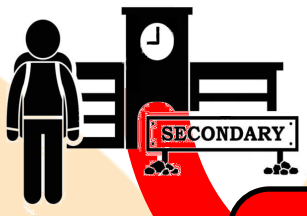
Computing



Y6

- Sensing
- Variables in games
- Spreadsheets
- Web page creation
- 3D Modelling
- Communication

Y5

- Sharing information
- Vector drawing
- Video editing
- Flat-file databases
- Selection in physical computing
- Selection in quizzes

Y4

- Repetition in games
- Repetition in shapes
- Data logging
- Photo editing
- Audio editing
- The Internet

Y3

- Connecting computers
- Animation
- Desktop publishing
- Branching databases
- Sequence in music
- Events and actions

Y2

- An introduction to quizzes
- Robot algorithms
- Pictograms
- Making music
- Digital photography
- IT around us

Y1

- Technology Around Us
- Digital painting
- Digital writing
- Grouping data
- Moving a robot
- Introduction to animation

R

- Expressive Arts and Design
- Mathematics

N

- Mathematics

Discreet E-safety should be taught at least once every term. All children should be aware of online dangers and how to deal with any issues that arise either with inappropriate contact or cyberbullying.

Rationale

Technology is changing the lives of everyone. Through teaching computing we provide our children with the skills and knowledge to participate in a rapidly changing world where work and leisure activities are increasingly transformed by technology.

It is our intention to enable children to find, explore, analyse, exchange and present information. We also focus on developing the skills necessary for children to be able to use information in an effective way.

Computing skills are a major factor in enabling children to be confident, creative and independent learners and it is our intention that children have every opportunity available to allow them to achieve this.

E-safety forms an important part of our computing curriculum and is present in every term's teaching and learning. It uses the resources from ProjectEVOLVE which meets each of the 330 statements from UK Council for Internet Safety's (UKCIS) framework "Education for a Connected World".

By the time they leave Harpfield, children will have gained key knowledge and skills in the three main areas of the computing curriculum: computer science (programming and understanding how digital systems work), information technology (using computer systems to store, retrieve and send information) and digital literacy (evaluating digital content and using technology safely and respectfully). They will gain these skills through 6 carefully designed units present in every year group. They are: Computing systems and networks, Creating media 1, Creating media 2, Data and information, Programming A, Programming B.

The objectives within each strand support the development of learning across the key stages, ensuring a solid grounding for future learning and beyond.

Many of these important areas of the computing curriculum are supported by the school's blended learning approach which is embedded into the teaching and learning within the school. The essential skills builder framework is also woven into the existing Computing curriculum.

Year 6	Computing systems and networks - Communication	⇒ Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ⇒ 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 ⇒ Links to Online reputation and Managing online information from **Project Evolve.**
	Creating media - 3D Modelling	⇒ 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 ⇒ Links to Privacy and Security from **Project Evolve.**
	Creating media - Web page creation	⇒ 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. ⇒ Links to Online Relationships, Managing information online and Copyright and Ownership from **Project Evolve.**
	Data and information - Spreadsheets	⇒ 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 ⇒ Links to Managing information online from **Project Evolve.**
	Programming A - Variables in games	⇒ 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 ⇒ 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
	Programming B - Sensing	⇒ 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 ⇒ 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
Year 5	Computing systems and networks - Sharing information	⇒ 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 ⇒ 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 ⇒ 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 ⇒ Links to Copyright and ownership from **Project Evolve**
	Creating media - Vector drawing	⇒ 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.
	Creating media - Video editing	⇒ 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 ⇒ Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour
	Data and information - Flat-file databases	⇒ 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
	Programming A - Selection in physical computing	⇒ 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 ⇒ 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
	Programming B - Selection in quizzes	⇒ 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 ⇒ 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

