

# Entitlements for Computing 2024

Entitlement documents provide the context within which the skills detailed in [the Bailiwick Curriculum](#) should be applied. The two documents therefore need to be read together. Schools may go beyond these requirements and teach other content on top of this and Key Stage 2 content may be taught in Key Stage 1.

This document is mandatory for mainstream schools from January 2024, although schools can use part or all of this document before this if they wish. Special schools should adapt these entitlements for the unique needs of their children, while aiming, where appropriate, to cover the same main headings.

Where there is a tension between covering all the material in this document and ensuring that what is being taught is understood and remembered, schools should prioritise learning over coverage. It is better for children to know 75% of a curriculum well than to have covered 100% but only understand and remember 50% of it.

This entitlement document provides broad parameters within which individual schools need to develop their own more detailed curriculum. In the table below, black type refers to mandatory elements, grey italicised type refers to suggested examples that are not mandatory.

By the <u>end</u> of Key Stage 1	By the <u>end</u> of Key Stage 2	By the <u>end</u> of Key Stage 3
<p>Computing is a practical subject. The expectation is that the vast majority of pupils' learning, including the acquisition of vocabulary, will be through the practical use of digital technology to undertake tasks and achieve certain outcomes.</p> <p style="text-align: center;"><b>Digital Literacy (DL)</b></p> <p>Digital literacy encompasses the ability to produce and share images, audio, designs and text using digital technology for a specific purpose or audience, as well as the thoughtful and considered consumption of digital content.</p> <p>Some of this document can be directly taught in other subjects (e.g. the digital media section of the art entitlement document).</p>		
<ul style="list-style-type: none"> <li>a. Know that computers and other devices can be used to create images, video, audio, designs and text and use this knowledge to create content. (PP, TU)</li> <li>b. Know that different forms of content (see bullet point above) convey information. (FI, SG)</li> <li>c. Know that online content belongs to somebody. (KYW,</li> <li>d. Know how to save a file, with assistance. (FI, SG, TU, KYW)</li> </ul>	<ul style="list-style-type: none"> <li>a. Know that sharing content with others is easy but must be done thoughtfully.</li> <li>b. Know that online content should not be used without permission.</li> <li>c. Know that the source of online content needs to be acknowledged.</li> <li>d. Know the importance of choosing design elements to suit the purpose and audience (<i>e.g. an appropriate typeface</i>).</li> </ul>	<p>Revisit the content from Key Stage 2 in progressively more challenging contexts and:</p> <ul style="list-style-type: none"> <li>a. Know the legal issues of sharing materials with others and concepts involved with copyright and plagiarism.</li> <li>b. Know how different applications can work in conjunction to create an overall multimedia piece.</li> <li>c. Know how certain choices of design can impact end users with additional</li> </ul>

e. Know how to send a file to a chosen recipient (*e.g. Airdrop to the teacher*). (*PP, SG, TU*)

- Know the following vocabulary:
  - Airdrop \*
  - audio
  - content
  - design
  - device
  - image
  - online
  - save
  - text
  - video

\*where proprietary names change, the vocabulary taught should also change

e. Know that applied effects have meaning and so must be used thoughtfully (*e.g. a gothic typeface looks old-fashioned, a sepia filter on a photograph looks old-fashioned, applying a robot voice to a recording will change the meaning of the message, the music used in a video affects the mood*).

- f. Know how to work on a document collaboratively with other users.
- g. Know how to save files in appropriate places and safely share work.
- h. Know that content in the media is manipulated and is not a full representation.
- i. Know how to describe content separate from its impact and give examples.
- j. Know how to describe the context of created and consumed content (*e.g. who made it, why was it made, who is the audience, where will they consume it*).
- k. Know that more is not always better. (*e.g. 8 images on a page is not better than 1 carefully chosen image*)
- l. Know that many media messages are designed to gain profit and/or power.
- m. Know that media messages impact me as well as others.
- Know the following vocabulary (and revise KS1 vocabulary):
  - audience
  - purpose
  - share
  - typeface
  - authorship/constructedness
  - format
  - content/message
  - purpose/motive

needs and how to adjust creations to meet their needs.

