**Long Term Overview for Computing at Springfield**

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| **INTENT** | We offer a curriculum that is broad and balanced where the children are taught substantive knowledge for Computing in a topic based approach at a level that is personalised to meet their level of development. Computing will be taught both in isolation to gain skills and also throughout other subjects.  |
| **IMPLEMETATION**  | At Springfield we plan a sequence of lessons using a topic based approach to ensure there is a clear sequence of lessons demonstrating progression throughout each unit of work. We use the long term overview substantive knowledge to ensure a wide range of coverage is included in our Medium Term Plans (There is no medium term plan for Computing- Computing is covered within and across other subjects within the curriculum) that is suited to the current cohort of children. Disciplinary knowledge (using our skills trackers) is also identified on the medium term plans and these link directly to the developmental stages of the current cohort of children. |
| **IMPACT** | Children will make progress in developing their disciplinary knowledge and their substantive knowledge each year. Evidence will be found in children’s topic books and tracked on their skills trackers. |
| **Level expected of the end of EYFS** | Technology is not specified in the EYFS framework however we work exploring a range of technology and being able to operate a range of technology. This will be part of continuous provision where appropriate, linked to our topics where appropriate.Taught specific skills throughout the year to enable us to be able to understand the following using applications on helpkidzlearn;cause and effect;by press and hold, press and let go, press it againsequential awareness; making more happenattention and timing; wait then press, wait for change, locate change, experimental play, ready steady go.Targeting and timing; static targets, variable targets, variable timing, moving targetsIntroducing choice; two objects, related objects, interacting objects, one object two actions, build up, move and get.Choice making; free choice, find the object, complete the set, create a scene, exploration.

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| **National Curriculum Expectations** **Substantive Knowledge KS1** | **Multimedia, Text and Images**

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| 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.**Children can:****a** add text strings, text boxes and show and hide objects and images, manipulating the features;**b** use various tools, such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape;**c** use applications and devices in order to communicate ideas, work, messages and demonstrate control;**d** save, retrieve and organise work;**e** 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.**Multimedia Sound and Motion**

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| Children begin to develop their creativity using technology through recording sound. Children will also begin to develop their editing skills and control of the tools.Children use technology purposefully to create, organise, store, manipulate and retrieve digital content.**Children can:****a** use software to record sounds;**b** change sounds recorded;**c** save, retrieve and organise work;**d** use key vocabulary to demonstrate knowledge and understanding in this strand: commands, add sound.**Technology in Our Lives**

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| 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.**Children can:****a** recognise ways that technology is used in the home and community, e.g. taking photos, blogs, shopping;**b** use links to websites to find information;**c** recognise age-appropriate websites;**d** use safe search filters;**e** 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.**Coding and Programming**  |

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.**Children can:**a give commands one at a time to control direction and movement, including straight, forwards, backwards, turn;b control the nature of events: repeat, loops, single events and add and delete features;c give a set of instructions to follow and predict what will happen;d improve/change their sequence of commands by debugging;e 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.**Online Safety**  |  |

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.**Children can:**a identify what things count as personal information;b identify what is appropriate and inappropriate behaviour on the internet;c agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords;d seek help from an adult when they see something that is unexpected or worrying;e demonstrate how to safely open and close applications and log on and log off from websites;f 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. |

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| **National Curriculum Expectations** **Substantive Knowledge KS2** | **Multimedia Text and Images**

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| Children develop their skills of formatting using keyboard commands, organising their work to demonstrate effect. In LKS2, they will have the opportunity to express themselves more through digital technology, art, PowerPoint and posters. Children should continue to demonstrate control when operating tools as in KS1. Children 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. **Children can:** **a** create different effects with different technological tools, demonstrating control; **b** use appropriate keyboard commands to amend text on a device; **c** use applications and devices in order to communicate ideas, work, and messages; **d** save, retrieve and evaluate work, making amendments; **e** insert a picture/text/graph/hyperlink from the internet or a personal file; **f** use key vocabulary to demonstrate knowledge and understanding in this strand: 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. **Multimedia Sound and Motion**

