FORSBROOK CE PRIMARY SCHOOL
COMPUTING CURRICULUM

COMPUTING OBJECTIVES – A BRIEF BREAKDOWN

- **Objectives from the National Curriculum** **DL = digital literacy** **CS= computer science** **IT – Information Technology**
- **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
- use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet
- recognise common uses of information technology beyond school.

- **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
- use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour
- select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

INFORMATION TECHNOLOGY

- Many objectives for Information Technology can be completed as part of our well-rounded, creative curriculum.

- Therefore the objectives can be covered, cross- curricular, as part of English, Maths or other foundation subjects. Learners should know that technology is everywhere, be able to identify the technology they encounter and have a growing understanding of how it works. Therefore, the implementation of this part of the curriculum can happen discretely or as part of a creative curriculum.

- In selecting the correct app or programme, lower down the school, the teacher will need to make this selection. However, as they progress through the school it should be encouraged for the children to make their own choices.

- Learners also need to know how to store and organise their files online and locally so that it can easily be found again.

OTHER ASPECTS OF INFORMATION TECHNOLOGY

Included in our overview are Word Processing, Data Handling and Presentation, web design and eBook creation which should be included as part of our Information Technology strand. However, there are other parts that could be included as part of Information Technology that you may included in a cross curricula manner.

Area	Learning
Animation EYS → Y6	I can animate a character in role. I can add filters and alter an image. I can create a simple stop motion animation. I can improve stop motion animation and can use animation tools in presenting software. I can use software to create a 3D animated story. I can add green screen effects to stop motion animation. I can mix animations and video recordings of myself to create video interviews
Video Creation EYS → Y6	I know the difference between photography and video and can create short video recordings and watch them back. I can highlight and zoom into images as I record. I can use tools to add effects to a video and use green screen with support. I can independently use green screen, add a sequence of mixed media and record a voiceover in a timeline and trim film clips in an editing process. I can add music and sound effects and can confidently use green screen to add animated backgrounds. I can use split screen and cut away tools in iMovie and can evaluate and improve the best video tools and explain why. I can use the green screen masking tool and I can add animated subtitles to enhance my creation.
Augmented Reality and Virtual Reality EYS → Y6	I can scan a QR code and explore a 360° image. I can explore an interactive 360° image and scan an AR code to launch an AR experience. I can create my own QR code and bring in images to explore in Augmented Reality. I can create my own digital 360° image and explore it in VR and I can create my own images and bring it into my surroundings through AR. I can create my own 360° video and add multiple images into my surroundings in AR to explain a concept. I can create an interactive VR experience I can use a 3D drawing app to create realistic representations of world objects.
Sound EYS → Y6	I can record sounds with different resources. I can create a sequence of sounds and explore long and short sounds with my voice and other instruments I can create musical compositions using software. I can create music to suit a mood/ atmosphere and experiment with sound loops. I can record a radio broadcast or audio book. I can create a remix of a popular song. I can compose a soundtrack that can be added to a film project.

COMPUTER SCIENCE

- Computer Science has been broken down into three strands: Computational Thinking, Programming and Computer Networks.

- Computational Thinking is all about solving problems effectively with or without a computer (unplugged). Computational thinking is about looking at a problem in a way in which a computer can help us to solve it.
  This is a two-step process:
  1. First, we think about the sequence of steps (an algorithm) needed to solve a problem
  2. Then, we use our technical skills to get the computer working on the problem as we implement our algorithm as code.