- d. Know how to give digital feedback using 'commenting' tools.
- e. Know how to choose the appropriate output file type for a given purpose.
- f. Know how to create a folder structure to organise work.
- g. Know how to save files in appropriate places.
- h. Know how to choose the appropriate output file type for a given purpose and save in an appropriate file structure with suitable naming conventions.
- i. Know how to capture and import other media from external sources.
- j. Know how to choose the appropriate application for the task.
- k. Know how to reference any work taken from external sources.
- l. Know that changes to content can be undone and redone (i.e. using the "Step Backwards" and "Step Forwards" functions).
- Know the following vocabulary (and revise KS2 vocabulary):
  - capture/import
  - client
  - copyright
  - end user
  - filetype
  - folder structure
  - output
  - plagiarism
  - reference
  - source

	<ul style="list-style-type: none"> <li>○ deconstruct</li> </ul>	
<p><b>Images: (I)</b></p> <ol style="list-style-type: none"> <li>a. Know to hold the camera still. (PP)</li> <li>b. Know that everything required must be in the frame. (PP)</li> <li>c. Know how to make the subject clear in the frame (i.e. in focus, not obstructed). (PP)</li> <li>d. Know how to use a grid to help alignment (<i>e.g. to make the horizon level</i>). (PP)</li> <li>e. Know how to edit images (<i>e.g. to move, turn and change the sizes of images</i>)</li> <li>f. Know how to choose one photograph out of a series taken and explain the reason. (PP)</li> <li>g. Know that images we see have been edited.</li> <li>h. Know that images are used to make us feel or think particular things.</li> <li>○ Know the following vocabulary: <ul style="list-style-type: none"> <li>○ edit</li> <li>○ frame</li> <li>○ viewfinder</li> <li>○ under / over exposed</li> <li>○ focus</li> <li>○ zoom</li> <li>○ grid</li> </ul> </li> </ol>	<p><b>Images: (I)</b></p> <ol style="list-style-type: none"> <li>a. Know that choices made about the content must suit the needs of the audience (<i>e.g. a photograph needs to include the object but other unnecessary objects need to be moved out of the frame</i>).</li> <li>b. Know how to use the <a href="#">rule of thirds</a> to compose pictures.(PPb)</li> <li>c. Know how to edit images with purpose (<i>e.g. to make a photograph look old, to crop out distractions</i>).</li> <li>d. Know that digital content can be changed easily (<i>e.g. using a flood fill to quickly fill the background of an image, crop an image to focus a viewer's attention</i>). (PPm)</li> <li>e. Know how to edit images for emotional effect. (PPm)</li> <li>f. Know that changes to content can be undone easily (i.e. using the “undo” function).</li> <li>g. Know how to create a photo montage. <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS1 vocabulary): <ul style="list-style-type: none"> <li>○ filter</li> <li>○ layers</li> <li>○ montage</li> <li>○ rule of thirds</li> <li>○ undo</li> </ul> </li> </ul> </li> </ol>	<p><b>Images:(I)</b></p> <ol style="list-style-type: none"> <li>a. Know the importance of the composition of the image.</li> <li>b. Know how to edit images to fulfil a purpose.</li> <li>c. Know how Bitmap and Vector images work and be able to describe the situations in which they work best.</li> <li>d. Know that imagery can be modified to show different information (e.g. cropping images to remove important story elements, ‘beautifying’ images to set a unrealistic beauty goals for viewers)</li> <li>e. Know that modified images can have emotional impacts on viewers. <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS2 vocabulary): <ul style="list-style-type: none"> <li>○ bitmap</li> <li>○ blend</li> <li>○ burn</li> <li>○ crop</li> <li>○ dodge</li> <li>○ hue</li> <li>○ lasso</li> <li>○ level</li> <li>○ pixel</li> <li>○ render</li> <li>○ saturation</li> <li>○ skew</li> <li>○ step forward/backward</li> <li>○ vector</li> </ul> </li> </ul> </li> </ol>
<p><b>Video: (V)</b> (see Moving Pictures unit)</p> <ol style="list-style-type: none"> <li>a. Know that digital devices can record video and create animations (MP)</li> </ol>	<p><b>Video:(V)</b> (see Moving Pictures unit)</p> <ol style="list-style-type: none"> <li>a. Know that video is a combination of many elements (<i>e.g. moving images, sound effects, text, speech, music, gesture</i>).</li> </ol>	<p><b>Video:(V)</b></p> <ol style="list-style-type: none"> <li>a. Know how to edit video to fulfil a purpose.</li> </ol> <p>Media Literacy links with English and PSCHE curriculum for video work.</p>

