

HAWTHORN PARK COMMUNITY PRIMARY SCHOOL

Where Care and Learning Count

Headteacher: Mrs Jeni Houghton

Skills progression for: Computing

| Skills Yr Grp | Coding and Programming (Algorithms) | Multimedia | Communication Networks & eSafety | Technology in our lives | Handling Data |
|--------------------------------|--|---|--|--|---|
| Reception/EYFS | <ul style="list-style-type: none"> ▪ Use simple software to make things happen. ▪ Completes a simple program on a computer. ▪ Press buttons on a floor robot and talk about the movements. ▪ Explore options and make choices with toys, software and websites | <ul style="list-style-type: none"> ▪ Develop an interest in ICT by using age appropriate websites or programs. ▪ Use a mouse correctly (Left handed – find a comfortable way to use mouse) to rearrange objects and pictures on a screen. Begin to use a keyboard. ▪ Recognise text, images and sound when using ICT. ▪ Use a camera or sound recorder to collect photos or sound | <ul style="list-style-type: none"> ▪ Use a shortcut such as an icon on the desktop to navigate to a specific website. ▪ Play appropriate games on the Internet. ▪ Talk about good and bad choices in real life e.g. taking turns, saying kind things, helping others, telling an adult if something upsets you. | <ul style="list-style-type: none"> ▪ Children recognise that a range of technology is used in places such as homes and schools. ▪ Help adults operate equipment around the school. ▪ Independently operate simple equipment. ▪ See their own work online e.g. on the school website. | <ul style="list-style-type: none"> ▪ Collect information as photos or sound files. ▪ Use a simple pictogram or set of photos to count and organise information. |

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| Year 1 | <ul style="list-style-type: none"> ▪ Give commands (physically to each other) including: straight; forwards; backwards; turn; left; right; clockwise; anticlockwise; one at a time. ▪ Explore outcomes when a sequence of instructions is given, e.g. to a robot. ▪ Give a set of simple instructions to follow out a task. ▪ Improve/change their sequence of commands. ▪ Use the word debug to correct any mistakes when programming a floor robot ▪ Begin to predict what will happen for a short sequence of instructions in a program ▪ Begin to use software to create movement & patterns on a screen ▪ Give a set of instructions to form simple geometric shapes. | <ul style="list-style-type: none"> ▪ Save and retrieve the learning show to others, independently. ▪ Use paint programs to create pictures. ▪ Add text and images to a template document using an image and word bank. ▪ Record their own voices and play back to an audience. ▪ Use a video or stills camera to record an activity. ▪ Create sounds and simple music phrases using ICT tools. ▪ Use index fingers (left and right hand) on a keyboard to build words and sentences. ▪ Know when and how to use the SPACE BAR (thumbs) to make spaces between words. | <ul style="list-style-type: none"> ▪ Agree sensible e-safety rules for the classroom. ▪ Use a selection of websites and consider who can see the information online. ▪ Play appropriate games on the internet, including games against real people. ▪ Talk about how adults can help us, including when we see something we don't like or something makes us feel uncomfortable. ▪ Play games that reinforce the idea of personal information, including password privacy. | <ul style="list-style-type: none"> ▪ Identify uses of technology in the classroom, at home and in the local area. ▪ Understands that computers have no intelligence and that computers can do nothing unless a program is executed. ▪ Talk about using the Internet and using resources on the local device. ▪ Explore simple information sources including age appropriate websites. | <ul style="list-style-type: none"> ▪ Recognises different types of data: text, number. ▪ Contribute to and interpret a pictogram. ▪ Take photographs, video and record sound to record learning experiences. ▪ Look at how data is represented digitally. |