Year 4	Computing systems and networks - The Internet	⇒ 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. ⇒ Links to Managing online information from **Project Evolve**
	Creating media - Audio editing	⇒ 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 ⇒ Links to Copyright and ownership from **Project Evolve**
	Creating media - Photo editing	⇒ Use search technologies effectively ⇒ 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. ⇒ Links to Copyright and Ownership x Self-image and Identity from **Project Evolve**
	Data and information - Data logging	⇒ Use sequence, selection, and repetition in programs; work with variables and various forms of input and output ⇒ 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
	Programming A - Repetition in shapes	⇒ 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 ⇒ 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
	Programming B - Repetition in games	⇒ 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 ⇒ 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
Year 3	Computing systems and networks - Connecting computers	⇒ use sequence, selection, and repetition in programs; work with variables and various forms of input and output ⇒ 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 ⇒ 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
	Creating media - Animation	⇒ 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. ⇒ Links to Copyright and Ownership and Managing Online Information from **Project Evolve**
	Creating media - Desktop publishing	⇒ 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 ⇒ Links to Managing online information and Copyright and ownership from **Project Evolve**
	Data and information - Branching databases	⇒ 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
	Programming A - Sequence in Music	⇒ 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 ⇒ 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
	Programming B - Events and Actions	⇒ 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 ⇒ 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

Year 2	Computing systems and networks - IT around us	⇒ 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 ⇒ Link to Health, Wellbeing and Lifestyle from **Project Evolve**
	Creating media - Digital photography	⇒ Use technology purposefully to create, organise, store, manipulate, and retrieve digital content ⇒ Link to Self-Image and Identity from **Project Evolve**
	Creating media - Digital writing	⇒ Use technology purposefully to create, organise, store, manipulate, and retrieve digital content ⇒ Use technology safely and respectfully, keeping personal information private
	Creating media - Making music	⇒ Use technology purposefully to create, organise, store, manipulate and retrieve digital content ⇒ Links to Copyright and ownership from **Project Evolve**
	Data and information - Pictograms	⇒ use technology purposefully to create, organise, store, manipulate and retrieve digital content ⇒ 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 ⇒ Links to Self image and identity, Health, wellbeing and lifestyle x Privacy and security from **Project Evolve**
	Programming B - An introduction to quizzes	⇒ 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
Year 1	Computing systems and networks – Technology Around Us	⇒ Recognise common uses of information technology beyond school ⇒ Use technology purposefully to create, organise, store, manipulate, and retrieve digital content ⇒ 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. ⇒ Links to Health, well-bring and lifestyle and copyright and ownership from **Project Evolve**
	Creating media – Digital painting	⇒ Use technology purposefully to create, organise, store, manipulate, and retrieve digital content
	Creating writing - Seesaw	⇒ Use technology purposefully to create, organise, store, manipulate, and retrieve digital content ⇒ Use technology safely and respectfully, keeping personal information private ⇒ Links to Privacy and Security from **Project Evolve**
	Data and information - Grouping data	⇒ Use technology purposefully to create, organise, store, manipulate, and retrieve digital content ⇒ Use technology safely and respectfully ⇒ Links to Copyright and ownership from **Project Evolve**
	Programming A - Moving a robot	⇒ 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 ⇒ Recognise common uses of information technology beyond school
	Programming B - Introduction to animation	⇒ 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
Reception	Mathematics	⇒ Continue, copy and create repeating patterns. **(Built into Maths curriculum. AABB ABC patterns)**
	Expressive Arts and Design	⇒ Explore, use and refine a variety of artistic effects to express their ideas and feelings. **(Paint/ ipad drawing apps)** ⇒ Return to and build on their previous learning, refining ideas and developing their ability to represent them. **(BeeBots)** ⇒ Create collaboratively sharing ideas, resources and skills. **(Letterjoin)**
Nursery	Mathematics	⇒ Notice patterns and arrange things in patterns. **(ipad games)** ⇒ Talk about and identifies the patterns around them. **(ipads to take photographs)** ⇒ Extend and create ABAB patterns **(Built into Maths curriculum.)** ⇒ Notice and correct a repeating pattern **(Built into Maths curriculum.)** ⇒ Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' **(Built into storytelling.)**