<ul style="list-style-type: none"> <li>b. Know how to use digital devices to record video and create animations (e.g. stop frame) (MP)</li> <li>c. Know how to keep the camera still.(PP, MP)</li> <li>d. Know that everything required must be in the frame. (PP, MP)</li> <li>e. Know how to make the subject clear in the frame (i.e. in focus, not obstructed) (PP, MP)</li> <li>f. Know how to use a grid to help alignment (e.g. to make the horizon level). (PP, MP)</li> <li>g. Know that video content is carefully edited before we watch it (e.g. special effects, camera angle).</li> <li>h. Know that video combines pictures and sounds to make us feel or think particular things. <ul style="list-style-type: none"> <li>● Know the following vocabulary: <ul style="list-style-type: none"> <li>○ camera angle</li> <li>○ device</li> <li>○ focus</li> <li>○ level</li> <li>○ record</li> <li>○ special effects (fx)</li> <li>○ subject</li> <li>○ video</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>b. Know that modes (e.g. speech, music etc) are combined to achieve particular outcomes.</li> <li>c. Know how to film different shot types for a purpose or audience (e.g. close up, high angle).</li> <li>d. Know how to use a storyboard to plan a short video.</li> <li>e. Know how to edit a film to make meaning.</li> <li>f. Know how to combine modes (e.g. moving images, gesture) for emotional effect.</li> <li>g. Know that news content is partial (i.e only part of the story from a particular perspective). <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS1 vocabulary): <ul style="list-style-type: none"> <li>○ close-up</li> <li>○ gesture</li> <li>○ high/low angle</li> <li>○ Image</li> <li>○ greenscreen</li> <li>○ mode</li> <li>○ purpose</li> <li>○ shot</li> <li>○ storyboard</li> <li>○ wide shot</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS2 vocabulary): <ul style="list-style-type: none"> <li>○ chroma keying</li> <li>○ dubbing</li> <li>○ file type</li> <li>○ layer</li> <li>○ overlay</li> <li>○ revision</li> <li>○ test plan</li> <li>○ transition</li> <li>○ version</li> </ul> </li> </ul>
<p><b>Audio:(A)</b></p> <ul style="list-style-type: none"> <li>a. Know how to record a clear, useful sound (e.g. a pupil's voice). (SG)</li> <li>b. Know how to create a pattern of sound using blocks of sound. (e.g. loops in music). (TU)</li> <li>c. Know how to edit a pattern of sound and music. (SG, TU)</li> <li>d. Know that audio content is carefully edited before we listen to it.</li> <li>e. Know that audio content is edited to make us feel or think particular things. <ul style="list-style-type: none"> <li>● Know the following vocabulary: <ul style="list-style-type: none"> <li>○ audio</li> </ul> </li> </ul> </li> </ul>	<p><b>Audio:(A)</b></p> <ul style="list-style-type: none"> <li>a. Know how to combine and edit sounds together effectively to meet a specific purpose and audience.</li> <li>b. Know how to create and edit a purposeful pattern of sound using a device.</li> <li>c. Know how to edit audio effects to make meaning (e.g. scary music to build tension).</li> <li>● Know the following vocabulary (and revise KS1 vocabulary): <ul style="list-style-type: none"> <li>○ combine</li> <li>○ create</li> <li>○ edit</li> </ul> </li> </ul>	<p><b>Audio:(A)</b></p> <ul style="list-style-type: none"> <li>a. Know how to edit audio to fulfil a purpose.</li> </ul> <p>Media Literacy cross-over with English and PSCHE curriculum for audio work.</p> <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS2 vocabulary): <ul style="list-style-type: none"> <li>○ blending</li> <li>○ codec</li> <li>○ file type</li> <li>○ layer</li> <li>○ mono</li> <li>○ stereo</li> </ul> </li> </ul>