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| Children develop their editing skills further by cropping, organising and arranging film clips. They are able to share work and offer feedback and ideas for improvement with animation and film, giving their opinion on which software to use. In LKS2, children also look at the history of animation and reflect upon the changes over time. Children 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. **Children can:** **a** use software to record, create and edit sounds and capture still images; **b** change recorded sounds, volume, duration and pauses; **c** use software to capture video for a purpose; **d** crop and arrange clips to create a short film; **e** plan an animation and move items within each animation for playback; **f** use key vocabulary to demonstrate knowledge and understanding in this strand: audio, sound, video, movie, embed, link, file format, animate, animation, still image, thaumatrope, zoetrope, zoopraxiscope, stereoscope, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame. **Handling Data**

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| Children begin to explore expressing information in tables, sorting and organising information for others to be able to understand. Children 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. **Children can:** **a** talk about the different ways data can be organised; **b** sort and organise information to use in other ways; **c** search a ready-made database to answer questions; **d** use key vocabulary to demonstrate knowledge and understanding in this strand: Google Docs, insert, table. **Technology in Our Lives**

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| Children refer to online safety rules when discussing technology in their lives. They are able to navigate between websites and use safe search terms on trusted search engines. They become more confident in using email for communication, including attaching and saving files from emails. Children 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. **Children can:** **a** explain ways to communicate with others online; **b** describe the world wide web as the part of the internet that contains websites; **c** add websites to a favourites list; **d** use search tools to find and use an appropriate website and content; **e** use strategies to improve results when searching online; **f** use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media. **Coding and Programming** Children build on their programming skills by solving problems and programming commands to achieve a specific outcome. They begin to write programs, explain algorithms and identify errors in their work. Children 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. **Children can:** a use logical thinking to solve an open-ended problem by breaking it up into smaller parts; b write a program, putting commands into a sequence to achieve a specific outcome; c give a set of instructions to follow and predict what will happen; d keep testing a program and recognise when it needs to be debugged; e use variables to create an effect, e.g. repetition, if, when, loop; f use key vocabulary to demonstrate knowledge and understanding in this strand: 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. **Online Safety** Children become more aware of their digital footprint by reflecting on their experience on the internet. They are able to understand more about age-appropriate websites and adverts and how adverts are used by companies. Children are also introduced to the concept of plagiarism and citation. Children use technology safely, respectfully and responsibly. They recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact. **Children can:** a reflect on their own digital footprint and behaviour online; b identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying; c agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; d seek help from an adult when they see something that is unexpected or worrying; e demonstrate understanding of age-appropriate websites and adverts; f 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.  |