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| Year 2 | <ul style="list-style-type: none"> ▪ Give commands (physically to each other) including: straight; forwards; backwards; turn; right-angle; left; right; clockwise; anticlockwise; one at a time. ▪ Articulate an algorithm to achieve a purpose. ▪ Plan and enter a sequence of instructions to achieve an algorithm, with a robot, specifying distance and turn and drawing a trail. ▪ Explore outcomes when giving instructions in a simple Logo program. ▪ Watch a Logo program execute and debug any problems. ▪ Predict what will happen & test results. ▪ Control the nature of events: repeat, loops, single events and add and delete features. ▪ Talk about similarities and differences between floor robots and logo on screen. ▪ Recognises that all software executed on digital devices is programmed. | <ul style="list-style-type: none"> ▪ Save and retrieve the learning show to others, independently. ▪ Use an increasing variety of tools and effects in paint programs and talk about their choices. ▪ Create own documents, adding text and images. ▪ Use templates to make electronic books individually and in pairs. ▪ Explore the effects of sound and music in animation and video. ▪ Use keyboard to enter text (index fingers left and right hand). ▪ Know when and how to use the RETURN/ENTER key. ▪ Use SHIFT and CAPS LOCK to enter capital letters. ▪ Use DELETE and BACKSPACE buttons to correct text. ▪ Create sentences, SAVE and edit them later. | <ul style="list-style-type: none"> ▪ Agree sensible e-safety rules for the classroom. ▪ Understands the importance of communicating safely and respectfully online. ▪ Use a selection of websites and consider who can see the information online. ▪ Play appropriate games on the internet, including games against real people. ▪ Talk about how adults can help us, including when we see something we don't like or something makes us feel uncomfortable. ▪ Play games that reinforce the idea of keeping personal information private, including password privacy. | <ul style="list-style-type: none"> ▪ Identify the purposes for using technology in the classroom, at home and in the world around. ▪ Find information from a technology based resource such as the Internet, DVD or files on the public drive and talk about the differences and who the information belongs to. ▪ Talk about whether information is true or not ▪ Talks about their work and makes changes to improve it. | <ul style="list-style-type: none"> ▪ Appreciates that programs can work with different types of data. ▪ Ask questions and consider how they will collect information. ▪ Collect data, generate graphs and charts to find answers. ▪ Save and retrieve the data to show to others. ▪ Create paper/object decision trees and explore a branching database. ▪ Take and save photographs, video and record sound to capture learning. ▪ Use microscopes or other devices to capture and save magnified images. ▪ Investigate different types of digital data e.g. online encyclopaedias. |

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| Year 3 | <ul style="list-style-type: none"> ▪ Navigate the Scratch programming environment and create a background and a sprite for a game. ▪ Add inputs to control their sprite. ▪ Use conditional statements within the program to control the sprite (if...then...) ▪ Plan and enter a sequence of instructions on a robot specifying distance and turn to achieve specific outcomes. ▪ Test and debug programmed sequences. ▪ Begin to type logo commands to achieve outcomes. ▪ Explore outcomes when giving sequences of instructions in Logo software. ▪ Use repeat to achieve solutions to tasks. ▪ Solve problems with a floor robot and Logo using efficient procedures to create shapes and letters. ▪ Create an algorithm to tell a joke or a simple story. | <ul style="list-style-type: none"> ▪ Explore and begin to evaluate the use of multimedia (photos, video and sound) to enhance communication ▪ Create and begin to edit text and presentation documents, experimenting with fonts, size, colour, alignment for emphasis and effect. ▪ Use a range of effects in art programs including brush sizes, repeats, reflections ▪ Explore the use of video, animation, and green screening. ▪ Use ICT tools to create musical phrases. ▪ Amend text and save changes. ▪ Use individual fingers to input text and use SHIFT key to type characters. ▪ Amend text by highlighting and using SELECT/DELETE and COPY/PASTE. ▪ Look at own work and consider how it can be improved for effectiveness | <ul style="list-style-type: none"> ▪ Agree sensible e-safety rules for the classroom. ▪ Choose a secure password for age-appropriate websites. ▪ Discuss what actions could be taken if they are uncomfortable or upset online e.g. Report Abuse button. ▪ Talk about what games they enjoying playing and what good choices are when playing games e.g. content, screen time. ▪ Use a class blog to share information and talk about who can see it, and how to communicate safely and respectfully ▪ Comment and provide positive feedback on the work of classmates in school or online, or the work of others online. ▪ Knows what to do when concerned about content or being contacted. | <ul style="list-style-type: none"> ▪ Save work on the school network, on the Internet and on individual devices ▪ Recognises that a range of digital devices can be considered a computer. ▪ Talk about the parts of a computer. ▪ Use appropriate tools to collaborate on-line. ▪ Use appropriate tools to communicate on-line. ▪ Use simple search tools and find appropriate websites. ▪ Talk about the owner of information online | <ul style="list-style-type: none"> ▪ Recognises that data can be structured in tables to make it useful. ▪ Find out information from a pre-prepared database, asking straightforward questions. ▪ Contribute towards a database. ▪ Construct and use a branching database ▪ Record data in a variety of ways. Present data for others. ▪ Use a data logger to monitor changes and talk about the outcomes seen |

