



## Computing Assessment & Vocabulary Progression

### Key stage 1 Milestone 1

Pupils should be taught to:

Code	<ul style="list-style-type: none"> <li>understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</li> <li>create and debug simple programs</li> <li>use logical reasoning to predict the behaviour of simple programs</li> </ul>			
Communicate	<ul style="list-style-type: none"> <li>recognise common uses of information technology beyond school</li> </ul>			
Collect	<ul style="list-style-type: none"> <li>use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> </ul>			
Connect	<ul style="list-style-type: none"> <li>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.</li> </ul>			
Milestone 1	Threshold Concepts (Learning Indicators)	Basic	Advancing	Deep
Connect	Understand online risks and the age rules for sites <ul style="list-style-type: none"> <li>Participate in class social media accounts.</li> <li>Understand online risks and the age rules for sites.</li> </ul>	With the support of a teacher, some of the risks posed by online sites are explored	There is a growing awareness that sites have age restrictions and some of the reasons for this are understood <b>There is some awareness of some online risks</b>	Age rules for sites are understood and good examples of some online risks are given <b>There is a growing awareness of some of the rules in place to minimise online risks.</b>
Communicate	Use a range of applications and devices in order to communicate ideas, work and messages.	Online activity is closely monitored by a teacher With guidance, a range of devices and apps are used to communicate with others.	There is a growing awareness of a range of devices and apps that are used to communicate with others.	There is a good understanding of a wide range of devices and apps that can be used to communicate with others.
Collect	Use simple databases to record information in areas across the curriculum.	With the support of a teacher, simple databases are used.	There is a growing awareness of how databases are used.	Many good examples of using databases across the curriculum are developing

Code (Using Scratch) <b>Motion</b>	Control motion by specifying the number of steps to travel, direction and turn.	With support from a teacher, basic movement is controlled	Generally, steps and direction of turn are understood.	Precise movement is achieved using basic instructions
Code <b>Events</b>	Specify user inputs (such as clicks) to control events	With the support of structured activities, user inputs are specified.	There is some experimentation with user inputs to control events	There is a good understanding of how to control events by specifying user inputs.
Code <b>Sounds</b>	Select sounds and control when they are heard, their duration and volume.	With the support of structured activities, sounds are controlled	There is some experimentation with controlling sound	There is a good understanding of how to control sound.
Code <b>Looks</b>	Add text strings, show and hide objects, and change the features of an object.	With the support of a teacher, the basic features of an object are altered	There is some experimentation with variables to change the basic features of an object	There is a good understanding of how to change the basic features of an object.
Code <b>Control</b>	Specify the nature of events (such as a single event or a loop).	With the support of a teacher, the nature of events is specified.	There is some experimentation with specifying the nature of events	There is a good understanding of how and when to specify the nature of events.
Code <b>Draw</b>	Control when drawings appear and set the pen colour, size and shape	With the support of structured activities, drawings are created.	There is some experimentation with controlling draw tools.	There is a good understanding of how to control draw tools.
Code <b>Sensing</b>	Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?).	With the support of a teacher, user responses are explored	There is some experimentation with the nature of user responses and the required user inputs	There is a good understanding of how to seek a user response in a range of situations.

## Vocab

### Code

algorithm coding debug, programme, sequence, robot, input, control, events, volume, sound, text strings, motion, sprite, implement, executed, instructions

**communicate**

e-safety, search, internet, address, digital footprint, personal information, private,

**Connect**

search engine, presentation, powerpoint, paste, copy, text, program, technology, digital content

**Collect**

Data, handling, graph, bar, collect, question, questionnaire, y-axis, x-axis, pie, sort, record, field, line, sum,

Key stage 2 Milestone 2  
Pupils should be taught to:

Code	<ul style="list-style-type: none"> <li>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul>
Communicate	<ul style="list-style-type: none"> <li>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</li> <li>use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> </ul>
Collect	<ul style="list-style-type: none"> <li>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</li> </ul>
Connect	<ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>

Milestone 2	Threshold Concepts (Learning Indicators)	Basic	Advancing	Deep
Connect	<p><b>Give examples of the risks posed by online communications.</b> Understand the term 'copyright'. <b>Understand that comments made online that are hurtful or offensive are the same as bullying.</b> Understand how online services work. <b>Contribute to blogs that are moderated by teachers.</b></p>	<p><b>Some examples of online risks are offered, when questioned.</b> There is some awareness of the term 'copyright' and what it means. <b>There is some awareness that hurt and offence may be caused online.</b> There is some awareness of how online services work.</p>	<p><b>Whilst online, there is a growing awareness of how to keep safe.</b> The term 'copyright' is generally understood. <b>In discussion, some good examples of how to behave respectfully towards others online are provided</b> There is a growing understanding of how familiar online services work</p>	<p><b>Many good examples of how to keep safe whilst online are provided.</b> The term 'copyright' is understood and the understanding of its meaning applied to a number of contexts <b>There is a good understanding of how to behave respectfully towards others online</b> Many good examples of how online services work are provided</p>
Communicate	Use some of the advanced features of applications and	There are some attempts to create appropriate formats for	There is some interesting experimentation with formats	There is a good understanding that ideas need to be presented in

