Computing - Progression of Knowledge and Skills



Early Years Foundation Stage) Early Learning Goals

Early Learning Goals for Computing have been removed from the 2021 Framework for EYFS. Regardless, there is a progression document which requires children in EYFS to learn key basic skills in preparation for Year 1.

Key Stage 1

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 2

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.

Key: Concepts/Knowledge Skills Taken from NCCE Learning Graphs

| Themes | EYFS | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|--|------|---|--|---|---|--|--|
| Computing Systems and Networks (IT) | | To explain that technology is something that can help us To identify examples of technology To explain how examples of technology help us To recognise that a computer is an example of technology To recognise that choices are made when using technology To explain why rules are needed when using technology To choose a piece of technology to do a job To recognise that some technology can be used in different ways To identify the main parts of a computer To use a mouse in different ways To use a keyboard to type To use the keyboard to edit text To show how to use technology safely | To recognise different types of computers used in school To identify that a computer is a part of information technology To recognise the features of information technology To talk about uses of information technology To explain how information technology benefits us To say how rules for using information technology can help us To recognise that choices are made when using information technology To describe some uses of Computers To identify information technology in school To identify information technology beyond school To show how to use information technology safely | To describe what an input is To explain that a process acts on the inputs To explain that an output is produced by the process To identify how changing the process can affect the output To recognise that a digital device is made up of several parts To recognise that computers can be connected to each other To explain how computer systems can change the way we work To identify how devices in a network are connected with one another To recognise that a network is made up of a number of components To explain how information is passthrough multiple connections To identify the benefits of computer networks To identify input and output devices To explain how a computer network can be used to share information To explain the role of a switch server and wireless access point in a network | To describe how networks connect to other networks To outline how information can be shared via the World Wide Web To recognise that the World Wide Web is part of the Internet To explain that the global interconnection of networks is the internet To recognise the need for security on the internet To describe how to access the World Wide Web To describe the types of content/media that can be added, created, and shared on the World Wide Web To explain how the content of the World Wide Web To explain that the internet enables us to view the World Wide Web To explain that the internet enables us to view the World Wide Web To explain that the internet enables us to view the World Wide Web To explain that the world Wide Web To explain that the internet enables us to view the World Wide Web To explain that the internet enables us to view the World Wide Web To explain that the internet enables us to view the World Wide Web To explain that the world Wide Web To explain that the internet enables us to view the World Wide Web To explain that the world Wide Web To explain that the world Wide Web To explain that the internet enables us to view the World Wide Web To explain that the world Wide Web | To recognise that a system is a set of interconnected parts which work together To explain that computers can be connected together to form IT systems To identify that data can be transferred between IT systems To recognise inputs, processes, and outputs in large IT systems To describe the role of a particular IT system in their lives To relate that search engines are examples of large IT systems To explain why search engines create indices, and that they are different for each search engine To explain the role of web crawlers in creating an index To explain how search results are selected To explain that ranking orders search results to make them more useful To explain how ranking is determined by rules, and that different search engines use different rules To explain why the order of results is important and to whom | To recognise that data is transferred across networks using agreed protocols (methods) To recognise that connections between computers allow access to shared stored files To explain that data is transferred in packets To recognise computers connected to the internet allow people in different places to work together To discuss the opportunities that technology offers for communication and collaboration To explain which types of media can be shared through the internet To explain that communicating and collaboration using the internet can be public or private To outline methods of communicating and collaborating using the internet To choose methods of internet To choose methods of internet communication and collaboration for given purposes To evaluate different methods of online communication and collaboration |

| | | | To identify network devices around me To explain how networks can be connected to other networks. | To evaluate the reliability of content and the consequences of unreliable content To explain the benefits of the World Wide Web | To explain how search engines make money by selling targeted advertising space To identify some of the limitations of search engines To describe the input and output of a search engine To demonstrate that different search terms produce different results To evaluate the results of search terms | To decide what you should and should not share online |
|---|--|--|---|---|--|--|
| Computing Systems and Networks - Vocabulary Progression | computer double-click keyboard mouse screen technology trackpad typing | barcode computer information technology scan scanner | device digital input network network cables network switch network sockets non-digital output process program connection server wireless access point | accurate adverts content download files honest information internet links network security ownership permission router routing sharing web address web browser webpage website world-wide-web | algorithm content creator crawler index ordering ranking refine search search engine optimisation selection system web crawler bot | address collaboration communication data data payload explore domain name server header internet protocol address one-to-many chat one-way packet private protocol public remix reuse slide deck two-way |