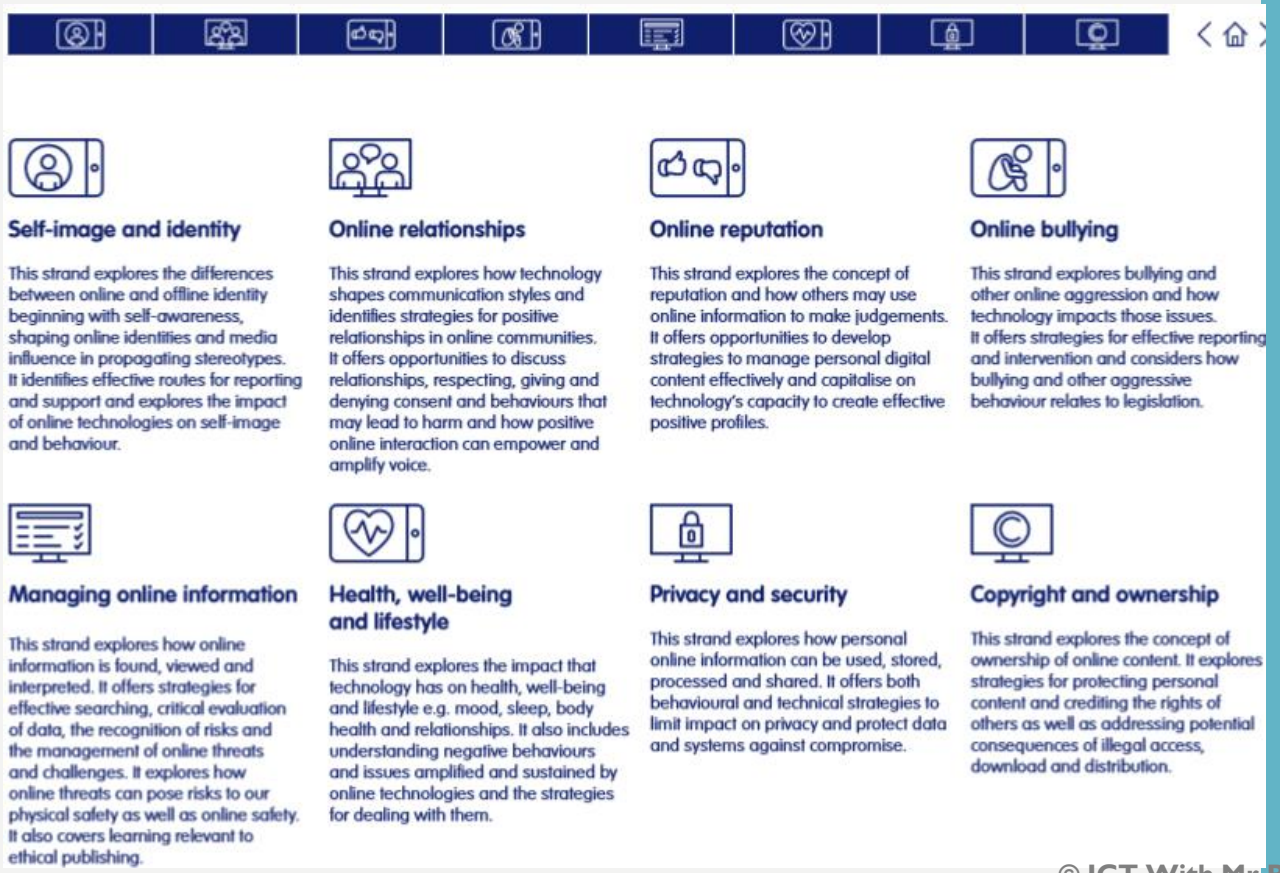
- Programming is one application of computational thinking. Learners will write algorithms and implement these as code. They also need to be able to find mistakes and fix them (debugging.) Once learners have created a program they need to learn to evaluate and look at different ways to achieve the same goal and which method is most appropriate. As learners get older the programs they write will become more complex using a range of constructs such as sequence, selection, repetition and variables in their programs.

- Computer Networks: KS2 pupils also require knowledge of networks, such as the Internet, work and how searches are performed.

DIGITAL LITERACY

- The objectives given in this overview have been taken from the Education for a Connected World document.

- It is important that in today's increasingly digital world, children are equipped with knowledge of the benefits that are offered by technology along with a critical recognition of their own and other's online behaviour. Along with this critical awareness, the curriculum should equip the children with effective strategies to implement in order to stat safe and make a positive contribution to any online communities within which they may engage.
- The Education for a Connected World framework outlines to skills and understanding that children and young people should know and be able to develop to be able to navigate the online world safely.
- There are opportunities for Digital Literacy to be covered cross curricula. Where this is applicable, the EDfaCW symbol will be shown.