<ul style="list-style-type: none"> <li>○ block</li> <li>○ pattern</li> <li>○ loop</li> <li>○ edit</li> <li>○ record</li> <li>○ sound</li> </ul>	<ul style="list-style-type: none"> <li>○ purpose</li> <li>○ track</li> </ul>	
<p><b>Designs, including Text: (DiT)</b></p> <ol style="list-style-type: none"> <li>a. Begin to know how to use a keyboard efficiently using two hands.(KYW,</li> <li>b. Know to type sentences using capital letters and full stops. (KYW</li> <li>c. Know how to change typeface, colour and font size. (KYW</li> <li>d. Know how to change the layout of content. (<i>e.g. move a picture to the top of a page</i>). (KYW</li> <li>e. Know that documents are carefully edited before we see them to make us feel or think particular things.</li> </ol> <ul style="list-style-type: none"> <li>● Know the following vocabulary: <ul style="list-style-type: none"> <li>○ font size</li> <li>○ keyboard</li> <li>○ home keys</li> <li>○ layout</li> <li>○ type</li> <li>○ typeface</li> </ul> </li> </ul>	<p><b>Designs, including Text: (DiT)</b></p> <ol style="list-style-type: none"> <li>a. Know how to use a keyboard efficiently.</li> <li>b. Know how to use shortcuts (<i>e.g. CTRL and C to copy</i>).</li> <li>c. Know that content and layout are separate processes and so you should do one before the other.</li> <li>d. Know that layout changes must suit the purpose and know how to do this.</li> <li>e. Know how to use automated functions of devices to work more efficiently (<i>e.g. squiggly line under text might indicate a spelling or grammar error, shortcuts, undo key</i>).</li> <li>f. Know how to edit content to make meaning.</li> </ol> <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS1 vocabulary): <ul style="list-style-type: none"> <li>○ automated</li> <li>○ content</li> <li>○ functions</li> <li>○ layout</li> <li>○ shortcut</li> </ul> </li> </ul>	<p><b>Designs, including Text: (DiT)</b></p> <ol style="list-style-type: none"> <li>a. Know how to create a document which is completely suitable for a target group of people.</li> <li>b. Know how to use page layouts and formatting to improve the look of work.</li> <li>c. Know how to give appropriate feedback to others to help them improve their work.</li> <li>d. Know how to create a ‘house style’ for a document and use it appropriately to ensure the document is themed and consistent throughout.</li> <li>e. Know how to use multiple applications together to improve on the documents created such as using image editing and data handling software.</li> <li>f. Know how to use appropriate review and automation tools to create as flawless a document as possible.</li> <li>g. Know how to explain how media can be written to take a biased point of view.</li> </ol> <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS2 vocabulary): <ul style="list-style-type: none"> <li>○ automation</li> <li>○ biased</li> <li>○ formatting</li> <li>○ house style</li> <li>○ mailmerge</li> <li>○ margin</li> <li>○ serif/sans serif</li> <li>○ target audience</li> <li>○ test plan</li> </ul> </li> </ul>

**Researching Information:(RI)**

- a. Know how to access a website with guidance. (Guidance includes providing a clickable link or QR code). (SG)
- b. Know how to record useful information from an online source.
- c. Know that not all information found is true or useful. (SG)
- d. Know that a computer cannot decide if information is true or useful so the user has to. (SG)
- e. Know how to choose which information to use and begin to talk about why that information was chosen. (SG)
- f. Know that information is edited to make us feel or think particular things.
- g. Know that a digital map is a way of showing location information in a useful format.(MM)
- h. Know how to use a digital map to find information with guidance. (MM)
- Know the following vocabulary:
  - link
  - QR code
  - website

**Researching Information:(RI)**

- a. Know that sources of information can be digital (i.e. an online search) or analogue (i.e. using the school library).
- b. Know that key words should be used to quickly find relevant results.
- c. Know that digital searches require the user to look for quality results. *(e.g. the first item in the search results is not necessarily the most relevant, reliability of information is more important than quantity).*
- d. Know how to extract and combine useful information from a set of search results.
- e. Know that search engines *(e.g. Bing, Duckduckgo, Google, Yahoo)* are online catalogues, not collections of information themselves.
- f. Know that not every online source is reliable, that sources need to be checked *(i.e. finding out who has provided the information, checking the information elsewhere)* and the appropriate information needs to be selected for the task at hand.
- g. Know how to evaluate digital content using a number of strategies *(e.g. use what you already know, consider the source, compare sources)* and be able to explain how choices from search results have been made.
- h. Know that some sources are more biased than others.
- i. Know the difference between misinformation and disinformation and give examples. (Misinformation is a mistake, disinformation is deliberate).

**Researching Information: (RI)**

- a. Know how to use a search engine efficiently.
- b. Know how to use multiple advanced searching tools within a search engine such as filters, phrases and term exclusions.
- c. Know what elements to look for in a safe URL.
- d. Know that cross-referencing information from multiple sources creates more valid and valuable results.
- e. Know that information can be biased and be able to use multiple sources to gain a balanced set of information.
- f. Know that media platforms can skew information to tell a particular story
- g. Know how to use built-in search tools within applications to research efficiently.
- Know the following vocabulary (and revise KS2 vocabulary):
  - accuracy
  - advanced search tools
  - cross-referencing
  - exclusion
  - filter
  - http(s)
  - phrasing
  - URL
  - validity


