Intent:

At Loxwood, our children build the knowledge required to successfully navigate themselves through a constantly advancing digital era.

Our children will:

* Become safe and responsible members of the digital community, including learning the appropriate use of social media, and understand and value appropriate internet use.
* Develop digital literacy including online safe, inspired and confident children.
* Have a broad, deep understanding of computing and how it links to children’s lives.
* Apply the fundamental principles and concepts of computer science.

We understand the diverse needs of our school community and strive for all pupils to be given the same experience (cultural capital). At Loxwood, we ensure our children receive a variety of opportunities for consolidation, challenge and variety. They develop analytical problem-solving skills and learn to evaluate and apply information technology. It also enables them to become responsible, competent, confident and creative users of information technology.

In Computing, we incorporate our core values (**Resilience, Collaboration, Curiosity, Creativity and Kindness**) to ensure that our children develop as **life-long learners and responsible citizens**. Through Quality First Teaching and having high expectations, we ensure all children (including disadvantaged and SEND) are accessing the curriculum by constantly reviewing and adapting teaching.

Implementation:

We have a coherent and sequenced curriculum building progression of knowledge and skills every year. EYFS have their own topic cycle but work alongside Key Stage 1.  The rest of the school work in pairs – Year 1 and Year 2, Year 3 and Year 4 and then Year 5 and Year 6 and follow a two-year topic cycle.  These year groups plan together weekly. Through the sequence of lessons, we intend to inspire pupils to develop a love of the digital world, and see its place in their future. At Loxwood, we ensure our teachers are confident in delivering Quality First Teaching to all our pupils; including lesson plans and resources that enable children to build on prior knowledge at the same time as introducing new skills and challenges. Where appropriate, cross-curricular links are used to support other areas of learning including our three whole school themes Discover, Explore and Create.

In the Early Years, we prepare the children with the foundation of knowledge and skills when using multimedia and technology. In KS1, the focus is on developing algorithms, programming and how technology can be used safely and purposefully. In KS2, lessons still focus on algorithms, programming and coding but in a more complex way and for different purposes. In addition, children develop their knowledge of computing networks, internet services and the safe and purposeful use of the internet and technology. Data handling is featured more heavily in UKS2. Skills learnt through KS1 and LKS2 are used to support data presentation.

Impact:

At Loxwood, learning in Computing will be meaningful, provide awe and use real-life and first hand experiences wherever possible so that children can make meaningful connections. Teachers will have high expectations and quality evidence will be presented in a variety of forms. Children will use digital and technological vocabulary accurately, alongside a progression in their technical skills. They will be confident using a range of hardware and software and will produce high-quality purposeful products. Children will see the digital world as part of their world, extending beyond school, and understanding that they have choices to make. They will be confident and respectful citizens going on to lead happy and healthy digital lives.

**Computing Whole School Topic Overview**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Cycle A (2022-2023)** | | | | | | **Cycle B (2023-2024)** | | | | | |
|  | **Autumn** | | **Spring** | | **Summer** | | **Autumn** | | **Spring** | | **Summer** | |
| EYFS | **This is Me!** | **Night and Day** | **Traditional tales** | **People who help us** | **Growing** | **Moving on, journeys and adventures** | **This is Me!** | **Night and Day** | **Traditional tales** | **People who help us** | **Growing** | **Moving on, journeys and adventures** |
| Year  1 & 2 | **Online Safety**  **Computing Skills (Y1)**  **Presentation skills (Y2)**  **(Multimedia)** | | **Beebots (Y1)**  **(Coding and Programming)**  **Turtle Logo and Scratch (Y2) (Coding and Programming)** | | **Digital Painting (YR1)**  **Computer Art (Y2)** | | **Online Safety**  **Basic ICT Skills (Y1)**  **Presentation skills (Y2)**  **(Multimedia)** | | **Beebots (Y1)**  **(Coding and Programming)**  **Turtle Logo and Scratch (Y2) (Coding and Programming)** | | **Computer Art**  **(Multimedia)**  **Hal Lasko**  **Technology in our lives.** | |
| Year  3 & 4 | **Online Safety**  **(Y3 & Y4 separate)** | | **Coding**  **Turtle Logo & Scratch (Y3)**  **Scratch (Y4)** | | **Using & Applying**  **To use soft wear to create a presentation about school (Y3)**  **Using & Applying**  **To use soft wear to design a cartoon story (Y4)** | | **Online safety**  **(Y3 & Y4 separate)**  **Online Searchers & Surfers (Y3)**  **Communication & Collaboration (Y4)** | | **Scratch Learning loops (Y3)**  **Animation (Y4)** | | **Drawing & Desktop Publishing (Y3)**  **Coding Turtle Logo (Y4)** | |
| Year  5 & 6 | **Online Safety** | | **Scratch Developing Games (Y5) Animated Stories (Y6)** | | **Radio (Y5) Film Making (Y6)** | | **Online Safety   3D Modelling: Sketch up** | | **Scratch  Developing Games (Y5) Animated Stories (Y6)** | | **Using and Applying** | |