	devices in order to communicate ideas, work or messages professionally	communicating ideas.	and styles for communicating ideas	interesting and easy-to-understand formats
Collect	Devise and construct databases using applications designed for this purpose in areas across the curriculum.	There are some attempts to devise databases.	There are some good examples of database creations across the curriculum.	There are many good examples of well-planned databases that have been created across the curriculum.
Code Motion	Use specified screen coordinates to control movement.	<b>There is some awareness that movement may be controlled around specified screen coordinates.</b>	<b>There is some experimentation with controlling movement around specified screen coordinates</b>	<b>There is a good understanding that screen coordinates may be used to control movement</b>
Code Events	Specify conditions to trigger events.	<b>There is some awareness of triggers for events.</b>	<b>There is some experimentation with various triggers for events</b>	<b>There is a good understanding of how to specify triggers for events.</b>
Code Looks	Set the appearance of objects and create sequences of changes	There is some awareness of how to alter the appearance of objects and create sequences of changes	There is some experimentation with setting the appearance of objects and sequences of changes.	There is a good understanding of how to set the appearance of objects and in creating sequences of changes
Code Sound	Create and edit sounds. Control when they are heard, their volume, duration and rests.	<b>There is some awareness of how to create and edit sounds.</b>	<b>There is some experimentation with the creation and editing of sounds</b>	<b>There is a good understanding of how to create and edit sounds</b>
Code Control	Use IF-THEN conditions to control events or objects	There is some awareness that IF-THEN conditions may be set	There is some experimentation with IF-THEN conditions	There is a good understanding of how to use IF-THEN conditions
Code Sensing	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).	<b>There is some awareness that actions may be controlled by proximity or user input.</b>	<b>There is some experimentation with sensing proximity or user input to trigger actions.</b>	<b>There is a good understanding that proximity and user inputs may be used to trigger actions</b>
Code Draw	Control the shade of pens	There is some awareness that the shape of tools may be altered.	There is some experimentation with altering the shape of tools.	There is a good understanding of how to alter the shape of tools to create different effects

<b>Code</b> <b>Variables and lists</b>	Use variables to store a value. Use the functions define, set, change, show and hide to control the variables	There is some awareness of the term 'variable' and that variables may be set to store a value. <b>There is some awareness of the use of functions to control variables.</b>	There is some experimentation with using variables to store a value <b>There is some experimentation with controlling variables.</b>	The term variable is understood, and used to store a value <b>There is a good understanding of how and when to use functions to control variables.</b>
<b>Code</b> <b>Operators</b>	Use the Reporter operators () +() () - () () / () to perform calculations.	<b>Some calculations are performed using basic reporter operations.</b>	Calculations using basic reporter operations are generally accurate.	Accurate and well applied calculations are performed using basic reporter operations.

**Code**  
algorithm coding debug, programme, sequence, robot, input, variable, control, events, volume, sound, text strings, motion, sprite

**Communicate**  
blog, cyberbullying, e-safety network, web, virus, search, URL, share, spam, safety, hit, hyperlink, internet, bookmarks, browser, attachment, address, digital footprint

**Connect**  
Input device, output device, search engine, presentation, powerpoint, paste, copy, text, align, multimedia

**Collect**  
Data, handling, graph, bar, database, branching, collect, question, questionnaire, y-axis, x-axis, pie, respondent, sort, record, field, line, sum,

<b>Key stage 2 Milestone 3</b> Pupils should be taught to:	
<b>Code</b>	<ul style="list-style-type: none"> <li>design, write and debug programs that accomplish specific goals, including controlling</li> <li>or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul>
<b>Communicate</b>	<ul style="list-style-type: none"> <li>understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer</li> </ul>

	for communication and collaboration <ul style="list-style-type: none"> <li>use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> </ul>			
Collect	<ul style="list-style-type: none"> <li>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</li> </ul>			
Connect	<ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>			
<b>Milestone 3</b>	<b>Threshold Concepts (Learning Indicators)</b>	<b>Basic</b>	<b>Advancing</b>	<b>Deep</b>
Connect	<p>Some examples of the risks of online communities and the measures to take to minimise risks are given.</p> <p>There is an awareness that copyright theft is illegal. Online comments are responsible and sensitive</p> <p>There is an awareness of how simple networks are set up and used.</p>	<p><b>Some examples of the risks of online communities and the measures to take to minimise risks are given.</b></p> <p>There is an awareness that copyright theft is illegal. <b>Online comments are responsible and sensitive</b></p> <p>There is an awareness of how simple networks are set up and used.</p>	<p><b>There is a good understanding of the risks of online communities and the measures to take to minimise risks</b></p> <p>There is a good understanding that copyright theft is illegal. <b>There is a good awareness of the effect of online comments.</b></p> <p>Comments made online are responsible and sensitive. There is a good understanding of how simple networks are set up and used.</p>	<p><b>There is a thorough understanding of the risks of online communities and the measures to take to minimise risks</b></p> <p><b>There is a thorough understanding that copyright theft is illegal.</b></p> <p><b>Explanations show an in-depth understanding of the effect of irresponsible online comments. Comments made are responsible and sensitive.</b></p> <p>There is a thorough understanding of how networks are set up and used.</p>
Communicate	<p>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.</p>	<p>Some choices are made in selecting and using apps and devices for communicating ideas. Some high-quality work is produced.</p>	<p><b>Good choices are made in selecting and using apps and devices for communicating ideas.</b></p> <p>There are many examples of high-quality work.</p>	<p><b>Excellent choices are made in selecting and using apps and devices for communicating ideas.</b></p> <p>There are widespread and very good examples of high-quality work.</p>
Collect	<p>There is some awareness of how to devise, construct and manipulate data.</p>	<p>There is some awareness of how to devise, construct and manipulate data.</p>	<p>The manipulation of data is efficient and its presentation is becoming professional.</p>	<p>The manipulation of data is very well thought out and reasoned well. There is a high degree of professional presentation of data.</p>