Programming (CS)

- To enact a given word
- To recall words that can be enacted
- To predict the outcome of a command on a device
- To list that commands can be used on a given device
- To explain what a given command does
- To match a command to an outcome
- To recognise how to run a command (press a button)
- To choose a command for a given purpose
- To understand that a program is a set of commands a computer can run
- To recall that a series of instructions can be issued before they are enacted
- To build a sequence of commands in steps
- To combine commands in a program
- To choose a series of words that can be enacted as a program
- To choose a series of commands that can be run as a program
- To run a program on a device

- To describe a series of instructions as a 'sequence'
- To recall that a series of instructions can be issued before they are enacted
- To use logical reasoning to predict the outcome of a program
- To choose a series of words that can be enacted as a sequence
- To explain what happens when we change the order of instructions
- To choose a series of commands that can be run as a program
- To trace a sequence to make a prediction
- To test a prediction by running the sequence
- To create and debug a program that I have written
- To run a program on a device

- To explain that programs start because of an input
- To explain what a sequence is
- To identify that a program includes sequences of commands
- To identify that the sequence of a program is a process
- To explain that the order of commands can affect a program's output
- To identify that different sequences can achieve the same output
- To identify that different sequences can achieve different outputs
- To build a sequence of commands
- To combine commands in a program
- To order commands in a program
- To create a sequence of commands to produce a given outcome

- To relate what 'repeat' means
- To identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves
- To explain that we can use a loop command in a program to repeat instructions
- To identify patterns in a Sequence
- To identify a loop within a Program
- To explain that in programming there are indefinite loops and countcontrolled loops
- To explain that an indefinite loop will run until the program is stopped
- To explain that you can program a loop to stop after a specific number of times
- To identify patterns in a sequence, eg 'step 3 times' means the same as 'step, step, step'
- To justify when to use a loop and when not to
- To explain the importance of instruction order in a loop
- To recognise that not all tools enable more than one process to be run at once
 - To list an everyday task as a set of

- To explain that a condition can only be true or false
- To relate that a count-controlled loop contains a condition
- To compare a count controlled loop with a condition-controlled loop
- To explain that a condition-controlled loop will stop when a condition is met
- To explain that when a condition is met a loop will complete a cycle before it stops
- To explain that selection can be used to branch the flow of a program
- To explain that a loop can be used to repeatedly check whether a condition has been met
- To explain the importance of instruction order in 'if.. then... else... statements
- To choose a condition to use in a program
- To create a condition-controlled loop
- To use a condition in an 'if... then...' statement to start an action
- To use selection to switch program flow
- To use 'if... then... else...' to switch program flow in one of two ways

- To define a existing variable 'variable' as something that is changeable
- To identify examples of information that is variable, for example, a football score during a match
- To explain that a variable can be used in a program, eg 'score
- To define a program variable as a placeholder in memory for a single value
- To explain that a variable has a name and a value
- To recognise that the value of a variable can be used by a program
- To recognise that the value of a variable can be updated
- To identify that variables can hold numbers (integers) or letters (strings)
- To define the way that a variable is changed
- To recognise that a variable can be set as a constant (fixed value)
- To explain the importance of setting up a variable at the start of a program (initialisation)
- To explain that there is only one value for a variable at any one time
- To explain that if you change the value of a variable, you cannot access the

| | | instructions including repetition To use an indefinite loop to produce a given outcome To use a count- controlled loop to produce a given outcome To plan a program that includes appropriate loops to produce a given outcome To recognise tools that enable more than one process to be run at the same time (concurrency) To create two or more sequences that run at the same time | previous value (cannot undo) To explain that if you read a variable, the value remains To explain that the name of a variable is meaningless to the computer To explain that the name of a variable is meaningless to the computer To explain that the name of a variable is meaningless to the computer To explain that the name of a variable needs to be unique To identify a variable in an existing program To experiment with the value of an existing variable To define a existing variable To choose a name that identifies the role of a variable to make it easier for humans to understand it To decide where in a program to set a variable To update a variable with a user input To use an event in a program to update a variable To use a variable in a conditional statement to control the flow of a program To use the same variable in more than one location in a program |
|--|--|---|--|
|--|--|---|--|