Self-image and identity

This strand explores the differences between online and offline identity beginning with self-awareness, shaping online identities and media influence in propagating stereotypes. It identifies effective routes for reporting and support and explores the impact of online technologies on self-image and behaviour.

Online relationships

This strand explores how technology shapes communication styles and identifies strategies for positive relationships in online communities. It offers opportunities to discuss relationships, respecting, giving and denying consent and behaviours that may lead to harm and how positive online interaction can empower and amplify voice.

Online reputation

This strand explores the concept of reputation and how others may use online information to make judgements. It offers opportunities to develop strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles.

Online bullying

This strand explores bullying and other online aggression and how technology impacts those issues. It offers strategies for effective reporting and intervention and considers how bullying and other aggressive behaviour relates to legislation.

Managing online information

This strand explores how online information is found, viewed and interpreted. It offers strategies for effective searching, critical evaluation of data, the recognition of risks and the management of online threats and challenges. It explores how online threats can pose risks to our physical safety as well as online safety. It also covers learning relevant to ethical publishing.

Health, well-being and lifestyle

This strand explores the impact that technology has on health, well-being and lifestyle e.g. mood, sleep, body health and relationships. It also includes understanding negative behaviours and issues amplified and sustained by online technologies and the strategies for dealing with them.

Privacy and security

This strand explores how personal online information can be used, stored, processed and shared. It offers both behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise.

Copyright and ownership

This strand explores the concept of ownership of online content. It explores strategies for protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.

EYFS

EYFS COMPUTING OVERVIEW- INFORMATION TECHNOLOGY

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Word Processing	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can play on a touch screen game and use computers/keyboards/mouse in role play • I can type letters with increasing confidence using a keyboard and tablet. • I can dictate short, clear sentences into a digital device.				
Data Handling		• I can identify a chart. • I can sort physical objects, take a picture and discuss what I have done. • I can present simple data on a digital device.				
Presentations, web design and eBook Creation		• I can record my voice over a picture. • I can create a simple digital collage. • I can move and resize images with my fingers or mouse.				

Where?
Seesaw, Word, Pages Google Docs, Pic Collage,

EYFS COMPUTING OVERVIEW- COMPUTER SCIENCE

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Computational thinking	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	• I can follow simple oral algorithms • I can spot simple patterns • I can sequence simple familiar tasks				
Coding and Programming		• I can use a mouse, touch screen or appropriate access device to target and select options on screen • I can input a simple sequence of commands to control a digital device with support (Bee Bot)				

Where?

Barefoot computing- Algorithms: https://www.barefootcomputing.org/concepts-and-approaches/algorithms
Decomposition: https://www.barefootcomputing.org/concepts-and-approaches/decomposition
Logic: https://www.barefootcomputing.org/concepts-and-approaches/logic
Patterns: https://www.barefootcomputing.org/concepts-and-approaches/patterns

Beebot, (physical resource, app)
Daisy The Dinosaur (app)

EYFS COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Self Image and Identity • I can recognise that I can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who asks me to do something that makes me feel sad, embarrassed or upset. • I can explain how this could be either in real life or online.				
	Online Relationships • I can recognise some ways in which the internet can be used to communicate. • I can give examples of how I (might) use technology to communicate with people I know.				
	Online Reputation • I can identify ways that I can put information on the internet.				
	Online Bullying • I can describe ways that some people can be unkind online. • I can offer examples of how this can make others feel.				
	Managing Online Information • I can talk about how I can use the internet to find things out. • I can identify devices I could use to access information on the internet. • I can give simple examples of how to find information (e.g. search engine, voice activated searching).				
	Health ,Well-being and Lifestyle • I can identify rules that help keep us safe and healthy in and beyond the home when using technology. • I can give some simple examples.				
	Privacy and Security • I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). • I can describe the people I can trust and can share this with; I can explain why I can trust them.				
	Copyright and Ownership • I know that work I create belongs to me. • I can name my work so that others know it belongs to me.				

