## Statement of Intent

To give our children a high-quality computing education that will equip them in computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and will provide insights into both natural and artificial systems. The core of computing is computer science, in which the children will be taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Then building on this knowledge and understanding, the children will be equipped to use information technology to create programs, systems, a range of content and online safety to ensure that the children become competent in safely using, as well as understanding technology. Computing also ensures that the children become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

| Development Matters – children in Reception (non-statutory curriculum guidance for EYFS) | | KS1 National Curriculum Subject Content |
|---|---|---|
| Personal, Social & Emotional Development<br><br>• Show resilience and perseverance in the face of challenge<br>• Know and talk about the different factors that support their overall health and well-being.<br>• Increasingly follow rules, understanding why they are important.<br>• Remember rules without needing an adult to remind them.<br>• Select and use activities and resources, with help when needed.<br><br>Expressive Arts and Deign<br>• Explore, use and refine a variety of artistic effects to express their ideas and feelings. | | 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. |

| Technology in Our Lives | | |
|---|---|---|
| **Foundation Stage** | **Year 1** | **Year 2** |
| **Disciplinary Knowledge** | | |
| • Children can recognise purposes for using technology in school and at home. | • Children can identify technology.<br>• Children can identify a computer and its main parts.<br>• Children can use a mouse in different ways.<br>• Children can use a keyboard to type on a computer.<br>• Children can use the keyboard to edit text.<br>• Children can create rules for using technology responsibly. | • Children can recognise the common uses and features of information technology.<br>• Children can identify information technology in the home.<br>• Children can identify information technology beyond school.<br>• Children can explain how information technology benefits us.<br>• Children can show how to use information technology safely.<br>• Children can recognise that choices are made when using information technology. |
| **Substantive Knowledge** | | |
| • Children are beginning to know and understand that things they create belong to them and can be shared with others using technology. | • Children know how to use a mouse in different ways.<br>• Children know how to use a keyboard to type on a computer.<br>• Children know how to use the keyboard to edit text. | • Children Know how to use information technology safely.<br>• Children know how to make choices when using information technology. |
| **Vocabulary** | | |
| Technology<br>Share<br>Create<br>Internet | Information technology (IT)<br>Computer<br>barcode<br>scanner/scan | Information technology (IT)<br>computer<br>barcode<br>scanner/scan |

## Multimedia

| Foundation Stage | Year 1 | Year 2 |
|---|---|---|
| **Disciplinary Knowledge** | | |
| • Children can recognise text, images when using ICT.<br>• Children can use a camera to collect photos.<br>• Children can use paint programs to create pictures.<br>• Children can develop an interest in ICT by using age appropriate programs. | • Children can use technology to store and retrieve digital content.<br>• Children can use a computer to write.<br>• Children can add and remove text on a computer.<br>• Children can identify that the look of text can be changed on a computer.<br>• Children can make careful choices when changing text.<br>• Children can explain why they used the tools that they chose.<br>• Children can compare writing on a computer with writing on paper.<br>• Children can describe what different freehand tools do.<br>• Children can use the shape tool and the line tools.<br>• Children can make careful choices when painting a digital picture.<br>• Children can explain why they chose the tools they used.<br>• Children can purposefully create their own picture using the computer.<br>• Children can compare painting a picture on a computer and on paper. | • Children can use technology to store and retrieve digital content.<br>• Children can use a digital device to create a photograph.<br>• Children can make choices when taking a photograph.<br>• Children can describe what makes a good photograph<br>• Children can decide how photographs can be improved<br>• Children can use tools to change an image.<br>• Children can recognise that photos can be changed.<br>• Children can say how music can make us feel.<br>• Children can identify that there are patterns in music.<br>• Children can describe how music can be used in different ways.<br>• Children can show how music is made from a series of notes.<br>• Children can create music for a purpose.<br>• Children can review and refine our computer work. |
| **Substantive Knowledge** | | |
| • Children know how to use a touch-screen to rearrange objects and pictures on a screen. | • Children know how to use a computer on their own to paint a picture.<br>• Children know how to store and retrieve digital content. | • Children know how music can make them feel.<br>• Children are beginning to know how music is made from a series of notes.<br>• Children know how to review and refine our computer work.<br>• Children know how to store and retrieve digital content. |
| **Vocabulary** | | |
| Screen<br>Mouse<br>Images<br>Keyboard<br>Paint | Word processor, keyboard, mouse, keys, letters, numbers, space, backspace, text cursor, Microsoft Word, capital letters, toolbar, bold, italic, underline, select, font, undo,<br><br>paint program, tool, paintbrush, erase, fill, primary colours, shape tools, line tool, fill tool, undo tool, feelings, brush style, Pointillism, brush size, Pictures, painting, computers, like, prefer, dislike<br><br>Henri Matisse, Piet Mondrian, Wassily Kandinsky, Georges Seurat, | Device, camera, photograph, capture, image, digital, Landscape, portrait, Framing, subject, compose, Light sources, flash, focus, background, Editing, filter, Format, framing, lighting,<br><br>Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, Pattern, rhythm, pulse, Neptune, pitch, tempo, rhythm, notes, instrument, Create, emotion, pitch, pulse/beat, tempo, instrument, rhythm, notes, Open, edit |