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| Year 4 | <ul style="list-style-type: none"> ▪ Create and edit procedures by typing logo commands including pen up, pen down and changing the trail of the turtle. ▪ Solve open-ended problems with a floor robot and Logo including creating simple regular polygons, making sounds and planning movements such as a dance ▪ Experience a variety of resources (e.g. Scratch) to extend knowledge and understanding of programming. ▪ Create an algorithm and a program that will use a simple selection command for a game. ▪ Sequence pre-written lines of programming into order ▪ Begin to correct errors (debug) as they program devices and actions on screen. ▪ Talk about algorithms planned by others and identify any problems and the expected outcome. ▪ Use an algorithm to sequence more complex programming into order. ▪ Link the use of algorithms to solve problems to work in Maths, Science and DT. | <ul style="list-style-type: none"> ▪ Explore how multimedia (photos, video and sound) can create atmosphere and appeal to different audiences ▪ Be confident in creating and modifying text and presentation documents to achieve a specific purpose ▪ Use art programs and online tools to modify photos for a specific purpose using a range of effects ▪ Explore the use of video, animation, and green screening for a specific audience. ▪ Use ICT tools to create music phrases for a specific purpose ▪ Use a keyboard effectively, including the use of keyboard shortcuts ☞_Use font sizes and effects such as bullet points appropriately. ▪ Know how to use a spellcheck. ▪ Look at their own, and a friend's work and provide feedback that is constructive and specific. | <ul style="list-style-type: none"> ▪ Agree sensible e-safety rules for the classroom. ▪ Demonstrates use of computers safely and responsibly, knowing a range of ways to report unacceptable content and contact when online, e.g. Report Abuse button. ▪ Understands how to create a secure password for age-appropriate websites. ▪ Talk about what games they enjoying playing and what good choices are when playing games e.g. content, screen time. ▪ Use a class blog to share information and talk about who can see it, and how to communicate safely and respectfully ▪ Comment and provide positive feedback on the work of classmates in school or online, or the work of others online. | <ul style="list-style-type: none"> ▪ Talk about the school network and the different resources they can access, including the Internet. ▪ Frame questions and identify key words to search for information on the Internet. ▪ Consider reliability of information and ways it may influence you. ▪ Check who the owner is before copying photos, clipart or text. | <ul style="list-style-type: none"> ▪ Understands the difference between data and information and can identify different types of data. ▪ Plan and create a database to answer questions. ▪ Ask questions carrying out simple searches on a database. ▪ Identify inaccurate data. ▪ Collects, organises and presents data in appropriate format for an audience. ▪ Use a data logger to record and compare individual readings |