		Substantive Knowledge	Disciplinary knowledge	Vocabulary
Year 6	Computing systems and networks – Communication – chromebooks	To recognise that there are a number of search engines To explain why search engines exist To define the purpose of an index To explain why search engines create indexes, and that they are different for each search engine To explain how search results are selected To explain the role of web crawlers To explain that ranking narrows down the search results returned from the index, which makes it more useful To explain that search results are ordered, and this is known as ranking To explain how ranking is determined by rules, and that different search engines use different rules To examine the role of the searcher, search engine, and content creator in the searching process To explain why the order of results is important, and to whom To identify some of the limitations of search engines To explain how search engines make money by selling advertising space To recognise that some information is not searchable To define 'communication' To discuss the opportunities that technology offers for communication	To recall how to use a search engine To compare the results from different search engines To demonstrate that different search terms produce different results To explain that search terms need to be chosen carefully To evaluate the results of search terms To identify that results from search engines can include adverts, and that the adverts can be targeted To identify different ways to communicate without technology To list methods of communicating using the internet To choose an appropriate method of internet communication for a given purpose To evaluate different methods of online communication To explain which types of media can be shared through the internet To explain that communicating through the internet can be public or private To decide what I should/should not share To classify internet communication by messenger and recipient or audience	Search, search engine, Google, Bing, Yahoo!, Swisscows, DuckDuckGo, refine, Index, crawler, bot, search engine optimisation, links, web crawlers, ranking, content creator, selection, Communication, internet, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround
	Creating media – 3D Modelling – Tinkercad (chromebooks)	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	2D, 3D, shapes, select, move, perspective, view, Handles, resize, lift, lower, recolour, Rotate, duplicate, group, Cylinder, placeholder, hollow, ungroup, design, Construct, evaluate, modify
	Creating media – Web page creation – Office 365 Share-Point	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 change the appearance of text To set the style of text on a web page 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 to another site	Website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, Copyright, fair use, home page, preview, evaluate, device, breadcrumb trail, navigation, hyperlink, subpage, implication, external link, embed.
	Data and information – Spreadsheets – Microsoft Excel	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	Data, collecting, table, structure, spreadsheet, Cell, cell reference, data item, format, Formula, calculation, input, output, calculate, operation, range, duplicate, sigma, Propose, question, data set, organised, Chart, evaluate, results, comparison, questions, software, tools.
	Programming A – Variables in games – Scratch	To define '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 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 needs to be unique	To identify a variable in an existing program To experiment with the value of an 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	Variable, change, name, value, set, design, event, algorithm, code, Task, artwork, program, project, test, debug, Improve, evaluate, share
	Programming B – Sensing – Lego Coding	To define 'variable' as something that is changeable To identify examples of information that is variable, e.g. a football score during a match To explain that a variable can be used in a program, e.g. '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 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 needs to be unique	To identify a variable in an existing program To experiment with the value of an existing variable To choose a name that identifies the role of a variable to make it more usable (to humans) 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	input, process, output, flashing, USB, trace, Selection, condition, if then else, variable, random, sensing, accelerometer, value, Compass, direction, navigation, design, task, algorithm, step counter, Plan, create, code, test, debug.