	<ul style="list-style-type: none"> <li>j. Know that sharing unreliable or biased content can have a negative impact.</li> <li>k. Know how to use a digital map to find relevant information.</li> <li>l. Know how to use a digital map to present information to suit the task at hand.</li> <li>• Know the following vocabulary (and revise KS1 vocabulary): <ul style="list-style-type: none"> <li>○ analogue</li> <li>○ biased</li> <li>○ digital</li> <li>○ data</li> <li>○ information</li> <li>○ disinformation</li> <li>○ misinformation</li> <li>○ reliable</li> <li>○ search engine</li> <li>○ source</li> <li>○ useful</li> </ul> </li> </ul>	
<p><b>Data Handling: (DH)</b></p> <ul style="list-style-type: none"> <li>a. Know how to input data accurately (<i>e.g. into a simple graphing programme</i>). (DWD)</li> <li>b. Know that computers are good tools for storing and sorting data. (DWD)</li> <li>c. Know that computers can do repetitive tasks quickly and save us the trouble. (DWD)</li> <li>d. Know that some questions can have yes/no answers (<i>e.g. Does the person have black hair? Is this an even number?</i>) (DWD)</li> <li>e. Know that many everyday devices contain sensors (<i>e.g. outside lights, automatic doors</i>). (MU)</li> <li>f. Know that digital devices can measure variables like light or sound level. (MU)</li> <li>g. Know how to read, and begin to understand, values from a digital sensor. (MU)</li> </ul>	<p><b>Data Handling: (DH)</b></p> <ul style="list-style-type: none"> <li>a. Know that computers can do repetitive tasks more quickly and efficiently than people.</li> <li>b. Know how to identify common features within a set of items (<i>e.g. minibeast leg numbers</i>) and sort the items based on that feature.</li> <li>c. Know that people need to check the accuracy of data (<i>e.g. Is it reasonable that a yr 4 child is 115m tall?</i>).</li> <li>d. Know that information can be presented to make us feel or think particular things (<i>e.g. map projections, scales on graphs</i>).</li> <li>e. Know that computers and other devices can make very accurate measurements of environmental variables (<i>e.g. temperature, light levels, sound, CO<sub>2</sub> levels</i>).</li> </ul>	<p><b>Data Handling: (DH)</b></p> <ul style="list-style-type: none"> <li>a. Now how to do a complex search within a set of data using 'Boolean' (true/false) and 'relational' (= &lt; &gt; etc.) operators.</li> <li>b. Know how to use simple formulae that include cell references.</li> <li>c. Know about the importance of 'backups' and how to keep data safe.</li> <li>d. Know that accuracy of data is important to avoid unreliable results.</li> <li>e. Know how to model data to predict results.</li> <li>f. Know the difference between data and information.</li> <li>g. Know how to question whether data is accurate and reasonable for the data processing that has taken place.</li> <li>h. Know how to present data in a suitable way for a target audience.</li> </ul>

<ul style="list-style-type: none"> <li>h. Know that data from sensors can help us make decisions.(MU)</li> <li>i. Know how to make a decision considering data from a digital sensor (<i>e.g. where is the best place to put a pot plant?</i>). (MU) <ul style="list-style-type: none"> <li>● Know the following vocabulary: <ul style="list-style-type: none"> <li>○ data</li> <li>○ input</li> <li>○ sensor</li> <li>○ value</li> <li>○ variable</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>f. Know how to accurately read and understand the values from a digital sensor.</li> <li>g. Know how to make a prediction based on some data from a digital sensor (<i>e.g. predict how the temperature of a jacket potato might continue to change over time</i>).</li> <li>h. Know that data from sensors can help us make informed decisions and use this information practically (<i>e.g. which material to use for soundproofing based on experimental results</i>). <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS1 vocabulary): <ul style="list-style-type: none"> <li>○ accuracy</li> <li>○ prediction</li> <li>○ Sort</li> <li>○ Information</li> <li>○ IoT</li> <li>○ big data</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Know how to use queries in a simple database.</li> <li>j. Know how to use IF and LOOKUP statements to find data from a source.</li> <li>k. Know how data can be used in ways to convince and coerce others and understand how to compare data sets. <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS2 vocabulary): <ul style="list-style-type: none"> <li>○ backup</li> <li>○ Boolean</li> <li>○ data Set</li> <li>○ formula</li> <li>○ function</li> <li>○ information</li> <li>○ model</li> <li>○ query</li> <li>○ relational</li> <li>○ search</li> <li>○ target audience</li> </ul> </li> </ul> </li> </ul>
---	---	--