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| Year 5 | <ul style="list-style-type: none"> ▪ Use external triggers and infinite loops to control sprites or using repeat to achieve solutions to problems with Logo and a floor robot. ▪ Create and edit variables, e.g. to replace number of sides in a regular shape. ▪ Use conditional statements to control software or hardware with an input and using if... then... commands. ▪ Talk about procedures as parts of a program ▪ Refine procedures to improve efficiency ▪ Explore a computer model to control a physical system ▪ Change inputs on a model to achieve different outputs ▪ Identify difficulties and articulate a solution for errors in a program ▪ Group commands as a procedure to achieve a specific outcome within a program ▪ Write down the steps required (an algorithm) to achieve the outcome that is wanted and refer to this when programming. | <ul style="list-style-type: none"> ▪ Select an appropriate ICT or online tool to create and share ideas. ▪ Explore the effects of multimedia (photos, video, sound) in a presentation or video and show how they can be modified. ▪ Develop skills using transitions and hyperlinks to enhance the structure of presentations. ▪ Use a wide range of effects in art programs and online tools, discussing the choices made and their effectiveness. ▪ Know how to use text and video editing tools in programs to refine their work. ▪ Use online tools to create and share presentations and films. | <ul style="list-style-type: none"> ▪ Agree sensible e-safety rules for the classroom. ▪ Discuss their own personal use of the Internet and choices they make including excessive use, personal information and password security, ▪ Discuss and demonstrate how to protect devices from virus threats. ▪ Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns. ▪ Demonstrates responsible use of technologies and online services, and knows a range of ways to report concerns. ▪ Explore using the safe and responsible use of online communication tools e.g. blogs, messaging | <ul style="list-style-type: none"> ▪ Identify different parts of computing devices. ▪ Identify different parts of the Internet. ▪ Understands the difference between hardware and application software, and their roles within a computer system ▪ Evaluates the appropriateness of digital devices, internet services and application software to achieve given goals. ▪ Choose appropriate tools for communication and collaboration and use them responsibly. ▪ Use effective strategies to search with appropriate search engines. ▪ Talk about the different elements on webpages. ▪ Find out who the information presented on a webpage belongs to | <ul style="list-style-type: none"> ▪ Collect and record information using spreadsheets and databases ▪ Carry out complex searches (e.g. using and/or; \leq / \geq) ▪ Solve problems and present answers using data tools. ▪ Analyse information and question data. ▪ Identify poor quality data. . ▪ Select appropriate use of a data logger for an investigation and interpret the findings |

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| Year 6 | <ul style="list-style-type: none"> ▪ Record in some detail the steps (the algorithm) that are required to achieve an outcome and refer to this when programming. ▪ Predict the outputs for the steps in an algorithm. ▪ Use external triggers and infinite loops to control, create and edit variable and use conditional statements to design their own game including sprites, backgrounds, scoring and/or timers. ▪ Use conditional statements, loops, variables and broadcast messages in own game. ▪ Create variables to provide a score/trigger an action in own game ▪ Ensure game finishes when a player wins or loses and they must know they have won or lost. ▪ Evaluate the effectiveness of the game and debug as required, linking errors in a program to problems in the original algorithm. ▪ Understand how sensors can be used to measure input in order to activate a procedure or sequence and talk about applications in society. | <ul style="list-style-type: none"> ▪ Identify the purpose for selecting an appropriate online tool. ▪ Discuss audience, atmosphere and structure of a presentation or video. ▪ Collect information and media from a range of sources (considering copyright issues) into a presentation for a specific audience. ▪ Use sound, images, text, transitions, hyperlinks and HTML code effectively in presentations. ▪ Store presentations and videos online where they can be accessed by themselves and shared with others. ▪ Evaluate the effectiveness of their own work and the work of others. | <ul style="list-style-type: none"> ▪ Agree sensible e-safety rules for the classroom. ▪ Discuss their own personal use of the Internet and choices they make including excessive use, personal information and password security, ▪ Discuss how to protect devices from virus threats. ▪ Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns. ▪ Explore using the safe and responsible use of online communication tools e.g. blogs, messaging | <ul style="list-style-type: none"> ▪ Understands the difference between the internet and internet service e.g. world wide web. ▪ Describe different services provided by the Internet and how information moves around the Internet. ▪ Describe different parts of a computing device and how it connects to the Internet. ▪ Knows the difference between physical, wireless and mobile networks. ▪ Connect a computing device to a keyboard, mouse or printer. ▪ Identify appropriate forms of online communication for different audiences. ▪ Use search engines as part of an effective research strategy. ▪ Describe how search results are selected and ranked. ▪ Acknowledge who resources belong to that have been found on the internet | <ul style="list-style-type: none"> ▪ Use the whole data process – generate, process, interpret, store, and present information – realising the need for accuracy and checking plausibility. ▪ Select appropriate data tool. ▪ Identify and present results. ▪ Interrogate a database, refining searches to provide answers to questions. ▪ Plan investigations using the outcomes from a data logger to show findings |