



National Curriculum Expectations

KS1	<p>Computing and Coding</p> <ul style="list-style-type: none"> <input type="checkbox"/> understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions <input type="checkbox"/> create and debug simple programs <input type="checkbox"/> use logical reasoning to predict the behaviour of simple programs <p>Information Technology (Spreadsheets, Internet and Email, Art and Design, Music, Database and Graphing, Writing and Presenting, Communication and Networks)</p> <ul style="list-style-type: none"> <input type="checkbox"/> use technology purposefully to create, organise, store, manipulate and retrieve digital content <input type="checkbox"/> recognise common uses of information technology beyond school <p>E-Safety</p> <ul style="list-style-type: none"> <input type="checkbox"/> 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.
KS2	<p>Computing and Coding</p> <ul style="list-style-type: none"> <input type="checkbox"/> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts <input type="checkbox"/> use sequence, selection, and repetition in programs; work with variables and various forms of input and output <input type="checkbox"/> use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <input type="checkbox"/> 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 <p>Information Technology (Spreadsheets, Internet and Email, Art and Design, Music, Database and Graphing, Writing and Presenting, Communication and Networks)</p> <ul style="list-style-type: none"> <input type="checkbox"/> use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content <input type="checkbox"/> 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 <input type="checkbox"/> accomplish given goals, including collecting, analysing, evaluating and presenting data and information <p>E-Safety</p> <ul style="list-style-type: none"> <input type="checkbox"/> use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Reception Expectations	Keyboard/ Mouse Skills	Presenting and Creating	Communicating and Collaborating	Data	Knowledge of Technology	Computing and Coding	Online Safety
	<p>Use a mouse / ipad to rearrange objects and pictures on a screen.</p> <p>Begin using keyboard to type own name and copy a simple sentence, using space bar and full stop appropriately.</p> <p>Navigate through a preloaded website.</p>	<p>Using drawing tools: Using 2Paint a Picture to paint themed/topic pictures – mouse control</p> <p>Sound: Using 2Simple Music tool kit to develop a simple sound sequence</p>	<p>Use different forms of electronic communication in free play, e.g., email, mobile phones, hand-held devices, walkie-talkies, sound recording devices.</p> <p>Class email to another school. Adult read and talk about contents of email.</p> <p>Participate in simple video conferencing and webcam activities with adult help.</p>	<p>Use a simple pictogram or set of photos to count and organise information.</p> <p>Children should be made aware of everyday devices that sense data, e.g., bar codes, metal detectors, simple sound recorders, automatic doors, light sensors, stick-on thermometer strips.</p>	<p>Able to identify a different digital devices in school and at home.</p> <p>Know that laptops, PC and ipads are all types of 'computer' and all require care to be taken with them as they are expensive items.</p>	<p>Able to control floor turtles using simple instructions, such as forwards, backwards, right and left.</p> <p>Able to navigate a floor turtle (beebot) around a simple track, 'debugging' until success is gained.</p>	<p>Know the the internet allows us to access a digital world outside of school and home</p> <p>Know that we must not talk to people online that we do not know.</p> <p>Know that we must tell a grown up if something is wrong or upsets.</p>

Year Group Coverage

Year Group	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
1	1.1: Online Safety and Exploring Purple Mash (4) 1.2: Grouping and Sorting (2)	1.3: Pictograms (3) 1.4: Lego Builders (3)	1.5: Maze Explorers (3) Controlling Objects Y1	1.6: Animated Story Books (6)	1.7: Coding (6)	1.8: Spreadsheets (3) 1.9: Technology Outside School (2)
2	2.1: Coding (5)	2.2: Online Safety (3) 2.3: Spreadsheets (3)	2.4: Questioning (5)	2.5: Effective Searching (3) Controlling Objects Y2	2.6: Creating Pictures (5)	2.8: Presenting Ideas (4)
3	3.1: Coding (6)	3.2: Online Safety (3) Controlling Objects Y3	3.3: Spreadsheets (3) 3.4: Touch Typing (4)	3.5: Email (6)	3.6: Branching Databases (4) Controlling Objects Y3	3.7: Simulations (3) 3.8: Graphing (3)
4	4.1: Coding (6)	4.2: Online Safety (4) Controlling Objects Y4	4.3: Spreadsheets (6)	4.4: Writing for Different Audiences (5)	4.5: Logo (4) 4.6: Animation (3)	4.7: Effective Search (3) 4.8: Hardware Investigators (2)
5	5.1: Coding (6)	5.2: Online Safety (3) 5.6: 3D Modelling (4)	5.3: Spreadsheets (6)	5.4: Databases (4)	5.5: Game Creator (5)	5.7: Concept Maps (4) Controlling Objects Y5
6	6.1: Coding (6)	6.2: Online Safety (2) 6.3: Spreadsheets (5)	6.4: Blogging (5) 6.6: Networks (3)	6.5: Text Adventures (5)	6.7: Quizzing (6)	6.8: Understanding Binary (4) Controlling Objects Y6
Year Group	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6

Progression in 'Controlling Objects'

At Cambrai we see it as important that children learn to not only control 'on screen', but also 'off screen'. As such, we have developed our own expectations for control technology, using a variety of key control tools.

Reception	Beebot	<ul style="list-style-type: none"> Able to control floor turtles using simple instructions, such as forwards, backwards, right and left. Able to navigate a floor turtle (beebot) around a simple track, 'debugging' until success is gained – a step at a time
Year 1	Beebot	<ul style="list-style-type: none"> Be able to programme beebot to follow a specific path using trial and error and debugging skills to accomplish the goal (e.g, forward 5, right, forward 2, left, forward 5, right, forward 2). Set beebot off to complete the course.
Year 2	Beebot	<ul style="list-style-type: none"> Plan how to create specific shapes using beebot. Square, rectangle, simple compound shapes – test the algorithm and debug as appropriate Create own routes for others, creating recorded algorithms that others are required to work out and test

Year 3	Probot	<ul style="list-style-type: none"> • Understand that a 90 degree turn is that of a right angle, and that this knowledge can be used when controlling the probot • Able to create right-angled shapes independently • Able to create variety of other shapes, when angles are provided (e.g. triangle, hexagon)
Year 4	Probot	<ul style="list-style-type: none"> • Able to create a repeating pattern using the probot, but using knowledge of creating simple shapes and then adding a 'turn' • Understand that by adding enough turns to add to 360 degrees, a spiral pattern can be produced
Year 5	Lego We-Do <i>Using pre-programmed projects</i>	<ul style="list-style-type: none"> • Able to produce an algorithm on screen, to control a model off-screen • Use looping algorithms • Use sensors to provide an input in to the algorithm
Year 6	Lego We-Do <i>Adapting and extending pre-programmed projects] Creating own projects</i>	<ul style="list-style-type: none"> • Able to adapt set projects, using a variety of inputs and outputs to change the algorithms to produce new outcomes • Able to design new 'projects', creating models and appropriate code to control them, using inputs and creating outputs