Where?
Project Evolve - https://projectevolve.co.uk/toolkit/years/early-years-7/
CEOP- https://www.thinkuknow.co.uk/professionals/resources/

YEAR 1

Year 1 Computing overview- Information Technology

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Word Processing	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	• I can confidently type words quickly and correctly on a digital device. • I can use the space bar to make space and delete to delete letters/ words • I can make a new line using enter/return • I can dictate into a digital device more accurately and with punctuation.				
Data Handling		• I can sort images or text into two or more categories on a digital device. • I can collect data on a topic. • I can create a tally chart and pictogram. • I can record myself explaining what I have done and what it shows me.				
Presentations, web design and eBook Creation		• I can add voice labels to an image. • I can add a voice recording to a storyboard. • I can add speech bubbles to an image to show what a character thinks. • I can import images to a project from the web and camera roll				

Where? Seesaw, Word, Pages Google Docs, Pic Collage,
NCCE Teach Computing
Computing Networks- Technology around us https://teachcomputing.org/curriculum/key-stage-1
Creating media - Digital Painting https://teachcomputing.org/curriculum/key-stage-1 C/C Art and Design
Creating media - Digital Writing https://teachcomputing.org/curriculum/key-stage-1 C/C English
Grouping data - https://teachcomputing.org/curriculum/key-stage-1 C/C Maths (EDfaCW)

Year 1 Computing overview-Computer Science

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Computational thinking	• 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	• I understand what algorithms are • I can write simple algorithms • I understand the sequence of algorithms is important • I can debug simple algorithms • I understand that algorithms are implemented as programs on digital devices				
Coding and Programming		• I can create a simple program e.g. sequence of instructions for a Bee Bot • I can use sequence in programs I can locate and fix bugs in my program				

Where?
NCCE Teach Computing
(C/T) Programming A - How to Move a Robot https://teachcomputing.org/curriculum/key-stage-1
(C/T) Programming B – Introduction to animation https://teachcomputing.org/curriculum/key-stage-1

Barefoot - https://www.barefootcomputing.org/my-barefoot-my-curriculum

YEAR 1 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
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 material on the internet or other online technologies Where? Project Evolve https://projectevolve.co.uk/toolkit/years/year-one/ CEOP https://www.thinkuknow.co.uk/professionals/resources/	Self Image and Identity • I can recognise that there may be people online who could make me 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.				
	Online Relationships • I can use the internet with adult support to communicate with people I know. • I can explain why it is important to be considerate and kind to people online.				
	Online Reputation • I can recognise that information can stay online and could be copied. • 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 use the internet to find things out. • I can use simple keywords in search engines • I can describe and demonstrate how to get help from a trusted adult or helpline if I find content that makes me feel sad, uncomfortable worried or frightened.				
	Health ,Well-being and Lifestyle • I can explain rules to keep us safe when we are using technology both in and beyond the home. • I can give examples of some of these rules.				
	Privacy and Security • I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school). • I can explain why I should always ask a trusted adult before I share any information about myself online. • I can explain how passwords can be used to protect information and devices.				
	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. 'it is my idea' or 'I designed it'). • I can save my work so that others know it belongs to me (e.g. filename, name on content).				

YEAR 2

Year 2 Computing overview- Information Technology

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Word Processing	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	• I can use the space bar only once between words and use touch to navigate to words letter to edit • I can copy and paste images and text • Use caps locks for capital letters. • I can add images alongside text in a word processed document. • I can dictate longer passages into a digital device with accurate punctuation.				
Data Handling		• I can sort digital objects into a range of charts such as Venn diagrams, carroll diagrams and bar charts using different apps and software. • I can orally record myself explaining what the data shows me. • I can create a branching database using questions				
Presentations, web design and eBook Creation		• I can add voice labels to an image. • I can add a voice recording to a storyboard. • I can add speech bubbles to an image to show what a character thinks. • I can import images to a project from the web and camera roll				

Where?
Seesaw, Word, Pages Google Docs, Pic Collage,
NCCE Teach Computing - Creating media - Digital Photography - https://teachcomputing.org/resources C/C Art and Design (EDfaCW)
Creating media - Making music - https://teachcomputing.org/resources C/C Music (EDfaCW)
Pictograms - https://teachcomputing.org/resources C/C Maths (EDfaCW)