Code <b>Motion</b>	Set IF conditions for movements. Specify types of rotation giving the number of degrees.	<b>There is some experimentation with conditions and degrees of movement</b>	<b>There are some good examples of the use of conditions and degrees of movement.</b>	<b>There are many well-executed examples of the use of conditions and degrees of movement.</b>
Code <b>Events</b>	Set events to control other events by 'broadcasting' information as a trigger.	There is some awareness of how to broadcast events	<b>There are some good examples of broadcast events.</b>	<b>There are many very good examples of choosing, using and explaining broadcast events.</b>
Code <b>Looks</b>	Change the position of objects between screen layers (send to back, bring to front).	<b>There is some experimentation with screen layers.</b>	There are some good examples of effective manipulation of objects between screen layers	Screen layers are used effectively to control the position and visibility of objects
Code <b>Sounds</b>	Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.	There is some experimentation with importing and editing sounds.	<b>There are some good examples of importing and editing sounds.</b>	<b>There is a very good understanding of the process of sound import and the subsequent editing of the sound to create interesting effects.</b>
Code <b>Control</b>	Use IF-THEN-ELSE conditions to control events.	<b>There is some awareness of the use of IF-THEN-ELSE condition</b>	There are some good examples of the use of IF-THEN-ELSE conditions to control events or objects	<b>There is a thorough understanding of the control conditions IF-THEN-ELSE</b>
Code <b>Sensing</b>	Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.	There is some awareness that there are a range of sensing tools that may be used to control events or actions.	<b>There are some good examples of using a range of sensing tools to control events or actions.</b>	There are many very good well-chosen examples of, with explanations for, the use of sensing tools to control events or actions
Code <b>Draw</b>	Combine the use of pens with movement to create interesting effects.	<b>There is some experimentation with combining tools with movement.</b>	Some interesting effects are gained through combining tools with movement.	Some excellent effects are gained through well-planned combinations of tools and movement
Code	Use lists to create a set of variables	<b>There is some awareness of how to</b>	There are some good examples of	<b>There is a thorough</b>

<b>Variables and lists</b>		<b>create a set of variables</b>	sets of variables in a range of situations.	<b>understanding of how to create and use sets of variables</b>
<b>Code Operators</b>	Use the Boolean operators <code>() &lt; ()</code> <code>() = ()</code> <code>() &gt; ()</code> and <code>() or()</code> <code>Not()</code> to define conditions. Use the Reporter operators <code>() + ()</code> <code>() - ()</code> <code>() * ()</code> <code>() / ()</code> to perform calculations. Pick <code>Random ()</code> to <code>Join ()</code> <code>Letter ()</code> of <code>Length of ()</code> <code>Mod ()</code> (this reports the remainder after a division calculation). <code>Round ()</code> of <code>()</code> .	There is some understanding of the use of Boolean operators to define conditions <b>There is some understanding of the use of operators to perform calculations and to refine the reporting of results</b>	<b>There are some good examples of the use of Boolean operators to define conditions.</b> There are some good examples of the use of operators to perform calculations and to refine the reporting of results.	There is a thorough understanding of how and when to use Boolean operators. <b>There is a thorough understanding of the use of operators to perform calculations and to refine the reporting of results</b>

<b>Code</b> algorithm coding debug, programme, sequence, robot, input, variable, control, events, volume, sound, text strings, motion, sprite, python, HTML, operators
<b>Communicate</b> cyberbullying, trolling, apps, e-safety network, web, virus, search, URL, share, spam, safety, hit, hyperlink, internet, bookmarks, browser, attachment, address, digital footprint, LAN, WAN
<b>Connect</b> Input device output device, search engine, presentation, powerpoint, paste, copy, text, align, multimedia
<b>Collect</b> Data, handling, graph, bar, database, branching, collect, question, questionnaire, y-axis, x-axis, pie, respondent, sort, record, field, line, sum, manipulate