		Substantive Knowledge	Disciplinary knowledge	Vocabulary
Year 5	Computing systems and networks - Sharing information - Unplugged/Office 365/Scratch	To recognise that computers can be part of a system in an electronic device To recognise input, process, and output in larger computer systems To recognise how information is transferred across the internet To recognise that connections between computers allow us to work together To explain that the internet lets people in different places work together To recognise that connections between computers allow us to access shared stored files To explain that the internet allows different media to be shared To recognise that internet collaborations can be public or private To understand that computers can be connected together to form systems To see that computers communicate with other devices (including other computers) To evaluate different ways of working together To recognise the role of computer systems in our lives To explain that data is transferred in packets To recognise that data is transferred using agreed protocols (methods)		System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration
	Creating media – Vector drawing - Vectr	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 delete objects To move objects between the layers of a drawing To group and ungroup selected objects To select one object or multiple objects To duplicate objects using copy and paste To modify objects To reposition objects To combine options to achieve a desired effect To create a vector drawing for a given purpose	Vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, object, reuse, reflection
	Creating media – Video editing – iMovie (iPads)	To explain the features of video as a visual media format To recognise which devices can and can't record video To explain the purpose of a storyboard To recognise that filming 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 decide what changes I will make when editing To choose to reshoot a scene or improve later through editing To use split, trim and crop to edit a video	Video, audio, camera, talking head, panning, close up, video camera, microphone, lens, close up, mid range, long shot, moving subject, side by side, high angle, low angle, normal angle
	Data and information – Flat-file databases – chromebooks	To design an approach to answer a question using a database 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 choose which attribute to sort data by to answer a given question To ask questions that need more than one attribute to answer To choose which attribute and value to search by to answer a given question (operands) To choose multiple criteria to search data to answer a given question (AND and OR) To select an appropriate graph to visually compare data To explain that we present information to communicate a message	To navigate a flat-file database To design a structure for a flat-file database To choose different ways to view data To choose which attribute to sort data by to answer a given question To explain that computer programs can be used to compare data visually To outline how 'AND' and 'OR' can be used to refine data selection To choose suitable ways to present information to other people	Database, data, information, record, field, sort, order, group, value, search, criteria, graph, chart, axis, compare, filter, presentation
	Programming A – Selection in physical computing – Lego Coding	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 create a condition-controlled loop To use a condition in an 'if…then… statement to start an action To use selection to switch the program flow in one of two ways To use a condition in an 'if…then…else…' statement to produce given outcomes	Microcontroller, components, connection, infinite loop, motor, repetition, count-controlled loop, switch, motor, LED, connect, battery box, program, condition, Input, output, selection, condition, action, repetition, debug
	Programming B – Selection in quizzes – Scratch	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	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement (the linking together of a condition and outcomes), algorithm, program, debug, question, answer, Task, design, input, Implement, selection, condition, outcome, test, run, setup

		Substantive Knowledge	Disciplinary knowledge	Vocabulary
Year 4	Computing systems and networks – The Internet - Chromebooks	To describe how networks connect to other networks To outline how information can be shared by the worldwide 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 worldwide web To explain how the content of the World Wide Web has created, owned, and shared by people To explain that the Internet enables us to view the World Wide Web To explain that the World Wide Web comprises of websites and web pages To describe the current limitations of the World Wide Web media To evaluate the reliability of content and the consequences of unreliable content To explain the benefits of the World Wide Web		Internet, network, router, network security, network switch, server, wireless access point (WAP), router, Website, web page, web address, routing, web browser, World Wide Web, internet, content, website, links, files, website, use, content, download, sharing, ownership, permission, information, accurate, honest, content, adverts.
	Creating media – Audio editing – iPads GarageBand	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 layered 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	Audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, import, save, export, MP3, evaluate, feedback.
	Creating media – Photo editing – iPads	To recognise that digital images can be manipulated To recognise the images can be changed for different purposes To use the most appropriate tool for a particular purpose To recognise that not all images are real To consider the impact of changes made on the quality of the image.	To use a computer to (further) manipulate images To open/retrieve an image To change the composition of an image s. to arrange (rotate, flip), to crop and to cut out a part. To apply a change globally (to adjust colours, to apply filters and to add effects) To apply changes locally (to retouch and to reuse) To make additions (to draw, to add text and to add and element such as a border)	Image, edit, arrange, select, digital, crop, undo, save, search, copyright, composition, pixels, crop, rotate, flip, adjustments, effects, colours, hue/ saturation, sepia, save, version, illustrator, vignette, retouch, clone, recolour, magic wand, adjust, sharpen, brighten, fake, real, composite, cut, copy, paste, alter, background, foreground, publication, elements, original, font style, shapes, border, layer.
	Data and information – Data logging – Data loggers and iPads/ Chromebooks	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	Data, table, layout, input device, sensor, data logger, logging, data point, interval, analyse, data set, import, export, collection, review, conclusion
	Programming A – Repetition in shapes – Scratch	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 count -controlled 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 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	Program, Turtle, Commands, Code snippet, Algorithm, Design, Debug, Pattern, repeat, repetition, count-controlled loop, value, trace, Decompose, Procedure
	Programming B – Repetition in games – Scratch	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 a loop within a program To explain that in programming there are indefinite loops and count -controlled 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 justify when to use a loop and when not to To identify patterns in a sequence, eg 'step 3 times' means the same as 'step, step, step' To identify patterns in a sequence 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 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 create two or more sequences that run at the same time To recognise tools that enable more than one process to be run at the same time (concurrency)	Scratch, programming, sprite, blocks, code, loop, value, Block, repeat, forever, infinite loop, count-controlled loop, costume, repetition, animate, event block, duplicate, modify, design, algorithm, debug. Refine, evaluate.