| | algorithm | algorithm | algorithm | algorithm | algorithm | algorithm |
|-------------|-------------------------|---------------|--------------------|-----------------------|-----------------------|---------------|
| | algorium | algorium | algonum | algorium | algoritiiii | algoritim |
| | appropriate | actions | actions | animate | answer | artwork |
| | background | artwork | backdrop | block(s) | condition | change |
| | backwards, | blocks | blocks | code | conditional-statement | code |
| | beebot | build | bug | code-snippet | count-controlled-loop | debug |
| | block | change | chord | command | debug | design |
| | change | clear | code | costume | false | evaluate |
| | clear | command | commands | count-controlled-loop | implement | event |
| | commands | debug | costume | debug | input | improve |
| | compare | debugging | debug | decompose | outcomes | name |
| | delete | decomposition | design | design | program | program |
| | design | design | errors | duplicate | question | project |
| | effect | evaluate | event | evaluate | run | set |
| | forwards | features | extension-block | event-block | selection | share |
| Programming | go | instruction | glide | forever | setup | task |
| - | instructions directions | mat match | go-to | infinite-loop | task test | test value |
| Vocabulary | joining left | modify | logic motion | logo loop | true | variable |
| Progression | plan | order | move | modify | liue | variable |
| | predict | outcome | note | pattern | | |
| | program | predict | pen | procedure | | |
| | programming | prediction | pen-up | program | | |
| | programming-area | program | point-in-direction | programming | | |
| | reset | route | programming | refine | | |
| | right | run | resize | repeat | | |
| | route | sequence | run-the-code | repetition | | |
| | run | sprite | scratch | scratch | | |
| | scratch jr | start | sequence | sprite | | |
| | sprite | unambiguous | set-up | trace | | |
| | start block | | sprite | turtle | | |
| | turn | | stage | value | | |
| | value | | task | | | |
| | | | test | | | |
| | | | turn | | | |

| Data and Information (IT) | |
|---------------------------|--|
|---------------------------|--|

- To identify that objects can be Counted
- To recognise that information can be presented
- To recognise that information can be presented in different ways
- To identify some attributes of an object
- To collect simple data
- To show that collected data can be counted To describe the properties of an Object
- To choose an attribute to group objects by
- To group objects to answer questions
- To explain that objects can be grouped by similarities (attribute)
- To describe a group of objects (based on commonality

- To use a tally chart to collect Data
- To compare objects that have been grouped by attribute
- To suggest appropriate headings for tally charts and pictograms
- To construct (complete) a given comparison question,
- To use a computer program to present information in different ways
- To explain that we can present information using a computer
- To give simple examples of why some information should not be shared
- To show I can enter data onto a computer
- To recognise that people, animals and objects can be described by attributes
- To use a computer to view data in different formats
- To use pictograms to answer singleattribute questions
- To use a computer to answer comparison questions (graphs, tables)

- To investigate questions with yes/no answers
- To identify attributes that you can ask yes/no questions about
- To select an attribute to separate objects into two similarly sized groups
- To explain that a branching database is an identification tool
- To recognise that a data set can be structured using yes/no questions
- To explain that a wellstructured branching database will enable you to identify objects using fewer questions
- To relate two levels of a branching database using AND
- To suggest real-world applications for branching databases
- To create questions with yes/no answers
- To choose questions that will divide objects into evenly sized subgroups
- To repeatedly create subgroups of objects
- To identify an object using a branching database
- To retrieve information from different levels of the branching database

- To suggest questions that can be answered using a table of data
- To identify data that can be logged over time
- To identify that sensors are input devices
- To recognise that a sensor can be used as an input device for data collection
- To explain that a data logger captures 'data points' from sensors over time
- To use a digital device to collect data automatically
- To choose how often to automatically collect data samples
- To use a set of logged data to find information
- To use a computer program to sort data by one attribute
- To export information in different formats