Year 2 Computing overview-Computer Science

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Computational thinking	• 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	• I can write algorithms for everyday tasks • I can use logical reasoning to predict the outcome of algorithms • I understand decomposition is breaking objects/processes down • I can implement simple algorithms on digital devices (Bee Bots, Apps: Daisy the Dino) • I can debug algorithms				
Coding and Programming		• I understand programs execute by following precise and unambiguous instructions • I can create programs on a variety of digital devices • I can debug programs of increasing complexity • I can use logical reasoning to predict the outcome of simple programs				

Where?
NCCE Teach Computing - **(C/T)** Programming A Robot Algorithms - https://teachcomputing.org/curriculum/key-stage-1
(C/T) Programming B Introduction to quizzes - https://teachcomputing.org/curriculum/key-stage-1

Barefoot - https://www.barefootcomputing.org/my-barefoot-my-curriculum

YEAR 2 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
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 material on the internet or other online technologies	Self Image and Identity • I can explain how other people's identity online can be different to their identity in real life. • I can describe ways in which people might make themselves look different online. • I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help.				
	Online Relationships • I can use the internet to communicate with people I don't know well (e.g. email a penpal in another school/ country). • I can give examples of how I might use technology to communicate with others I don't know well.				
	Online Reputation • I can explain how information put online about me can last for a long time. • I know who to talk to if I think someone has made a mistake about putting something online.				
	Online Bullying • I can give examples of bullying behaviour and how it could look online. • I understand how bullying can make someone feel. • I can talk about how someone can/would get help about being bullied online or offline.				
	Managing Online Information • I can use 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 (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'. • I can explain why some information I find online may not be true.				
	Health ,Well-being and Lifestyle • I can explain simple guidance for using technology in different environments and settings. • I can say how those rules/guides can help me				
	Privacy and Security • I can describe how online information about me could be seen by others • I can describe and explain some rules for keeping my information private. • I can explain what passwords are and can use passwords for my accounts and devices. • I can explain how many devices in my home could be connected to the internet and can list some of those devices.				
	Copyright and Ownership • I can describe why other people's work belongs to them. • I can recognise that content on the internet may belong to other people.				

Where?
NCCE Teach Computing Information Technology Around Us https://teachcomputing.org/resources (EDfaCW)

Project Evolve https://projectevolve.co.uk/toolkit/years/year-two/

CEOP https://www.thinkuknow.co.uk/professionals/resources/

YEAR 3

Year 3 Computing overview- Information Technology

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Word Processing	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.	• I can use index fingers on keyboard home keys (f/j), use left fingers for a/ s/d/f/g, and use right fingers for h/j/k/l • I can edit the style and effect of my text and images to make my document more engaging and eye-catching. For example, borders and shadows. • I can use cut, copy and paste to quickly duplicate and organise text.				
Data Handling		• I can create my own sorting diagram and complete a data handling activity with it using images and text. • I can start to input simple data into a spreadsheet. • I can create a feelings chart exploring a story or character's feelings.				
Presentations, web design and eBook Creation		• I can create an interactive comic with sounds, formatted text and video. • I can annotate an image with videos • I can create a simple web page. • I can create a simple digital timeline/mindmap				

Where?
Seesaw, Word, Pages Google Docs, Pic Collage,
NCCE Teach Computing - Creating Media- Desktop Publishing https://teachcomputing.org/curriculum/key-stage-2 (EDfaCW)
Creating Media- Animation https://teachcomputing.org/curriculum/key-stage-2 (EDfaCW)
Branching databases - https://teachcomputing.org/curriculum/key-stage-2

Year 3 Computing overview-Computer Science

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Computational thinking	• 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	• I can create algorithms for use when programming • I can decompose tasks (such as animations) into separate steps to create an algorithm • I understand abstraction is focusing on important information • I can identify patterns in an algorithm I can use repetition in algorithms				
Coding and Programming		• I can design and create programs • I can write programs that accomplish specific goals • I can use repetition in programs I can work with various forms of input				
Computer Networks		• I understand that computers in a school are connected together in a network • I understand why computers are networked • I understand the difference between the Internet and the World Wide Web (WWW)				