		Substantive Knowledge	Disciplinary knowledge	Vocabulary
Year 3	Computing systems and networks – Connecting computers – (mostly) Unplugged	To describe what an input is. To explain that a process acts on the input. To explain that an output is produced by the process. To explain how computer systems can change the way that we work. 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 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 passed through multiple connections. To identify the benefits of computer networks.	To identify input and output devices. To explain that a computer system accepts an input and processes it to produce an output. 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 identify network devices around me. To explain how networks can be connected to other networks.	Digital device, input, process, output, program, digital, non-digital, connection, network, network switch, server, wireless access point, network cables, network sockets.
	Creating media – Animation – iMotion - iPads	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 explain that a project must be exported so it can be shared.	To plan an animation using a storyboard. To set up the work area with an awareness of what will be captured. 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 animation. Too add media to enhance an animation. To review a completed project.	Animation, flip book, stop-frame animation, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, animation, media, import, transition
	Creating media – Desktop publishing – Canva (Chromebook)	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 choose fonts and apply effects to text. To move and resize and rotate images. To review a document.	Text, images, advantages, disadvantages, communicate, font, font style, communicate, template, landscape, portrait, orientation, placeholder, layout, content, desktop publishing, copy, paste, purpose, benefits.
	Data and information – Branching databases - j2data Branch and Pictogram	To investigate questions with yes/no answers. To identify the object attributes needed to collect relevant data. To select an attribute to separate objects into two similarly sized groups. To explain that data can be used to answer questions. To decide what data needs to be collected to answer a specific question. To relate two levels of a branching database using AND. To compare the information shown in a pictogram with a branching database.	To retrieve information from different levels of the branching database. To create questions with yes/no answers.	Attribute, value, questions, table, objects, branching database, database, equal, even, separate, structure, compare, order, organise, j2data, selecting, pictogram, compare, information, decision tree
	Programming A – Sequence in Music – Scratch	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 identity 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 the 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.	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, programming blocks, motion, turn, point in direction, go to, glide, sequence, event, task, design, code, run the code, order, note, chord, algorithm, bug, debug.
	Programming B – Events and Actions – Scratch	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 the different sequences can achieve the same output To identify the 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	Motion, event, Sprite, algorithm, logic, Move, resize, Extension block, pen up, setup, Pen, design, action, Debugging, errors, Code, test