**Progression in Computing:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | EYFS | Year 1 &2 | Year 3 & 4 | Year 5 & 6 |
| Multimedia | Understanding the World (UW) -Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension  Understanding the world:  Technology:  • Can create content such as a video recording, stories, and/or draw a picture on screen  • Develops digital literacy skills by being able to access, understand and interact with a range of technologies  • Can use the internet with adult supervision to find and retrieve information of interest to them  Children will:   * Use the interactive white board to play games and use software that supports other areas of learning. * Children will use Ipads to take photos and listen to stories.   Ipad, tablet, interactive white board, pen, mouse, remote control, screen  There is no Early Learning Goal for Computing | Children begin to understand the particular purposes technology can be used for and that by adding text and images you can communicate with technology. Children develop their skills in typing, selecting tools and organising information.  Children use technology purposefully to create, organise, store, manipulate and retrieve digital content.   * use applications and devices in order to communicate ideas, work, messages and demonstrate control; * save, retrieve and organise work;   Use key vocabulary to demonstrate knowledge and understanding in this strand: paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present.  Digital Painting  By the end of ear 1, children will know how to:   * use painting software to create a picture using a variety of brushes and colour * draw shapes using painting software * fill a shape with colour * erase and undo actions to change a digital painting * add text to a digital painting * use painting software to paint a self-portrait.   Computer Art   * create computer art * usea range of tools ina computer program to reproduce a style of art * make and edit shapes to create a piece of art * change the shade of colour for effect * retrieve a file to edit in a computer program * use a range of skills to create a piece of art | Understand computer networks, including the internet; how they can provide multiple services, such as the world wide web, and the opportunities they offer for communication and collaboration. They select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.   * create different effects with different technological tools, demonstrating control; * use appropriate keyboard commands to amend text on  a device; * use applications and devices in order to communicate ideas, work, and messages; * save, retrieve and evaluate work, making amendments;   **Branching Story:**  By the end of Year 3 children will know how to:   * plan a branching story. * create slide templates and organise slides with hyperlinks. * add theme, transitions and animation to a presentation. * use action settings. * insert audio and video. * evaluate slide layout and make improvements.   **Animation:**  By the end of Year 4 children will know how to:   * describe early forms of animation before computers and how computers have made a difference * create a short computer animation using one or more moving stick figures. * create a recorded animation involving a number of moving characters on a background * structure specific timing of animations using a time slider. * use a camera to create a short stop motion animation film. * analyse and evaluate software.   draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck. | Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals  • Select, use and combine the appropriate technology tools to create effects that will have an impact on others.  • Talk about audience, atmosphere and structure when planning a particular outcome.  • Confidently identify the potential of unfamiliar technology to increase creativity.  **Radio Station**  By the end of Year 5, children will know how to:   * use software to create my own sounds by recording editing and playing * combine audio effects to create an original radio jingle * research and plan digital content for a radio podcast * use software to create and present digital content for a radio podcast * design and record a persuasive radio advert for a product or service * present and evaluate audio content   **Film Making**  By the end of Year 6, children will know how to:   * use appropriate software and other tools effectively to write a film script * locate and check appropriate digital content and provide accurate crediting of sources * use digital recording devices to film and import into video editing software * plan, conduct and import video interviews as part of a short film * use video editing software to create a short film * use video editing software to turn a film project into a finished movie and present it.   audio, record, edit, play stop, skip, waveform, input, output, record, edit, play podcast, digital content, downloadable, backing track, voiceover, mute, gain, production, post-production, documentary, project, evaluation, screening, ceremony, upload. |
| Handling Data | Understanding the World (UW) -Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension  Understanding the World:  Technology   * Can create content such as a video recording, stories, and/or draw a picture on screen   Children will:   * Develop their understanding of different computing software and how to use them   Paint, colour, brush, tools, keyboards, keys, mouse, click, button, double click.  There is no Early Learning Goal for Computing | Use technology purposefully to create, organise, store and manipulate and retrieve digital content. Use technology safely and respectfully.  **Presentation Skills**  By the end of Year 2, children will know how to:   * use basic computer skills * use a folder * organise ideas for a presentation * create a simple presentation with text * add and format an image * reorder slides and present a presentation * search and print * add text strings, text boxes and show and hide objects and images, manipulating the features;   folder, organise, presentation, reorder, slides, search, print, PowerPoint | Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.  In Year 3 and Year 4 children will know how to:   * talk about the different ways data can be organised; * sort and organize information to use in other ways; * search a ready-made database to answer questions;   Google Docs, insert, table. | Pupils should be taught to select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information  By the end of Year 5, children will know how to:  • construct data on the most appropriate application;  • know how to interpret data, including spotting inaccurate data and comparing data;  By the end of Year 6, children will know how to:  • use keyboard shortcuts and functions to input data on spreadsheets and create formulas for spreadsheets;  • add data to an existing database;  Google Docs, insert, table, spreadsheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending. |