**Computer Science**

<p><b>Computational Thinking and Logic: (CTL)</b></p> <ul style="list-style-type: none"> <li>a. Know and talk about everyday devices that follow a set of instructions (<i>e.g. a washing machine</i>).</li> <li>b. Know that an algorithm is a set of steps that can be followed to finish a task (in a way that <b>humans</b> understand).</li> <li>c. Know that a code is a set of steps expressed so that it can be followed by a computer or device (in a way that <b>computers</b> understand).</li> <li>d. Know how to explain the difference between an algorithm and a code.</li> <li>e. Know how to follow each step of a set of instructions (algorithm).</li> <li>f. Know what a bug is (i.e. an error</li> </ul>	<p><b>Computational Thinking and Logic:(CLT)</b></p> <ul style="list-style-type: none"> <li>a. Know that code can be written in a block based language.</li> <li>b. Know how to look at a piece of code and predict what will happen.</li> <li>c. Know how to use simple ‘repeat’ and ‘forever’ loops to improve a code.</li> <li>d. Know some reasons why a program may not work, suggest solutions and use this practically to correct a code.</li> <li>e. Know what the outcomes of code will be for different objects.</li> <li>f. Know that programs need to be as succinct as possible.</li> <li>g. Know that a computer can be programmed to make choices.</li> <li>h. Know how to decompose a problem</li> </ul>	<p><b>Computational Thinking and Logic: (CLT)</b></p> <ul style="list-style-type: none"> <li>a. Know how to plan simple algorithms using flowcharts or mindmaps.</li> <li>b. Know how to design simple algorithms in graphical and text based programming languages.</li> <li>c. Know how to use variables in my programs.</li> <li>d. Know what a logical operator is.</li> <li>e. Know how to debug common errors in simple programs in graphical and text based programming languages.</li> <li>f. Know how to include advanced features such as data sources and writing results to an external file.</li> <li>g. Know how programming can affect physical aspects such as robots and control devices.</li> </ul>
---	--	---



<p><i>e.g. a typo, a syntax error</i>) and what it means to 'debug' (i.e. spot the error and correct it).</p> <p>g. Know how to create and record an algorithm which a classmate can follow.</p> <p>h. Know how to explain mistakes to 'debug' my instructions.</p> <p>i. Know that a computer requires clear and precise instructions to carry out an action.</p> <p>j. Know how to use directional language.</p> <p>k. Know how to interpret code written using simple directional language.</p> <p>l. Know how to turn my algorithm into code on different devices.</p> <p>m. Know how to program a robot or device.</p> <p>n. Be able to predict what will happen with a piece of code.</p> <p>o. Know that there may be more than one solution to complete an action.</p> <p>p. Know how to spot mistakes in an algorithm/code and be able to correct them.</p> <ul style="list-style-type: none"> <li>● Know the following vocabulary: <ul style="list-style-type: none"> <li>○ algorithm</li> <li>○ bug</li> <li>○ code</li> <li>○ debug</li> <li>○ robot</li> </ul> </li> </ul>	<p>into smaller parts in order to make it easier to explain (<i>e.g. write code to draw a window and then use this code several times when drawing a house</i>).</p> <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS1 vocabulary): <ul style="list-style-type: none"> <li>○ block-based</li> <li>○ forever</li> <li>○ loop</li> <li>○ outcome</li> <li>○ program</li> <li>○ repeat</li> </ul> </li> </ul>	<p>h. Know what is meant by pseudocode and how it can be used to plan a programming task.</p> <ul style="list-style-type: none"> <li>● Know the following vocabulary (and revise KS2 vocabulary): <ul style="list-style-type: none"> <li>○ data source</li> <li>○ flowchart</li> <li>○ input</li> <li>○ language</li> <li>○ mindmap</li> <li>○ output</li> <li>○ plan</li> <li>○ pseudocode</li> <li>○ sensor</li> <li>○ storage</li> <li>○ subroutine</li> <li>○ syntax</li> <li>○ variable</li> </ul> </li> </ul>
<p><b>Hardware and Software: (HS)</b></p> <p>a. Know that many digital devices connect to each other: some are wireless, but some need a wire. (PP,</p> <p>b. Know that many digital devices need to connect to a network to function fully (<i>e.g. iPads</i>). (PP</p> <p>c. Know how to tell if a device is connected to a network or not (i.e. dark bars on the "fan"  ). (PP</p>	<p><b>Hardware and Software: (HS)</b></p> <p>a. Know that computer technology is used in many devices at home and at school.</p> <p>b. Know which devices are appropriate for different tasks (<i>e.g. an iPad is more appropriate than a Chromebook to take on a trip to take photographs</i>).</p>	<p><b>Hardware and Software: (HS)</b></p> <p>a. Know some of the different internal components of a computer system.</p> <p>b. Know the difference between Input and Output devices and list examples of each.</p> <p>c. Know what is meant by storage devices, list examples of each and be able to explain where each of these are most appropriate.</p>

- d. Know about some functions/devices that need network connectivity (*e.g. data logger*). (PP,
- e. Know that different apps can be used to do different tasks.
- Know the following vocabulary:
  - connected
  - network
  - wire
  - wireless

- c. Know and explain why a device has been chosen for a task.
- d. Know that some networks are local and others are wider.
- e. Know that there are different ways of devices connecting to each other: bluetooth, wifi, etc.
- f. Know about the different types of networks used at home and in school (*e.g. bluetooth has a limited range*).
- g. Know how the 'cloud' is used to store our work (i.e a remote location which offers anytime, anywhere access).
- h. Know that some tasks require extra devices to be connected (*e.g. a data logger or an external microphone*).
- i. Know how to choose the best app for the task at hand.