Where? Barefoot Computing- https://www.barefootcomputing.org/my-barefoot-my-curriculum
Beebot, Scratch Jnr, Kodable, Tynker, Scratch 3, Hopscotch, Swift Playgrounds,
NCCE Teach Computing - **(C/T)** Programming A- Sequence in music https://teachcomputing.org/curriculum/key-stage-2 C/C Music
- **(C/T)** Programming B- Events and actions https://teachcomputing.org/curriculum/key-stage-2
Computing Systems and Networks- Connecting Computers https://teachcomputing.org/curriculum/key-stage-2

YEAR 3 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	Self Image and Identity • I can explain what is meant by the term 'identity'. • I can explain how I can represent myself in different ways online. • I can explain ways in which and why I might change my identity depending on what I am doing online (e.g. gaming; using an avatar; social media).				
	Online Relationships • I can describe ways people who have similar likes and interests can get together online. • I can give examples of technology-specific forms of communication (e.g. emojis, acronyms, text speak). • I can explain some risks of communicating online with others I don't know well. • I can explain how my and other people's feelings can be hurt by what is said or written online. • I can explain why I should be careful who I trust online and what information I can trust them with. I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried. • I can explain what it means to 'know someone' online and why this might be different from knowing someone in real life. I can explain what is meant by 'trusting someone online'. I can explain why this is different from 'liking someone online'.				
	Online Reputation • I can search for information about myself online. • I can recognise I need to be careful before I share anything about myself or others online. • I know who I should ask if I am not sure if I should put something online.				
	Online Bullying • I can explain what bullying is and can describe how people may bully others. • I can describe rules about how to behave online and how I follow them.				

Where?
Be Internet Legends: https://storage.googleapis.com/gweb-interland.appspot.com/en-gb-all/hub/pdfs/Google_InternetLegends_Scheme%20of%20Work.pdf
Project Evolve: https://projectevolve.co.uk/toolkit/years/year-three/
CEOP: https://www.thinkuknow.co.uk/professionals/resources/

YEAR 3 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
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	<u>Managing Online Information</u> • I can use key phrases in search engines. • 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'.				
	<u>Health ,Well-being and Lifestyle</u> • I can explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos).				
	<u>Privacy and Security</u> • I can give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. • I understand and can give reasons why passwords are important. • I can describe simple strategies for creating and keeping passwords private. • I can describe how connected devices can collect and share my information with others.				
	<u>Copyright and Ownership</u> • I can explain why copying someone else's work from the internet without permission can cause problems. • I can give examples of what those problems might be.				

Where?
<u>Be Internet Legends:</u> https://storage.googleapis.com/gweb-interland.appspot.com/en-gb-all/hub/pdfs/Google_InternetLegends_Scheme%20of%20Work.pdf
<u>Project Evolve</u>: https://projectevolve.co.uk/toolkit/years/year-three/
<u>CEOP:</u> https://www.thinkuknow.co.uk/professionals/resources/

YEAR 4

Year 4 Computing overview- Information Technology

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Word Processing	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.	• I can combine digital images from different sources, objects, and text to make a final piece of a variety of tasks: posters, documents, eBooks, scripts, leaflets. • Confidently and regularly use text shortcuts such as cut, copy and paste and delete to organise text • Use font sizes appropriately for audience and purpose.\Use spell check and thesaurus including through Siri and other AI technology				
Data Handling		• I can create my own online multiple choice questionnaire. • I can input data into a spreadsheet and export the data in a variety of ways: charts, bar charts, pie charts. • I understand how data is collected.				
Presentations, web design and eBook Creation		• I can create an interactive quiz eBook introducing hyperlinks. • I can create an eBook with text, images and sound. • I can create a presentation demonstrating my understanding with a range of media. • I can create a digital timeline/mindmap and include different media - sound and video.				