		Substantive Knowledge	Disciplinary knowledge	Vocabulary
Year 2	Computing systems and networks - IT around us - Unplugged	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 say how rules for using information technology can help us To explain how information technology benefits 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	Information technology (IT), computer, barcode, scanner/scan
	Creating media - Digital painting - Seesaw & iPads/ Chromebooks	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	paint program, tool, paintbrush, erase, fill, undo, primary colours, shape tools, line tool, fill tool, undo tool, feelings, colour, brush style, pictures, painting, computers, like, prefer, dislike
	Creating media - Digital writing & Microsoft Word	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 changed To recognise that text can be edited 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 use the Backspace key to remove text To position the text cursor in a chosen location To select text To choose options to achieve a desired effect To change the appearance of text on a computer To use Undo	Word processor, keyboard, keys, letters, type, Numbers, space, backspace, text cursor, Capital letters, toolbar, bold, italic, underline, Mouse, select, font, Undo, redo, format, compare, writing, typing
	Creating media - Making music - Chrome Music Lab online (Chromebooks)	To recognise that information on a computer can be stored To explain that information (work) on a computer can be saved To explain that stored information (work) can be retrieved, edited, and resaved	To listen to music To create music for a purpose To use a computer to create a piece of music To recognise that music is made by humans To consider how different musical sequences create different effects To show how music is made from a series of notes To review and refine our computer work To identify that there are patterns in music To describe how music can be used in different ways To say how music can make us think and feel	Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, notes, instrument, create, open, edit.
	Data and information - Pictograms - J2e pictograms (Chromebooks)	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 recognise that people, animals, and objects can be described by attributes To use a computer to view data in different formats To show I can enter data onto a computer To use pictograms to answer single-attribute questions To use a computer to answer comparison questions (graphs, tables)	More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, compare, count, explain, more common, least common, attribute, group, same, different, most popular, least popular, conclusion, block diagram.
	Programming B - An introduction to quizzes -ScratchJr	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 run a program on a device. To explain what happens when we change the order of instructions. 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 choose a series of commands that can be run as a program.	More than, less than, most, least, organise, data, object, tally chart, votes, total, Pictogram, enter, tally chart, compare, more than, less than, objects, count

		Substantive Knowledge	Disciplinary knowledge	Vocabulary
Year 1	Computing systems and networks – Technology Around Us - Unplugged	To explain that technology is something that can help us To explain how examples of technology help us To identify examples of technology To recognise that a computer is an example of technology To recognise that choices are text 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 show how to use technology safely To use the keyboard to edit text To use a keyboard to type To use a mouse in different ways	Technology, computer, mouse, trackpad, keyboard, screen, double -click, typing.
	Creating media – Digital painting - Seesaw iPads	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	paint program, tool, paintbrush, erase, fill, undo, primary colours, shape tools, line tool, fill tool, undo tool, feelings, colour, brush style, pointillism, brush size, pictures, painting, computers, like, prefer, dislike.
	Creating writing s Seesaw - iPads or Chromebooks	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 changed To recognise that text can be edited 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 use Undo To select text To choose options to achieve a desired effect To change the appearance of text on a computer	Word processor, keyboard, keys, letters, type, numbers, space, back-space, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, for-mat, compare, typing, writing.
	Data and information s Grouping data - Un-plugged	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 identify that objects can be counted To recognise that information can be presented To recognise that information can be presented in different ways	Object, label, group, search, image, property, colour, size, shape, value, colour, data set, more, less, most, fewest.
	Programming A - Moving a robot - Beebots	To enact a given word To predict the outcome of a command on a device To choose a command for a given purpose To match a command to an outcome To recognise how to run a command (press a button) To build a sequence of commands in steps To explain what a given command does To list which commands can be used on a given device To recall that a series of instructions can be issued before they are enacted To recall words that can be enacted To combine commands in a program To understand that a program is a set of commands a computer can run	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	Forwards, backwards, turn, clear, go, commands, instructions, direc-tions, Left, right, plan, algorithm, program, route.
	Programming B -Introduction to animation -ScratchJr.	To enact a given word To predict the outcome of a command on a device To choose a command for a given purpose To match a command to an outcome To recognise how to run a command (press a button) To build a sequence of commands in steps To explain what a given command does To list that commands can be used on a given device To recall that a series of instructions can be issued before they are enacted To recall words that can be enacted To combine commands in a program To understand that a program is a set of commands a computer can run	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	ScratchJr, Bee-Bot, command, sprite, compare, programming, program-ming area, block, joining, command, start block, run, program, back-ground, delete, reset, algorithm, pre-dict, effect, change, value, instruc-tions, appropriate, design, program-ming blocks.

