

## Computing progression through the EYFS: Computational thinking

In the EYFS, pupils are taught computational thinking to build up a solid foundation of computing skills which can be applied when they move further up the school. The chart below shows how these concepts build.

|                                                                                                                                                                 | Nursery                                                                                                                     | Reception                                                                                                           | Progressing into Year 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| Concepts                                                                                                                                                        |                                                                                                                             |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|  <p>Logical Reasoning – anticipating and explaining</p>                        | <p>Have an understanding of sizes and spaces.</p> <p>Compare amounts, saying 'lots', 'more', 'same' and noting changes.</p> | <p>They are able to make their own decision, come up with their own ideas and try to involve other's ideas too.</p> | <p>Explaining different types of technology (computer, iPad, traffic lights, laptop, heating system).</p> <p>Locating the on switch of a desktop PC and explaining how to turn the computer on.</p> <p>Explaining and showing how the shift key creates a capital letter.</p> <p>Explaining and showing how the space key makes a space and backspace deletes text.</p> <p>Explain what I did to capture a digital photo</p> <p>Explain why a photo looks better in portrait or landscape format</p> <p>Explain what the pictogram shows</p> |
|  <p>Abstraction – working out what is important and ignoring what is not</p> | <p>To express their own thoughts and ideas with increasing confidence.</p>                                                  | <p>They are able to make their own decisions, come up with their own ideas and try to involve other's ideas.</p>    | <p>Working out when and how to debug programs.</p> <p>Working out where the font and size icons are and what they change font style and make it bigger or smaller. – making decisions.</p>                                                                                                                                                                                                                                                                                                                                                   |

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|  <p>Patterns – comparing, spotting, similarities and difference</p> | <p>Begin to talk about patterns around them (like stripes in rugs, all paper design etc)</p> <p>Begin to recognise and create ABABAB patterns</p>                                                                                                                                     | <p>Begin to recognise and create more complex patterns (colour, number, shapes).</p>                                                                                                                                                                                                                                                    | <p>Use a tools to create patterns and sequence to achieve a desired effect.</p> <p>Use the shape and line tools effectively</p>                                                                                                                                                                                                                                                                                                      |
|  <p>Algorithms – instructions and sequencing</p>                    | <p>Listen to and understand simple instructions and questions including who, what and where.</p> <p>Understand more complex instructions and sing a selection of songs and rhymes.</p> <p>Using copy and repeat to make up their own dances.</p> <p>Copying and following a beat.</p> | <p>Listens appropriately to instructions and use these accurately to complete tasks with increasing determinations, confidence and perseverance.</p> <p>Using copy and repeat actions and leading and following movements both individually and with a partner.</p> <p>Use accompanying instruments following the beat confidently.</p> | <p>Program a 'robot'</p> <p>Follow a set of simple instructions</p> <p>Use 4 commands in a sequence including forwards/backwards/left turn/right turn. -</p> <p>Know a series of instructions (usually on a computer) is called an Algorithm.</p> <p>Show that a series of commands can be joined together.</p> <p>Identify the effect of changing a value. -</p> <p>Explain that each sprite has a set of its own instructions.</p> |
|  <p>Decomposition – breaking problems down into steps</p>          | <p>Choosing and using the correct equipment for a chosen activity/ task.</p>                                                                                                                                                                                                          | <p>To persevere and begin to change and adapt ideas when things don't work.</p>                                                                                                                                                                                                                                                         | <p>Change the outcome of a sequence (steps) of commands</p> <p>Decide which blocks to use to meet the design and what to do if the blocks do not have te desired effect.</p> <p>Debug my program</p>                                                                                                                                                                                                                                 |
| <p>Approaches</p>                                                                                                                                    |                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                   | <p>Explore and experiment how things work.</p> <p>Explore and experience different materials and textures.</p> <p>Begin to make simple models.</p>                                                                                                                                    | <p>Begin to share ideas, resources and skills to collaboratively develop creations.</p>                                                                                                                                                                                                                                                 | <p>Use a mouse to click and drag</p> <p>Type my name on a computer</p> <p>Name the main parts of a computer</p> <p>Save my work to a file and open it again</p>                                                                                                                                                                                                                                                                      |

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| Tinkering – playing and exploring                                                                                                                    |                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                |                                                                                                                          |
|  <p>Creating – making things, checking things and fixing things</p> | <p>Uses their imagination and prior knowledge to build and adapt their role play, small play and model creations.</p>                                                                                                                                                                                              | <p>Choose and safely use the resources they need to make their creations and discuss them, explaining their choices and any further adaptations.</p>                                                                                           | <p>Record data in a tally chart<br/>Choose appropriate paint tools and colours<br/>Change the colour and brush sizes</p> |
|  <p>Collaboration – playing and working cooperatively</p>           | <p>Beginning to play alongside others, developing friendship and becoming increasingly more confident in social settings.<br/>To being to take turns in play activities with adult support and modelling.<br/>Play with other children confidently, extending play and beginning to think about other's ideas.</p> | <p>To independently take turns and share fairly whilst playing and working with others.<br/>To form positive and caring relationships showing empathy and to be able to play cooperatively considering other's ideas and feelings.</p>         | <p>Use pictograms to ask and answer simple questions about objects</p>                                                   |
|  <p>Persevering – not giving up</p>                                | <p>To make links between ideas and preserve when things get tricky.</p>                                                                                                                                                                                                                                            | <p>To have a 'have a go' attitude when approaching all new activities however tricky with increasing resilience.<br/>To confidently try new activities showing determination to complete a goal to show resilience when facing challenges.</p> | <p>Debug my program</p>                                                                                                  |
| E- Safety                                                                                                                                            | Interact with age-appropriate technology.                                                                                                                                                                                                                                                                          | <p>Stay safe online, learning through stories.<br/>Know that it is important to keep personal information private.</p>                                                                                                                         | <p>Recognise that there may be people online who could make me feel sad, embarrassed or upset.</p>                       |

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|  |  |  | <p>Know when I should ask an adult for help with things online that upset me.</p> <p>Describe what information I should not put online without asking a trusted adult first.</p> <p>Describe how to behave online in ways that do not upset others and can give examples.</p> <p>Understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke.</p> <p>Explain how passwords are used to protect information, accounts and devices.</p> <p>Say why it belongs to me (e.g. 'I designed it' or 'I filmed it').</p> |
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