Know the following vocabulary (and revise KS1 vocabulary):

- app (application)
- bluetooth
- cloud
- hotspot
- wifi

- d. Know what is meant by accessibility peripheral hardware, list some examples and how they can help people with additional needs.
- e. Know what system and application software is and list examples with their appropriate uses.
- f. Know how to identify the strengths and weaknesses of a device for a particular task.
- g. Know the different features of different types of network and explain the ideal uses for various topologies.
- h. Know about different types of local and mobile wireless communication methods and the advantages and disadvantages of each.
- i. Know how to explain what the cloud is and explain the advantages and disadvantages of hosted services.
- j. Know what is meant by bandwidth and latency and how to make improvements on data transfer speeds.
- Know the following vocabulary (and revise KS2 vocabulary):
  - bandwidth
  - client
  - CPU
  - GPU
  - hardware
  - hosted software
  - LAN
  - latency
  - local software
  - mobile broadband
  - network resource
  - PAN
  - RAM
  - ROM
  - server
  - software
  - topology (Star, Ring Line)

- WAN

### Digital Citizenship

Project Evolve resources should be used in teaching online safety. These may be supplemented by other resources. Some of this content may be taught within PHSE

#### Online Safety: (OS)

- Know that there may be people online who could upset or harm me.
  - Know that if something on a device worries or frightens me I should tell someone I trust and give an example.
  - Know that there are rules about my use of technology (*e.g. at home and at school*) and I should follow them.
  - Know that passwords and other measures (*e.g. fingerprint*) can help to keep information safe.
  - Know that the internet can be used to communicate with people I know.
  - Know that there may be information online about me that other people can see.
  - Know that other people's online identity can be different from that in real life.
  - Know what constitutes personal information (*e.g. home address, birthday*).
  - Know that there are rules about what information (including personal) I share and I should follow them to keep safe.
- Know the following vocabulary:
    - online safety (this term should be used rather than e-safety)
    - password

#### Online Safety: (OS)

- Know some of the roles of computer technology in everyday life and the benefits and risks it brings and give some examples (*e.g. immediate information, too much time gaming*).
- Know that there are many benefits and risks from being online and give some examples (*e.g. keeping in contact with family or friends, having important data stolen*).
- Know that I must consider the benefits and risks before I act online and explain my choices.
- Know that spending too much time using digital technology can have a negative impact on me and be able to limit the amount of time I use it.
- Be able to explain some of the benefits of an online action, (*e.g. posting on a website*) and some ways to reduce the risks of that action.
- Know that websites and online platforms have rules about their use (*e.g. age limits*) and I should follow them.
- Know that I am responsible for keeping my online information safe.
- Know that my online actions can affect myself and my friends positively and negatively and act accordingly (*e.g. think carefully before I post a photo*).

#### Online Safety: (OS)

- Know that there are dangers associated with living and working online and have an understanding of where to go if you have concerns.
- Know how personal information can be kept private and what information should be released online.
- Know how to act in a safe way using the internet e.g use of passwords and usernames
- Know what cyberbullying is and the impact it has on people who are bullied.
- Know how to communicate how to be safe online and how to combat cyberbullying to others
- Know the legal consequences of not being responsible online.
- Know the concept of a digital footprint.
- Know that text, video and images released online are considered permanent and can have an impact in the future.
- Know how to demonstrate maturity when dealing with online issues and social media.
- Know what is meant by cybercrime.
- Know what to look for in phishing, pharming, spear phishing and smishing attacks.
- Know what is meant by a virus, spyware, adware and malware and