| Technology in Our Lives | Understanding the World (UW) -Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension  Understanding the World:  Technology   * Completes a simple program on electronic devices * Uses ICT hardware to interact with age appropriate computer software * Develops digital literacy skills by being able to access, understand and interact with a range of Technologies   Children will:   * Use the interactive white board to play games and use software that supports other areas of learning. * Children will use Ipads to take photos and listen to stories   Paint, colour, brush, tools, keyboards, keys, mouse, click, button, double click.  There is no Early Learning Goal for Computing | Children begin to make links to how they use technology outside of the classroom. They begin to think about the benefits of using technology in their lives, making links to learning about online safety.  Children recognise common uses of technology beyond school. They use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.  By the end of Year 1, children will know how to:   * use links to websites to find information; * recognise age-appropriate websites;   By the end of Year 2, children will know how to:   * use safe search filters; * recognise ways that technology is used in the home and community, e.g. taking photos, blogs, shopping;   Use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure. | Understand computer networks, including the internet; how they can provide multiple services, such as the world wide web, and the opportunities they offer for communication and collaboration. They use search technologies effectively, appreciate how results are selected and ranked, and are discerning in evaluating digital content.  End of Year 3 children know how to:   * explain ways to communicate with others online; * describe the world wide web as the part of the internet that contains websites; * add websites to a favourites list;   End of Year 4 children will know how to:   * use search tools to find and use an appropriate website and content; * use strategies to improve results when searching online;   filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media. | Pupils should be taught to understand computer networks; how they can provide multiple services, such as the world wide web; and opportunities they offer for communication & collaboration. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content  By the end of Year 5, children will know how to:  • Describe different parts of the internet.  • Use different online communication tools for different purposes.  • Use a search engine to find appropriate information and check its reliability.  • Recognise and evaluate different types of information I find on the World Wide Web.  • Describe the different parts of a webpage.  • Find out who the information on a webpage belongs to.   * Use different internet services for different purposes.   By the end of Year 6, children will know how to:  • Describe how information is transported on the internet.  • Select an appropriate tool to communicate and collaborate online.  • Talk about the way search results are selected and ranked.  • Check the reliability of a website.  • Talk about copyright and acknowledge the sources of information found online.  world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar. |
| Coding and Programming | Understanding the World (UW) -Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension  Children will:   * give commands one at a time to control direction and movement, including straight, forwards, backwards, turn; * give a set of instructions to follow and predict what will happen;   Understanding the World:  Technology  • Can create content such as a video recording, stories, and/or draw a picture on screen  Paint, colour, brush, tools, keyboards, keys, mouse, click, button, double click.  There is no Early Learning Goal for Computing | Children begin to understand their influence on technology by developing their programming skills to determine output. They begin to understand that an algorithm is a series of steps for solving problems and a code is a series of steps that machines can execute. They begin to explore debugging, predicting when codes may not work and changing them.  Children understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. They create, debug and use logical reasoning to predict the behaviour of simple programs.  **Bee-Bots**  By the end of Year 1, children will know how to:   * create instructions using pictures * say why it is important to precise when writing an algorithm * write instructions to program a person like a computer giving commands one at a time to control direction and movement, including straight, forwards, backwards, turn; * program a Bee-Bot (or similar programmable toy) to move * debug a Bee-Bot (or similar programmable toy) * program a sequence to make a Bee-Bot (or similar programmable toy move)   **Turtle Logo and Scratch**  By the end of Year 2, children will know how to:   * create an algorithm to move or rotate the turtle * create an algorithm and use the repeat command * create an algorithm and add sound * create an algorithm and use the repeat and say command * create an algorithm and use the commands to change the backdrop and add sprites * improve/change their sequence of commands by debugging; * control the nature of events: repeat, loops, single events and add and delete features;   Use key vocabulary to demonstrate knowledge and understanding in this strand: algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, blocks, sequence, project, repeat, repeat forever, invisible, grow, shrink. | Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; they solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs and work with variables and various forms of input and output. They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.    **Scratch**  By the end of Year 3 children will know how to:   * create and debug an algorithm using the move, rotate and repeat commands. * create and debug algorithms that draw regular polygons. * create and debug algorithms that draw shapes * create and debug algorithms to draw patterns.   By the end of Year 4 children will know:   * compare quizzes and decompose a problem into smaller parts. * write and debug programs that accomplish specific goals by creating a quiz question. * write and debug a program. * use sequence and selection * write and debug a program which uses sequence. * work with variables by changing the backdrop to the quiz. * work with variables. * design, write and debug my own program by selecting appropriate visual block commands to create a sequence.   decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable. | Design, write and debug programs that accomplish specific goals, including controlling or stimulating physical systems; solve problems by decomposing them into smaller parts; Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.  **Scratch**  By the end of Year 5, children know how to:   * design and program a character game * design an original character or backdrop for a game * add features or effects to enhance a game * create an original animated game with a specific goal * program costume changes for a sprite * add point-scoring and levels to game codes   By the end of Year 6, children will know how to:   * create an appropriate animation for a story scene * structure and control the timing of events * control when objects need to be visible * sequence events to create a story narrative * add voice sounds to enhance an animated story * add interactive user features to a scene or story   flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Kodu, world, object, tool palette, program environment, smooth, flatten, raise. |
| Online Safety | Understanding the World (UW) -Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension  **Understanding the World:**  Technology  • Can use the internet with adult supervision to find and retrieve information of interest to them  **Personal, Social and Emotional;** development:  Sense of self  • Is proactive in seeking adult support and able to articulate their wants and needs  Children will:   * Use educational internet sites that are age appropriate and safe to use. * Children will understand that they need to seek help if they see something unexpected or worrying * Children will know what appropriate and inappropriate behaviour on the internet is.   Paint, colour, brush, tools, keyboards, keys, mouse, click, button, double click.  Personal, Social and Emotional ELG:  -Building Relationships Children at the expected level of development will:  -Work and play cooperatively and take turns with others;  - Form positive attachments to adults and friendships with peers; - Show sensitivity to their own and to others’ needs  There is no Early Learning Goal for Computing | Children begin to consider their activity on the internet and learn about ways to keep themselves safe and why it is important to do so. They also compare appropriate and inappropriate activity on the internet and decide what to do next.  Children can use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.   * seek help from an adult when they see something that is unexpected or worrying; * demonstrate how to safely open and close   By the end of Year 1, children will know how to:   * create, name and date my digital creative work * safely search for images online * understand how to communicate safely online * understand what personal information I need to keep safe * explore how to use email safely to communicate * apply my online safety knowledge to help others make good choices online   By the end of Year 2, children will know how to:   * understand that the information I put online leaves a digital footprint * use key words in an online search to find out about a topic * recognise whether a website is appropriate for children * rate and review informative websites * identify kind and unkind behaviour * apply our knowledge of safe and sensible online activities to different situations   Use key vocabulary to demonstrate knowledge and understanding in this strand: safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet. | Use technology safely, respectfully and responsibly. They recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact.    By the end of Year 3 children will know how to :   * what cyberbullying is and how to address it. * understand how websites use advertisements to promote products. * how to safely send and receive emails. * explore different ways children can communicate online. * use knowledge about online safety to plan a party online.   By the end of Year 4 children will know how to:   * identify how a message can hurt someone’s feelings. * say how I should respond to a hurtful message online. * use a search engine accurately. * understand the term ‘plagiarism’ and how to avoid it * create a safe online profile. * explain how to be a responsible digital citizen. * create an online safety superhero character.   Use key vocabulary to demonstrate knowledge and understanding in this strand: safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public. | Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour, identify a range of ways to report concerns about content and contact and be discerning in evaluating digital content.  By the end of Year 5 children will know:   * identify spam emails and what to do with them * write citations for websites they use for research * create strong passwords * recognise when, why and how photographs we see online may have been edited * apply online safety rules to real-life scenarios   By the end of Year 6 children will know how to:   * find similarities and difference between in-person and cyberbullying * Identify good strategies to deal with cyberbullying. * identify secure websites by identifying privacy seals of approval * understand the benefits and pitfalls of online relationships * identify information that I should never share * identify how the media play a powerful role in shaping ideas about girls and boys * apply my online safety knowledge to my online activities   spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private/personal |
| Key | EYFS Framework  Early Learning Goal  Non Statutory Birth to 5 matters document  Vocabulary | National Curriculum Objectives  Children can:  Vocabulary | | |