

Loxdale Primary School Skills Progression

Subject Area: Computing



EYFS

- In EYFS, pupils in Nursery and Reception have open access to interactive whiteboards where they independently access a range of games and software. In Nursery, pupils use programmable resources such as Bee-Bots to explore how things work. In Reception, pupils use iPads to access apps and the internet as part of their topic learning and to further their knowledge. Pupils also take part in discussions regarding online behaviours and internet safety.

Key Stage One

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- 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.

Key Stage Two

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating 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
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- 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
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

	Programming	Handling Data	Multimedia	Technology in our Lives
Reception	<ul style="list-style-type: none"> ○ The children can make a floor robot move. ○ The children can use simple software to make something happen. ○ The children can make choices about the buttons and icons they press, touch or click on. 	<ul style="list-style-type: none"> ○ The children can talk about different kinds of information such as pictures, video, text and sound. 	<ul style="list-style-type: none"> ○ The children can move objects on a screen. ○ The children can create shapes and text on a screen. ○ The children can use technology to show their learning. 	<ul style="list-style-type: none"> ○ The children can tell you about technology that is used at home and in school. ○ The children can operate simple equipment. ○ The children can use a safe part of the internet to play and learn.
Year One	<ul style="list-style-type: none"> ○ The children can give instructions to their friend and follow their instructions to move around. ○ The children can describe what happens when they press buttons on a robot. ○ The children can press the buttons in the correct order to make their robot do what they want it to. ○ The children can describe what actions they will need to do to make something happen and begin to use the word algorithm. ○ The children can begin to predict what will happen for a short sequence of instructions. ○ The children can begin to use software/apps to create movement and patterns on a screen. ○ The children can use the word debug when they correct mistakes whilst programming. 	<ul style="list-style-type: none"> ○ The children can talk about the different ways in which information can be shown. ○ The children can use technology to collect information, including photos, video and sound. ○ The children can sort different kinds of information and present it to others. ○ The children can add information to a pictograph and talk about what they have found out. 	<ul style="list-style-type: none"> ○ The children can be creative with different technology tools. ○ The children can use technology to create and present their ideas. ○ The children can use the keyboard or a word bank on their device to enter text. ○ The children can save information in a special place and retrieve it again. 	<ul style="list-style-type: none"> ○ The children can recognise the ways they use technology in the classroom. ○ The children can recognise ways that technology is used in their home and community. ○ The children can use links to websites to find information. ○ The children can begin to identify some of the benefits of using technology.
Year Two	<ul style="list-style-type: none"> ○ The children can give instructions to their friend (using forward, backward and turn) and physically follow their instructions. ○ The children can talk about the order they need to do things to make something happen and talk about this as an algorithm. ○ The children can program a robot or software to do a particular task. ○ The children can look at their friend's program and tell them what will happen. ○ The children can use programming software to make objects move. ○ The children can watch a program execute and spot where it goes wrong so that they can debug it. 	<ul style="list-style-type: none"> ○ The children talk about the different ways they use technology to collect information, including a camera, microscope or sound recorder. ○ The children can make and save a chart or graph using the data they collect. ○ The children can talk about the data that is shown in their chart or graph. ○ The children are starting to understand a branching database. ○ The children explain what kind of information they could use to help them investigate a question. 	<ul style="list-style-type: none"> ○ The children can use technology to organise and present their ideas in different ways. ○ The children can use the keyboard on their device to add, delete and space text for others to read. ○ The children can talk about an online tool that will help them to share their ideas with other people. ○ The children can save and open files on the device they use. 	<ul style="list-style-type: none"> ○ The children can talk about why they use technology in the classroom. ○ The children can talk about why they use technology in their home and community. ○ The children are starting to understand that other people have created the information they use. ○ The children can identify benefits of using technology including finding information, creating and communicating. ○ The children can talk about the differences between the internet and things in the physical world.