<ul style="list-style-type: none"> <li>○ personal information</li> </ul>	<ul style="list-style-type: none"> <li>i. Know that some of the information about me online could have been created by others.</li> <li>j. Know that internet companies collect my data and often share it.</li> <li>k. Know how to respect myself and others when online.</li> <li>l. Know that some people that I communicate with online may want to do me or my friends harm.</li> <li>m. Know how to make positive contributions and be part of online communities (<i>e.g. Seesaw, Class Dojo</i>) and give examples.</li> <li>n. Know how to make good choices regarding online behaviour (<i>e.g. use social media safely and well</i>) and act accordingly.</li> <li>o. Know that I have an online reputation which will allow other people to form an opinion of me.</li> <li>p. Know how to encourage others to make good choices regarding online behaviour.</li> <li>q. Know that the information and content I post can affect me and others in a positive and negative way.</li> <li>r. Know how to support others who are having difficulties online (<i>e.g. get them to tell a trusted adult</i>).</li> <li>s. Know how to make informed, safe, legal and appropriate choices before acting online (<i>e.g. sensibly manage my digital footprint</i>).</li> </ul> <ul style="list-style-type: none"> <li>● Know the following vocabulary: <ul style="list-style-type: none"> <li>○ biometrics</li> <li>○ digital footprint</li> </ul> </li> </ul>	<p>how to protect against them.</p> <ul style="list-style-type: none"> <li>● Know the vocabulary from KS1 and KS2 plus: <ul style="list-style-type: none"> <li>○ Acceptable Usage Policy</li> <li>○ Moderator</li> <li>○ GDPR</li> <li>○ Cybercrime/Cybercriminal</li> <li>○ Encryption</li> <li>○ Password Vault</li> <li>○ Biometric(s)</li> <li>○ Pharming</li> <li>○ Phishing</li> <li>○ Spear Phishing</li> <li>○ Smishing</li> <li>○ Filter</li> <li>○ (Anti-)Virus</li> <li>○ (Anti-)Adware</li> <li>○ (Anti-)Malware</li> <li>○ (Anti-)Spyware</li> </ul> </li> </ul>
<p><b>Impacts on Society: (IS)</b></p> <ul style="list-style-type: none"> <li>a. Know that computer technology is used in many devices. (TU,</li> </ul>	<p><b>Impacts on Society: (IS)</b></p> <ul style="list-style-type: none"> <li>a. Know that computer technology has changed many aspects of everyday</li> </ul>	<p><b>Impacts on Society: (IS)</b></p> <ul style="list-style-type: none"> <li>a. Know how digital devices can be used in everyday life</li> </ul>

<p>b. Be able to talk about everyday devices used, ones that are digital and ones that aren't. (TU,</p>	<p>life, positively and negatively, and give examples.</p> <p>b. Know some of the benefits and costs of computer technology in everyday life and give examples.</p> <p>c. Know some strategies to limit the impact of digital technology on health and act accordingly.</p> <p>d. Know the difference between misinformation and disinformation and give examples.</p>	<p>b. Know that different devices are needed for different purposes and make appropriate choices when needed.</p> <p>c. Know of the various legislations that protect the public using digital devices. e.g Data Protection Act, Health and Safety Act, Copyright, Design and Patent Act.</p> <p>d. Know how to identify and explain how the use of technology can have an impact on society.</p> <p>e. Know how technology is utilised in the wider world and how it has impacted society historically.</p> <p>f. Know that there may be solutions outside of the digital world and be able to identify when these methods are more efficient.</p> <p>g. Know how to identify mental and physical health and safety issues involved around digital technology and how to mitigate risk throughout.</p> <p>h. Know about the concept of digital addiction and how it can show itself.</p>
---	--	---

**Common Computing Misconceptions:**

Not true	True
Information only refers to text.	Information refers to many forms of data like images and sound, as well as text.
Confidence in using digital equipment means that you are “good” at IT.	Competent use of digital equipment means that you are good at IT.
Typeface and font are synonymous.	Typeface (e.g. Arial, Helvetica) A font (e.g. Arial bold, Helvetica light italic)
Google is the <b>best</b> search engine.	Google is the <b>best known</b> search engine.
When information is stored ‘in the cloud’, it is floating around somewhere in the sky	Information ‘in the cloud’ is stored on a physical network device somewhere. This can be accessed anytime from any location (given connectivity).

Data and information are the same

Information is data that has been processed for a purpose or audience.

**Resources:**

I can statements - [By theme](#) [By phase](#)  
[Project Evolve](#)

**Finding out who has provided the information:**

<https://who.is/>

**Hive Hackers**

**Level 1**

**Level 2**

**Level 3**

**Media Literacy/Film:**

<https://www.intofilm.org/>

<https://www.literacyshed.com/>

<https://www.bfi.org.uk/> The British Film institute

**Teaching block reference codes**

PP - [Picture perfect](#) SG - [Sounds good](#) TU - [Tuning up](#) KYW - [Know your writes](#) DWD - [Dealing with data](#)  
FI - [Finding information](#) MP - Moving pictures MU - Measuring up CN - Crunching numbers  
CT - Changing times AAI - All about image MM - Mopping up mapping

Yet to be added:

Hive Hackers

Victor's - links to units (as well as links to all the above in relevant box)