- To explain that a computer program can be used to organise data
- To explain that tools can be used to select data to answer questions
- To outline how ordering data allows us to answer some questions
- To outline how operands can be used to filter data
- To outline how 'AND' and 'OR' can be used to refine data selection
- To explain that computer programs can be used to compare data visually
- To explain that we present information to communicate a message
- To choose different ways to view data
- To choose which attribute and value to search by to answer a given question (operands)
- To ask questions that need more than one attribute to answer
- To choose which attribute to sort data by to answer a given question
- To choose multiple criteria to search data to answer a given question (AND and OR)
- To select an appropriate graph to

- To identify questions that can be answered using spreadsheet data
- To explain what an item of data is in a spreadsheet
- To outline that there are different software tools to work with data
- To explain how the data type determines how a spreadsheet can process the data
- To explain that formulas can be used to produce calculated data
- To recognise cells can be linked
- To explain why data should be organised in a spreadsheet
- To recognise that a cell's value automatically updates when the value in a linked cell is changed
- To evaluate results in comparison to the question asked
- To calculate data using a formula for each operation
- To use functions to create new data
- To use existing cells within a formula
- To choose suitable ways to present spreadsheet data

| | colour data set | attribute | attribute | analyse collection | visually compare data To choose suitable ways to present information to other people axis chart | calculation |
|--|--|--|--|---|---|---|
| Data and Information - Vocabulary Progression | fewest group image label less more most object property search shape size the same value | compare block- conclusion count data diagram different enter explain group least least common least popular less than more common more than most most popular object organise pictogram same sharing tally chart total votes | branching-database compare database decision-tree equal even information objects order organise questions selecting separate structure table value | conclusion data data-logger data-point data-set export import input-device interval layout logged logging review sensor table | compare criteria data database field filter graph group information order presentation record search sort | cell(s) cell-reference chart collecting data data-item duplicate evaluate format formula input operation organised output propose question range results sigma software spreadsheet structure table tools |

- To explain what different freehand tools do
- To recognise computers can be used to create art
- To recognise a tool can be adjusted to suit my need
- To decide when it's appropriate to use each tool
- To consider impact of choices made
- To compare painting using a computer with painting using brushes
- To create a picture using freehand tools
- To use shape and line tools when precision is needed
- To use a range of paint colours
- To use the fill tool to colour an enclosed area
- To use the undo button to correct a mistake
- To combine a range of tools to create a piece of artwork

- To recognise that some digital devices can capture images using a camera
- To talk about how to take a photograph
- To recognise that photographs can be saved and viewed later
- To make choices when composing my photograph
- To recognise features of 'good' photographs
- To identify how a photograph could be improved
- To explain the effect of light on a photograph
- To recognise that photographs can be change after they have been taken
- To recognise that some images are not accurate
- To capture a digital image
- To take photographs in both landscape and portrait format
- To view photographs on a digital device
- To decide which photographs to keep
- To hold the camera still to take a clear photograph
- To use zoom to change the composition of a photograph

- To recognise how text and images can be used together to convey information
- To define landscape and portrait as two different page orientations
- To consider how different layouts can suit different purposes
- To recognise that DTP pages can be structured with placeholders
- To recognise how different font styles and effects are used for particular purposes
- To consider the benefits of using a DTP application
- To show that page orientation can be changed
- To add text to a
 Placeholder
- To organise text and image placeholders in a page layout
- To add and remove images to and from placeholders
- To edit text in a Placeholder
- To move resize and rotate images
- To choose fonts and apply effects to text
- To review a document

- To use an application to change the whole of a digital image
- To use an application to change part of a digital image
- To use an application to add to the composition of a digital image
- To change the composition of a digital image by rotating and flipping
- To change the composition of a digital image by cropping
- To adjust colours of a digital image
- To apply filters to a digital Image
- To apply effects to a digital image
- To select part of a digital Image
- To use clone, copy, and paste to change the composition of a digital image
- To use cloning to retouch a digital image
- To add text to a digital Image
- To recognise that digital images can be Manipulated
- To recognise that digital images can be changed for different purposes
- To choose the most appropriate tool for a particular purpose

- To identify that a vector drawing comprises separate objects
- To recognise that each
- object in a drawing is in its own layer
- To recognise that vector images can be scaled without impact on quality
- To recognise that objects can be modified in groups
- To explain how alignment and size guides can help create a more consistent drawing
- To consider the impact of choices made
- To add an object to a vector drawing
- To select one object or multiple objects
- To select one object or choices made multiple objects
- To move objects between the layers of a drawing
- To duplicate objects using copy and paste
- To modify objects
- To reposition objects
- To group and ungroup selected objects
- To combine options to achieve a desired effect
- To create a vector drawing for a given purpose