<p>Year Three</p>	<ul style="list-style-type: none"> ○ The children can break an open-ended problem up into smaller parts. ○ The children can put programming commands into a sequence to achieve a specific outcome. ○ The children can keep testing their program and can recognise when they need to debug it. ○ The children can use repeat commands. ○ The children can describe the algorithm they will need for a simple task. ○ The children can detect a problem in an algorithm which could result in unsuccessful programming. 	<ul style="list-style-type: none"> ○ The children can talk about the different ways data can be organised. ○ The children can search a ready-made database to answer questions. ○ The children can collect data help them to answer a question. ○ The children can add to a database. ○ The children can make a branching database. ○ The children can use a data logger to monitor changes and can talk about the information collected. 	<ul style="list-style-type: none"> ○ The children can create different effects with different technology tools. ○ The children can combine a mixture of text, graphics and sound to share their ideas and learning. ○ The children can use appropriate keyboard commands to amend text on their device, including making use of a spellchecker. ○ The children can evaluate their work and improve its effectiveness. ○ The children can use an appropriate tool to share their work online. 	<ul style="list-style-type: none"> ○ The children can save and retrieve work on the internet, the school network or on their own device. ○ The children can talk about the parts of a computer. ○ The children can explain ways to communicate with others online. ○ The children can describe the World Wide Web as the part of the internet that contains websites. ○ The children can use search tools to find and use an appropriate website. ○ The children think about whether they can use images that they find online in their own work.
<p>Year Four</p>	<ul style="list-style-type: none"> ○ The children can use logical thinking to solve an open-ended problem by breaking it up into smaller parts. ○ The children can use an efficient procedure to simplify a program. ○ The children can use a sensor to detect a change which can select an action within their program. ○ The children know that I need to keep testing their program while I am putting it together. ○ The children can use a variety of tools to create a program. ○ The children can recognise an error in a program and debug it. ○ The children recognise that an algorithm will help me to sequence more complex programs. ○ The children recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology. 	<ul style="list-style-type: none"> ○ The children can organise data in different ways. ○ The children can collect data and identify where it could be inaccurate. ○ The children can plan, create and search a database to answer questions. ○ The children can choose the best way to present data to their friends. ○ The children can use a data logger to record and share their readings with their friends. 	<ul style="list-style-type: none"> ○ The children can use photos, video and sound to create an atmosphere when presenting to different audiences. ○ The children are confident to explore new media to extend what they can achieve. ○ The children can change the appearance of text to increase its effectiveness. ○ The children can create, modify and present documents for a particular purpose. ○ The children can use a keyboard confidently and make use of a spellchecker to write and review their work. ○ The children can use an appropriate tool to share their work and collaborate online. ○ The children can give constructive feedback to their friends to help them improve their work and refine their own work. 	<ul style="list-style-type: none"> ○ The children can tell you whether a resource they are using is on the internet, the school network or their own device. ○ The children can identify key words to use when searching safely on the World Wide Web. ○ The children think about the reliability of information they read on the World Wide Web. ○ The children can tell you how to check who owns photos, text and clipart. ○ The children can create a hyperlink to a resource on the World Wide Web.

<p>Year Five</p>	<ul style="list-style-type: none"> ○ The children can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. ○ The children can refine a procedure using repeat commands to improve a program. ○ The children can use a variable to increase programming possibilities. ○ The children can change an input to a program to achieve a different output. ○ The children can use 'if' and 'then' commands to select an action. ○ The children can talk about how a computer model can provide information about a physical system. ○ The children can use logical reasoning to detect and debug mistakes in a program. ○ The children can use logical thinking, imagination and creativity to extend a program. 	<ul style="list-style-type: none"> ○ The children can use a spreadsheet and database to collect and record data. ○ The children can choose an appropriate tool to help them to collect data. ○ The children can present data in an appropriate way. ○ The children can search a database using different operators to refine their search. ○ The children can talk about mistakes in data and suggest how it could be checked. 	<ul style="list-style-type: none"> ○ The children can use text, photo, sound and video editing tools to refine their work. ○ The children can use the skills they have already developed to create content using unfamiliar technology. ○ The children can select, use and combine the appropriate technology tools to create effects that will have an impact on others. ○ The children can select an appropriate online or offline tool to create and share ideas. ○ The children can review and improve their own work and support others to improve their work. 	<ul style="list-style-type: none"> ○ The children can describe different parts of the internet. ○ The children can use different online communication tools for different purposes. ○ The children can use a search engine to find appropriate information and check its reliability. ○ The children can recognise and evaluate different types of information they find on the World Wide Web. ○ The children can describe the different parts of a webpage. ○ The children can find out who the information on a webpage belongs to.
<p>Year Six</p>	<ul style="list-style-type: none"> ○ The children can deconstruct a problem into smaller steps, recognising similarities to solutions used before. ○ The children can explain and program each of the steps in their algorithm. ○ The children can evaluate the effectiveness and efficiency of their algorithm while they continually test the programming of that algorithm. ○ The children can recognise when they need to use a variable to achieve a required output. ○ The children can use a variable and operators to stop a program. ○ The children can use different inputs (including sensors) to control a device or onscreen action and predict what will happen. ○ The children can use logical reasoning to detect and correct errors in algorithms and programs. 	<ul style="list-style-type: none"> ○ The children can plan the process needed to investigate the world around them. ○ The children can select the most effective tool to collect data for their investigation. ○ The children can check the data they collect for accuracy and plausibility. ○ The children can interpret the data they collect. ○ The children can present the data they collect in an appropriate way. ○ The children can use the skills they have developed to interrogate a database. 	<ul style="list-style-type: none"> ○ The children can talk about audience, atmosphere and structure when planning a particular outcome. ○ The children can confidently identify the potential of unfamiliar technology to increase their creativity. ○ The children can combine a range of media, recognising the contribution of each to achieve a particular outcome. ○ The children can explain why they select a particular online tool for a specific purpose. ○ The children can be digitally discerning when evaluating the effectiveness of their own work and the work of others. 	<ul style="list-style-type: none"> ○ The children can talk about the internet services they need to use for different purposes. ○ The children can describe how information is transported on the internet. ○ The children can select an appropriate tool to communicate and collaborate online. ○ The children can talk about the way search results are selected and ranked. ○ The children can check the reliability of a website. ○ The children can explain the term 'copyright' and acknowledge the sources of information that they find online.