| Programming | | |
|---|---|---|
| **Foundation Stage** | **Year 1** | **Year 2** |
| **Disciplinary Knowledge** | | |
| • Children can operate equipment around the school, independently operating simple equipment.<br>• Children can explore options and make choices with toys, software | • Children can explain what a given command will do.<br>• Children can act out a given word.<br>• Children can combine forwards and backwards commands to make a sequence.<br>• Children can combine four direction commands to make sequences.<br>• Children can plan a simple program.<br>• Children can find more than one solution to a problem.<br>• Children can choose a command for a given purpose.<br>• Children can show that a series of commands can be joined together.<br>• Children can identify the effect of changing a value.<br>• Children can explain that each sprite has its own instructions.<br>• Children can design the parts of a project.<br>• Children can use their algorithm to create a program. | • Children can describe a series of instructions as a sequence.<br>• Children can explain what happens when we change the order of instructions.<br>• Children can use logical reasoning to predict the outcome of a program (series of commands).<br>• Children can explain that programming projects can have code and artwork.<br>• Children can design an algorithm.<br>• Children can create and debug a program that they have written.<br>• Children can explain that a sequence of commands has a start.<br>• Children can explain that a sequence of commands has an outcome.<br>• Children can create a program using a given design.<br>• Children can change a given design.<br>• Children can create a program using their own design<br>• Children can decide how their project can be improved. |
| **Substantive Knowledge** | | |
| • Children know how to use simple software to make things happen.<br>• Children know how to press buttons on a floor robot and talk about the movements. | • Children know what an algorithm is.<br>• Children know how algorithms are implemented as programs on digital devices.<br>• Children know how to act out a given word.<br>• Children know how to combine four direction commands to make sequences.<br>• Children know how to plan a simple program.<br>• Children know how to design the parts of a project. | • Children know how algorithms are implemented by following precise and unambiguous instructions.<br>• Children know how to create a program using a given design. |
| **Vocabulary** | | |
| Equipment<br>Buttons<br>Movement | Forwards, backwards, Left, right, turn, clear, go, commands, Plan, Route, Instructions, directions<br>ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, Block, joining, command, start block, run, program, programming area, background, delete, reset, algorithm, predict, Effect, change, value, block Instructions, sprite, delete, program, algorithm Sprite, background, appropriate, algorithm, Sprite, design, programming blocks, algorithm, programs | Instruction, sequence, clear, order, unambiguous, algorithm, program, Artwork, design, route, mat, Sprite, design, programming blocks, algorithm, programs<br><br>command, run, start, outcome, predict, blocks, Sprite, design, sequence, Actions, sequence, modify, change, build, match, Compare, debug, debugging, program, features, evaluate |

| Data Handling | | |
|---|---|---|
| **Foundation Stage** | **Year 1** | **Year 2** |
| **Disciplinary Knowledge** | | |
| | • Children can organise and label objects.<br>• Children can identify that objects can be counted.<br>• Children can describe objects in different ways.<br>• Children can count objects with the same properties.<br>• Children can compare groups of objects.<br>• Children can answer questions about groups of objects. | • Children can recognise that we can count and compare objects using tally charts.<br>• Children can recognise that objects can be represented as pictures.<br>• Children can create a pictogram.<br>• Children can select objects by attribute and make comparisons.<br>• Children can recognise that people can be described by attributes.<br>• Children can explain that we can organise and present information using a computer. |
| **Substantive Knowledge** | | |
| | • Children know how to label objects.<br>• Children know how to describe objects in different ways. | • Children know how to create a pictogram. |
| **Vocabulary** | | |
| | Object, label, group, search, image, colour, size, shape, property, value, label, colour, data set, more, less, most, least, fewest, the same | More than, less than, most, least, organise, data, object, tally chart, votes, total |

# <u>Online Safety … coming soon to website</u>