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| Rabbits Class 2021-2022 | Marvellous MeTake pictures of themselves using ICT. Listen to a range of audio books. Programming – To understand the algorithms are precise instructions  | Down in the GardenUse drawing programmes on the computer to produce pictures. Record themselves telling a story using ICT. Listen to a range of audio books. Online safety – discuss possession, and friendships.  | Off on an AdventureCreate a collage of pictures online. Use drawing programmes on the computer to produce pictures. Record themselves telling a story using ICT. Listen to a range of audio books. |
| Rabbits Class 2022-2023 | Night and DayUse drawing programmes on the computer to produce pictures of fireworks. Use torches and flashlights to explore lights at night. Take pictures using IPads and cameras. Listen to a range of audio books.Programming- To understand the algorithms are precise instructions | Once upon a TimeUse drawing programmes on the computer to produce pictures. Record themselves telling a story using ICT. Listen to a range of audio books.Online safety – discuss possession, and friendships. | Pirates and the SeasideUse drawing programmes on the computer to produce pictures of the seaside and sea creatures. Record themselves telling facts using ICT. Listen to a range of audio books. |
| Hedgehogs Class 2021-2022 | Everyday Life Look at technology in the environment Use different technology to help us access different learning – Ipads etc. Programming – Give commands to create algorithms.  | Space Explore how technology can be used to look into space. Use technology to access information about space Online safety – discuss possession, and friendships. | Animals and Wildlife Use drawing programmes on the computer to produce and edit pictures of animals. Listen to a range of audio books and watch programmes about animals and wildlife.  |
| Hedgehogs Class and Butterflies 2022-2023 | People Who Help Us Use pedestrian crossings and look at how technology supports our safety. Programming – Give commands to create algorithms. | FantasyUse paint programmes to create own fantasy characters and places Online safety – discuss possession, and friendships. | Places Look at technology in the environment. Use technology to support the learning around places  |
| Squirrels Class 2021-2022 | School Days Create sentences using ICT describing the differences between old and new classrooms.  | Get Out of My SwampUse Puppet Pals to create a digital version of a fairy story suitable for younger children. Create a film of a story and add music. Online safety – discuss possession, and friendships. Where to go for help if they have any concerns.  | Heroes Research and create fact files of Olympic record breakers and famous Olympians using ICT. Programming – Create and debug simple programmes |
| Squirrels Class 2022-2023 | ToysTake pictures of favourite toys, delete and edit unwanted pictures.  | Poles Apart Watch the film Pingu and make a storyboard to re tell the story. Create own films of the movie. Online safety – discuss possession, and friendships. Where to go for help if they have any concerns. | Flight Simulate a take-off Using ICT. Programming – Create and debug simple programmes |
| Badgers Class 2021-2022 | The Victorian Times Use technology to access learning about the Victorian Times. Programming – Improve and change the sequence of commands  | AfricaUse cause and effect technology to explore pictures and sounds of Africa. Using ICT create collages about Africa Online safety – discuss possession, and friendships. Where to go for help if they have any concerns. | DinosaursCreate your own virtual dinosaur using apps.  |
| Badgers Class 2022-2023 | Travel and Transport Explore the technology used in vehicles Use remote control cars Programming – Improve and change the sequence of commands | Food Using ICT create collages using pictures of foodsOnline safety – discuss possession, and friendships. Where to go for help if they have any concerns. | Castles and Knights Use technology to access learning about castles and knights.  |
| Blackbirds Class 2021-2022 | The Home Front Explore photographs on WW2: school days, home life, food, working children. Use computer software to create own radio advert using sound effects. Use music to participate in street parties. Programming – Design, write and debug programmes.  | Indian Spice Use online resources to look at maps of India and locate the main cities in India. Make comparisons to UK on population, buildings and structures and natural features. Online safety- Recognise acceptable and unacceptable behaviour online. Discuss the risks around using social media.  | Record Breakers Research and create fact files of Olympic record breakers and famous Olympians using ICT. |
| Blackbirds Class 2022-2023 | London’s Burning Use the internet to research information. Create a storyboard using pictures downloaded. Use animation software and make simple recordings of the Great Fire of London. Programming Design, write and debug programmes. | Wonder Women Online safety- Recognise acceptable and unacceptable behaviour online. Discuss the risks around using social media. | Pioneers Use the internet to research information about astronauts. Make videos adding music to a production about space. Create a PowerPoint about Isambard Kingdom Brunel.  |
| Foxes Class 2021-2022 | The Great War Research key British figures in WW1 using the internet. King George V, Asquith, Lloyd George, Kitchener. Present findings to the class. Create a timeline and represent using ICT. Programming Design, write and debug programmes. | China Use online resources to look at maps of China and locate the main cities in China. Make comparisons to UK on population, buildings and structures and natural features. Online safety- Recognise acceptable and unacceptable behaviour online. Discuss the risks around using social media. | Record Breakers Research and create fact files of Olympic record breakers and famous Olympians using ICT. |
| Foxes Class 2022-2023 | Meet the Flintstones Research a range of information using the internet and present findings using ICT. Programming- Design, write and debug programmes. | A Journey Through Europe Use maps identify the different places in Europe. Compare the main features of the different countries to each other and present findings using ICT. Online safety- Recognise acceptable and unacceptable behaviour online. Discuss the risks around using social media. | Extreme Survival Research a range of information using the internet and present findings using ICT. Create monologue films of extreme survival experiences.  |
| Enrichment Activities | WOW day- Computing unplugged – pupils to design and create their own maze, with clear and precise instructions. Internet Safer Day Lunch club – Coding club weekly.  |