		Online Safety Knowledge	Use Project Evolve materials
Y6	Self-image and identity	I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online. I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline. I can explain the importance of asking until I get the help needed.	
	Online relation-ships	I can explain how sharing something online may have an impact either positively or negatively . I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not. I can describe how things shared privately online can have unintended consequences for others. e.g. screen-grabs. I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this.	
	Online Repu-tation	I can explain the ways in which anyone can develop a positive online reputation . I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity.	
	Online Bully-ing	I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. I can explain how someone would report online bullying in different contexts.	
	Managing Online Infor-mation	I can explain how search engines work and how results are selected and ranked. I can explain how to use search technologies effectively. I can describe how some online information can be opinion and can offer examples. I can explain how and why some people may present 'opinions' as 'facts'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal.	
	Health, Well-Being and Life-style	I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose . I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this. I can recognise features of persuasive design and how they are used to keep users engaged (current and future use). I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct pos-ture, sleep, diet and exercise).	
	Privacy and Security	I can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser). I can explain what to do if a password is shared, lost or stolen. I can describe how and why people should keep their software and apps up to date, e.g. auto updates. I can describe simple ways to increase privacy on apps and services that provide privacy settings. I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing). I know that online services have terms and conditions that govern their use.	
	Copy-right and Own-ership	I can demonstrate the use of search tools to find and access online content which can be reused by others. I can demonstrate how to make references to and acknowledge sources I have used from the internet.	
Y5	Self-image and iden-tity	I can explain how identity online can be copied, modified or altered. I can demonstrate how to make responsible choices about having an online identity, depending on context.	
	Online relation-ships	I can give examples of technology-specific forms of communication (e.g. emojis, memes and GIFs). I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my / our fault. I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups). I can explain how someone can get help if they are having problems and identify when to tell a trusted adult.	
	Online Reputa-tion	I can search for information about an individual online and summarise the information found. I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect.	
	Online Bullying	I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences . I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying. I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult. I can identify a range of ways to report concerns and access support both in school and at home about online bullying. I can explain how to block abusive users. I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline or The Mix).	
	Managing Online Information	I can explain the benefits and limitations of using different types of search technologies e.g. voice-activation search engine. I can explain how some technology can limit the information I am presented with. I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical'. I can evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results. I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence.	
	Health, Well-Being and Life-style	I can describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively. I can describe some strategies, tips or advice to promote health and wellbeing with regards to technology. I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals. I can explain how and why some apps and games may request or take payment for additional content (e.g. in-app purchases, lootboxes) and explain the importance of seeking permission from a trusted adult before purchasing.	
	Privacy and Security	I can explain what a strong password is and demonstrate how to create one. I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. I can explain what app permissions are and can give some examples.	
	Copy-yright and Own-ership	I can assess and justify when it is acceptable to use the work of others. I can give examples of content that is permitted to be reused and know how this content can be found online.	

