

Computing.

Curriculum Intent:

A Coder at Northwood needs:

To code

To communicate

To connect

To collect

National Curriculum

Key Stage 1	Key Stage 2
<ul style="list-style-type: none">• Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.• Write and test simple programs• Use logical reasoning to predict the behaviour of simple programs.• Organise, store, manipulate and retrieve data in a range of digital formats.• Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school.	<ul style="list-style-type: none">• Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.• Use sequence, selections and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs.• Use logical reasoning to explain how a simple algorithm works, 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.• Describe how internet search engines find and store data, use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.• Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

We intend the Computing Curriculum to develop the pupils:

- Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.
- The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.
- An understanding of the connected nature of devices.
- The ability to communicate ideas well by using applications and devices throughout the curriculum.
- The ability to collect, organise and manipulate data effectively.

Recommendation of technology and software installed across the school in varying key stages to enhance learning:

KS1	KS2
Orchard IT suite computers	Linx hybrid computers (Y3/4)
2 Simple	Acer laptops (Y5/6)
My world	Google Chrome Books (Y5/6)
Microsoft office (Word)	Microsoft office (Word, Powerpoint, Publisher, Excel)
Hello Ruby (Text book)	Scratch
Bee Bots	Logo
	Google Earth pro
	Minecraft Edu – turtle coding
	Robolab
	Lightbot
	EAK (Erase All Kittens)
	Movie make

Curriculum Implementation, using above list to enhance learning:

		Year 1 & 2	Year 3 & 4	Year 5 & 6
To code.	Motion	<ul style="list-style-type: none"> Control motion by specifying the number of steps to travel, direction and turn. 	<ul style="list-style-type: none"> Use specified screen coordinates to control movement. 	<ul style="list-style-type: none"> Set IF conditions for movements. Specify types of rotation giving the number of degrees
	Looks	<ul style="list-style-type: none"> Add text strings, show and hide objects and change the features of an object. 	<ul style="list-style-type: none"> Set the appearance of objects and create sequences of changes. 	<ul style="list-style-type: none"> Change the position of objects between screen layers (send to back, bring to front).
	Sound	<ul style="list-style-type: none"> Select sounds and control when they are heard, their duration and volume. Aa 	<ul style="list-style-type: none"> Create and edit sound. Control when they are heard, their volume, duration and rests. 	<ul style="list-style-type: none"> Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.
	Draw	<ul style="list-style-type: none"> Control when drawings appear and set the pen colour, size and shape. 	<ul style="list-style-type: none"> Control the shade of pens 	<ul style="list-style-type: none"> Combine the use of pens with movement to create interesting effects.
	Events	<ul style="list-style-type: none"> Specify user inputs (such as clicks) to control events. 	<ul style="list-style-type: none"> Specify conditions to trigger events (hyperlinks). 	<ul style="list-style-type: none"> Set events to control other events by 'broadcasting' information as a trigger.
	Control	<ul style="list-style-type: none"> Specify the nature of events (such as a single event or a loop). 	<ul style="list-style-type: none"> Use IF THEN conditions to control events or objects. 	<ul style="list-style-type: none"> Use IF THEN conditions to control events or objects.

	Sensing	<ul style="list-style-type: none"> • Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?). 	<ul style="list-style-type: none"> • Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions). 	<ul style="list-style-type: none"> • Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.
	Variables and lists	<ul style="list-style-type: none"> • From Y3 onwards. 	<ul style="list-style-type: none"> • Use variables to store a value • Use the functions to define, set, change, show and hide to control the variables. 	<ul style="list-style-type: none"> • Use lists to create a set of variables.
	Operators	<ul style="list-style-type: none"> • From Y3 onwards. 	<ul style="list-style-type: none"> • Use the reporter operators () + () () - () () x () () / () To perform calculations 	<ul style="list-style-type: none"> • Use the Boolean operators (AND OR NOT operators) () < () () = () () > () () and () () or () Not () To define conditions <ul style="list-style-type: none"> • Use the reporter operators () + () () - () () x () () / () To perform calculations Pick random () to () Join () () Letter () of ()

				<p>Length of () () mod () this reports the remainder after a division calculation. Round () () of ()</p>
To connect	<ul style="list-style-type: none"> Use a range of applications and devices in order to communicate ideas, work and messages. 	<ul style="list-style-type: none"> Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. 	<ul style="list-style-type: none"> Choose the most suitable applications and devices for the purposes of communication Use many of the advanced features in order to create high quality, professional or efficient communications. 	
To collect	<ul style="list-style-type: none"> Use simple databases to record information in areas across the curriculum. 	<ul style="list-style-type: none"> Device and construct databases using applications designed for this purpose in areas across the curriculum. 	<ul style="list-style-type: none"> Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. 	

All Computing work to be linked to specific topics for each Year Group, as well as explicit teaching of Computing skills and objectives in individual units such as linking in topic ideas, making cross curricular links and emphasising computing language where possible.

Topic overview:

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn Term	Then and Now	Journeys				A World at War- Evacuation (City to rural village) Local area study
Spring Term	Buildings	Art and Artists				ID- What makes us who we are? Digging up the Past- Ancient Egyptians.
Summer Term	The Sea	Change and Grow				The Best I can be- Secret Agents Playtime- The world of the theatre and acting.