- To explain that 3D models can be created on a computer
- To recognise that a 3D environment can be viewed from different perspectives
- To recognise that digital tools can be used to manipulate 3D objects
- To show how placeholders can create holes in 3D objects
- To recognise that artefacts can be broken down into a collection of 3D objects
- To position 3D shapes
- relative to one another
- To use digital tools
 to
- modify 3D objects
- To combine objects
 to
- create a 3D digital artefact
- To use digital tools to
- accurately size 3D objects
- To construct a 3D model which reflects a real world object

| | | To consider lighting before taking a photograph To improve a photograph by retaking it To use filters to edit the appearance of a photograph | | To consider the impact of changes made on the quality of the image | | |
|--|--|--|--|---|--|--|
| Creating Media A - Vocabulary Progression | brush size brush style computers erase feelings fill / undo fill tool Georges Seurat Henri Matisse like / dislike line tool paint paintbrush painting pictures Piet Mondrian pointillism primary colours program shape tools tool / prefer undo tool Wassily Kandinsky | background camera capture compose device digital editing filter flash focus format framing image landscape light source lighting photograph portrait subject | advantages benefits communicate content copy desktop-publishing disadvantages font font-style images landscape layout orientation paste placeholder portrait purpose template text | adjustments alter background colours combine composite copy/paste crop cut digital edit effects font foreground hue image made-up real retouch clone rotate saturation save select sepia undo vignette zoom | align colour drawing-tools duplicate group layers modify move object order paste reflection resize reuse rotate select toolbar ungroup vector zoom | 2D 3D choose combine construct cylinder duplicate evaluate group handles hollow lift lower modify move perspective placeholder recolour resize rotate select shapes view |

| | • | To recognise that a keyboard is used to |
|--|---|---|
| | | enter text into a computer |
| | • | To recognise that |
| | | the Shift key changes the output |
| | | of a key |
| | • | To recognise that |
| | | text can be edited |
| | • | To recognise that |
| | | |

Creating

Media B

- b
- text can be changed
- To recognise that the appearance of text can be changed
- To consider the impact of choices made
- To use letter. number, and Space keys to enter text into a computer
- To use punctuation and special characters
- To select text
- To use the Backspace key to remove text
- To position the text cursor in a chosen Location
- To choose options to achieve a desired effect
- To change the appearance of text on a computer
- To use Undo

- To identify that computers can be used to play sounds of different instruments
- To identify that the same pattern can be represented in different ways
- To compare playing music on instruments with making music on a computer
- To experiment with musical patterns on a computer
- To experiment with different sounds on a computer
- To use a computer to create a musical pattern
- To use a computer to compose a rhythm and a melody on a given theme
- To use a computer to play the same music in different ways (e.g. tempo)
- To evaluate a musical composition created on a computer
- To improve a musical composition created on a computer

- To explain that an animation is made up of a sequence of images
- To identify that a capturing device needs to be in a fixed position.
- To recognise that smaller movements create smoother animation
- To explain the need for consistency in working
- To explain the impact of adding other media to an animation
- To explain that a project must be exported so it can be shared
- To set up the work area with an awareness of what will be captured
- To plan an animation using a storyboard
- To capture an image
- To use the onion skinning tool to review subject position
- To move a subject between captures
- To review a captured sequence of frames as an animation
- To remove frames to improve an animation
- To add media to enhance an animation
- To review a completed project

- To identify that sound can be recorded
- To identify that an input device is needed to record sound
- To identify that output devices are needed to play audio
- To recognise that recorded audio can be stored on a computer
- To recognise that audio can be edited
- To recognise that sound can be represented visually as a waveform
- To recognise that audio can be lavered so that multiple sounds can be played at the same time
- To consider the results of editing choices made
- To record sound using a computer
- To play recorded audio
- To import audio into a Project
- To delete a section of Audio
- To change the volume of tracks in a project