		Online safety Knowledge	Use Project Evolve materials
Y4	Self-image and identity	I can explain how my online identity can be different to my offline identity. I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them. I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.	
	Online relationships	I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms) . I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours.	
	Online Reputation	I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs. I can describe how to find out information about others by searching online.	
	Online Bullying	I can recognise when someone is upset, hurt or angry online. I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation).	
	Managing Online Information	I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others. I can describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy (e.g. social media, image sites, video sites). I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true.	
	Health, Well-Being and Lifestyle	I can explain how using technology can be a distraction from other things, in both a positive and negative way. I can identify times or situations when someone may need to limit the amount of time they use technology e.g. I can suggest strategies to help with limiting this time.	
	Privacy and Security	I can describe strategies for keeping personal information private, depending on context. I can explain that internet use is never fully private and is monitored, e.g. adult supervision. I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure. I know what the digital age of consent is and the impact this has on online services asking for consent.	
	Copyright and Ownership	When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images.	
Y3	Self-image and identity	I can explain what is meant by the term 'identity'. I can explain how people can represent themselves in different ways online. I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why.	
	Online relationships	I can describe ways people who have similar likes and interests can get together online. I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with. I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried.	
	Online Reputation	I can explain how to search for information about others online. I can give examples of what anyone may or may not be willing to share about themselves online. I can explain the need to be careful before sharing anything personal. I can explain who someone can ask if they are unsure about putting something online.	
	Online Bullying	I can describe appropriate ways to behave towards other people online and why this is important. I can give examples of how bullying behaviour could appear online and how someone can get support.	
	Managing Online Information	I can demonstrate how to use key phrases in search engines to gather accurate information online. I can explain what autocomplete is and how to choose the best suggestion. I can explain how the internet can be used to sell and buy things. I can explain the difference between a 'belief', an 'opinion' and a 'fact. and can give examples of how and where they might be shared online, e.g. in videos, memes, posts, news stories etc.	
	Health, Well-Being and Lifestyle	I can explain why spending too much time using technology can sometimes have a negative impact on anyone; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged . I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites).	
	Privacy and Security	I can describe simple strategies for creating and keeping passwords private. I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult. I can describe how connected devices can collect and share anyone's information with others.	
	Copyright and Ownership	I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause.	

		Online safety knowledge	Use Project Evolve materials
Y2	Self-image and identity	I can explain how other people may look and act differently online and offline. I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help.	
	Online relationships	I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country). I can explain who I should ask before sharing things about myself or others online. I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure. I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do.	
	Online Reputation	I can explain how information put online about someone can last for a long time. I can describe how anyone's online information could be seen by others. I know who to talk to if something has been put online without consent or if it is incorrect.	
	Online Bullying	I can explain what bullying is, how people may bully others and how bullying can make someone feel. I can explain why anyone who experiences bullying is not to blame. I can talk about how anyone experiencing bullying can get help.	
	Managing Online Information	I can use simple keywords in search engines. I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections). I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexa, Google Now, Siri). I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real' .	
	Health, Well-Being and Lifestyle	I can explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment. I can say how those rules / guides can help anyone accessing online technologies.	
	Privacy and Security	I can explain how passwords can be used to protect information, accounts and devices. I can explain and give examples of what is meant by 'private' and 'keeping things private'. I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords). I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions).	
	Copyright and Ownership	I can recognise that content on the internet may belong to other people. I can describe why other people's work belongs to them.	
Y1	Self-image and identity	I can recognise that there may be people online who could make someone feel sad, embarrassed or upset. If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust and how they can help.	
	Online relationships	I can give examples of when I should ask permission to do something online and explain why this is important. I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). I can explain why it is important to be considerate and kind to people online and to respect their choices. I understand what being considerate/kind means. I can describe what someone might feel like if you were unkind to them. I can describe ways in which I can try to be kind both offline and online. I can explain why things one person finds funny or sad online may not always be seen in the same way by others.	
	Online Reputation	I understand that information that is shared online can stay there for a very long time. I know that information can copied off the internet. I understand that information about me can be copied by others. I can describe what information I should not put online without asking a trusted adult first.	
	Online Bullying	I can describe how to behave online in ways that do not upset others and can give examples.	
	Managing Online Information	I can give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching. I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke. I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened.	
	Health, Well-Being and Lifestyle	I can explain rules to keep myself safe when using technology both in and beyond the home.	
	Privacy and Security	I can explain how passwords are used to protect information, accounts and devices. I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others.	
	Copyright and Ownership	I can explain why work I create using technology belongs to me. I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it"). I can save my work under a suitable title or name so that others know it belongs to me (e.g. filename, name on content). I understand that work created by others does not belong to me even if I save a copy.	