exploring Purple Mash]<br>Alert, avatar, button, device, file name, filter, home screen, icon, login, log out, icon, menu, my work area, menu, notification, password, private, purple mash tools, saving, search, username<br><br>[Unit 1.9 Technology Outside School]<br>Computer, technology<br><br>[Project Evolve] Trusted grown ups, permission, offline, online, shared information online, social media (Facebook, Instagram, Snapchat, TikTok), rules, safe, happy, healthy, choices |
| **Year 2** | [Unit 2.1 Coding]<br>action, algorithm, background, bug, button, click events, collision detection, command, debug/debugging, design mode, event, execute, implement, instructions, interaction, interval, object, output, properties, run | [Unit 2.3 Spreadsheet]<br>Block graph, cell, column, copy, count tool, data, drag, equals, equals tool, label, table, total, row, speak tool<br><br>[Unit 2.4 Questioning]<br>Binary tree, data, database, field, pictogram, question, record, search, sort<br><br>[Unit 2.6 Creating Pictures]<br>Art, fill, impressionism, palette, pointillism, style, surrealism<br><br>[Unit 2.7 Making Music]<br>Beat, compose, note, tune, sound effect, soundtrack, speed, tempo, volume<br><br>[Unit 2.8 Presenting Ideas]<br>e-book, fact file, fiction, mond map, node, non-fiction, presentation, quiz | [Unit 2.2 Online Safety]<br>Attachment, digital footprint, email, filter, internet, personal information, private information, search, secure, sharing<br><br>[Unit 2.5 Effective Searching]<br>Digital footprint, domain, internet, network, search engine, web address, web page, world wide web, web site<br><br>[Project Evolve] online, offline, physical appearance, avatar, profile picture, technology, communicate, apps, personal information, bullying, light teasing, behaviour, keywords, search engines, website, rules |


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| Spiritual | Moral | Social | Cultural | British Values |
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| By wondering at the power of the digital age – using the Internet.<br><br>Understanding the advanced and limitations of ICT. | By teaching the importance of Internet and online safety when working online using a variety of different platforms.<br><br>Ensuring the children have the knowledge and tools to report any instances of bullying, cyber-bullying and online safety issues.<br><br>Exploring the moral issues around data and sharing information. | By highlighting and teaching ways to stay safe when using online services and social media.<br><br>Teaching and discussing the different ways that the Internet has impacted on communication.<br><br>Preparing the children for the challenges of living and learning in a technologically enriched increasingly interconnected world.<br><br>Ensuring the children acknowledge advances in technology and appreciation for human achievement in a technological world.<br><br>Making clear the guidelines about the ethical use of the Internet and how we keep others and ourselves safe by discussing the moral and social implications of cyberbullying. | Providing the children the opportunity to learn about different cultures through the use of the Internet and online platforms – such as Newsround, Picture News and First News.<br><br>Providing the children opportunities to explore human achievements and creativity in relation to a worldwide communication platform.<br><br>Opportunities to develop a sense of awe and wonder at human ingenuity. | In computing we are learning to understand and be considerate to the views of other internet users. We understand that we are each part of the democracy of the internet and that we can each, in our own small way, affect the way the internet exists.<br><br>In computing we understand the use of rules on computers and the internet. We understand that rules are to keep others and ourselves safe and to help the internet to be an enjoyable and engaging place.<br><br>In computing we understand how to use our right to freedom of speech in a respectable and thoughtful way, being considerate of how this speech will affect others.<br><br>In computing we appreciate and understand the views of |

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| | | | | others, our right to challenge, question and discuss opinions and views, and to do this in a respectable and thoughtful way. We understand that as we are connected with the world while accessing the internet, we are exposed to the widest range of views, and we are learning to respect them.<br><br>In computing we understand that we are connected to people across the whole world. We understand that these are people from different communities, cultures, faiths and beliefs. We use the opportunities offered in computing to question, challenge and understand people with these different characteristics to support and develop our tolerance of them. |