- To explain the features of video as a visual media format
- To recognise which devices can and can't record video
- To recognise which devices can and can't record video
- To recognise that filmina techniques can be used to create different effects
- To explain the limitations of editing video on a recording device
- To identify that videos can be edited on a recording device or on a computer
- To identify videos can be improved through and reshooting or editing
- To recognise the need to regularly review and reflect on a video project
- To recognise projects need to be exported to be shared
- To use different camera Angles
- To use pan, tilt and zoom
- To identify features of a video recording device or Application
- To combine filming techniques for a given Purpose
- To determine what scenes will convey your Idea
- To choose to reshoot a scene or

- To recognise the relationship between
 - HTML and visual
- display To recognise that web
- pages can contain
- different media types
- To recognise that web
- pages are written by
- people
- To recognise that a
- website is a set of
- hyperlinked web pages
- To recognise components of a web page layout
- To consider the ownership and use of images
- (copyright)
- To recognise the need to
- preview pages (different
- screens / devices)
- To recognise the need for a navigation path
- To recognise the
- implications of linking to
- content owned by others
- To review an existing
- website (navigation bars.
- header)
- To create a new blank
- web page
- To add text to a web
- page
- To set the style of text on
- a web page
- To change the
- appearance of text

| | | | | | improve later through editing To decide what changes I will make when editing To use split, trim and crop to edit a video | To embed media in a web page To add web pages to a website To preview a web page (different screen sizes) To insert hyperlinks between pages To insert hyperlinks |
|--|--|--|--|--|---|---|
| Creating Media B - Vocabulary Progression | backspace bold capital letters compare font format italic keyboard keys letter mouse numbers redo select space text cursor toolbar type typing underline undo word processor writing | beat create edit emotions feelings instruments loud Mars music Neptune notes open pattern peace pitch planets pulse quiet rhythm tempo Venus war | animation character consistency delete evaluation events flip-book frame image import media onion-skinning photograph sequence setting stop-frame-animation transition | align audio edit evaluate export feedback headphones import input-device layer load microphone MP3 output-device playback podcast record save selection sound speaker trim | audio camera clip close-up delete edit evaluate export filming high-angle import lens long-shot low-angle microphone mid-range moving-subject normal-angle pan panning reorder reshoot review share side-by-side split static-camera storyboard talking-head tilt trim video zoom | breadcrumb-trail browser copyright device embed evaluate external-link fair-use google-sites header home-page hyperlink hypertext-markup- language implication layout logo media navigation preview purpose subpage web-page website |

Our Computing Curriculum within the Three Strands of Computing

Computer Science (CS)

Key Stage 1

- 1. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- 2. Create and debug simple programs
- 3. Use logical reasoning to predict the behaviour of simple programs
- 4. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts *Key Stage 2*
- 5. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- 6. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- 7. Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web
- 8. Appreciate how [search] results are selected and ranked

Information Technology (IT)

Key Stage 1

- 1. Use technology purposefully to create, organise, store, manipulate and retrieve digital content *Kev Stage 2*
- 2. Use search technologies effectively
- 3. 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

Digital Literacy (DL)

Key Stage 1

- 1. Recognise common uses of information technology beyond school
- 2. 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
- 3. Understand the opportunities [networks] offer for communication and collaboration

Key Stage 2

- 4. Be discerning in evaluating digital content
- 5. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

The Teach Computing Curriculum uses the National Centre for Computing Education's computing taxonomy to ensure comprehensive coverage of the subject. This has been developed through a thorough review of the KS1–2 Computing Programme of Study. All learning outcomes can be described through a high-level taxonomy of ten strands, ordered alphabetically as follows:

- Algorithms Be able to comprehend, design, create, and evaluate algorithms
- Computer networks Understand how networks can be used to retrieve and share information, and how they come with associated risks
- Computer systems Understand what a computer is, and how its constituent parts function together as a whole
- Creating media Select and create a range of media including text, images, sounds, and video
- Data and information Understand how data is stored, organised, and used to represent real-world artefacts and scenarios
- **Design and development** Understand the activities involved in planning, creating, and evaluating computing artefacts
- Effective use of tools Use software tools to support computing work
- Impact of technology Understand how individuals, systems, and society as a whole interact with computer systems
- Programming Create software to allow computers to solve problems
- Safety and security Understand risks when using technology, and how to protect individuals and systems

The taxonomy provides categories and an organised view of content to encapsulate the discipline of Computing. Whilst all strands are present at all phases, they are not always taught explicitly.