Where?
Seesaw, Word, Pages Google Docs Keynote Book Creator, Popplet,
Google Sheets, Google Forms, Excel, Numbers, Kahoot
Google Sites, Book Creator, Keynote, Powerpoint, Adobe Spark Page, Thinglink,
NCCE Teach Computing - Creating media- Audio Editing https://teachcomputing.org/curriculum/key-stage-2 (EDfaCW)
Creating media – Photo Editing https://teachcomputing.org/curriculum/key-stage-2 (EDfaCW)
Data Logging - https://teachcomputing.org/curriculum/key-stage-2 C/C Science observation/ data loggers

Year 4 Computing overview-Computer Science

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Computational thinking	• 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	• I can use abstraction to focus on what's important in my design • I can write increasingly more precise algorithms for use when programming. • I can use simple selection in algorithms • I can use logical reasoning to detect and correct errors in programs				
Coding and Programming		• I can use simple selection in programs • I can work with various forms of output • I can use logical reasoning to systematically detect and correct errors in programs • I can work with various forms of output				
Computer Networks		• I understand that servers on the Internet are located across the planet • I understand how email is sent across the Internet • I understand how the Internet enables us to collaborate				

Where? Barefoot Computing- https://www.barefootcomputing.org/my-barefoot-my-curriculum
Beebot, Scratch Jnr, Kodable, Tynker, Scratch 3, Hopscotch, Swift Playgrounds,
NCCE Teach Computing - **(C/T)** Programming A- Repetition in Shapes https://teachcomputing.org/curriculum/key-stage-2
(C/T) Programming B – Repitition in Games https://teachcomputing.org/curriculum/key-stage-2
Computing Systems and Networks- The Internet https://teachcomputing.org/curriculum/key-stage-2

YEAR 4 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	Self Image and Identity • I can explain how my online identity can be different to the identity I present in 'real life' • Knowing this, I can describe the right decisions about how I interact with others and how others perceive me.				
	Online Relationships • can describe strategies for safe and fun experiences in a range of online social environments • I can give examples of how to be respectful to others online.				
	Online Reputation • I can describe how others can find out information about me by looking online. • I can explain ways that some of the information about me online could have been created, copied or shared by others.				
	Online Bullying • I can identify some online technologies where bullying might take place. • I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). • I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation).				

Where?
Be Internet Legends: https://storage.googleapis.com/gweb-interland.appspot.com/en-gb-all/hub/pdfs/Google_InternetLegends_Scheme%20of%20Work.pdf
Project Evolve: https://projectevolve.co.uk/toolkit/years/4/
CEOP: https://www.thinkuknow.co.uk/professionals/resources/

YEAR 4 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
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	<u>Managing Online Information</u> • I can analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. • I can describe how I can search for information within a wide group of technologies (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 that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. • can explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true.				
	<u>Health ,Well-being and Lifestyle</u> • I can explain how using technology can distract me from other things I might do or should be doing. • I can identify times or situations when I might need to limit the amount of time I use technology. • I can suggest strategies to help me limit this time.				
	<u>Privacy and Security</u> • I can explain what a strong password is. • I can describe strategies for keeping my personal information private, depending on context. • I can explain that others online can pretend to be me or other people, including my friends • I can suggest reasons why they might do this • I can explain how internet use can be monitored.				
	<u>Copyright and Ownership</u> • 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.				

Where?
<u>Be Internet Legends:</u> https://storage.googleapis.com/gweb-interland.appspot.com/en-gb-all/hub/pdfs/Google_InternetLegends_Scheme%20of%20Work.pdf
<u>Project Evolve</u>: https://projectevolve.co.uk/toolkit/years/4/
<u>CEOP:</u> https://www.thinkuknow.co.uk/professionals/resources/

YEAR 5

Year 5 Computing overview- Information Technology

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Word Processing	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.	• I can start to apply other useful effects to my documents such as hyperlinks. • I can import sounds to accompany and enhance the text in my document. • I can organise and reorganise text on screen to suit a purpose				
Data Handling		• I can create and publish my own online questionnaire and analyse the results. • I can use simple formulae to solve calculations including = sum and other statistical functions • I can edit and format difference cells in a spreadsheet.				
Presentations, web design and eBook Creation		• I can collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365 • I can create and export an interactive presentation including a variety of media, animations, transitions and other effects. • I can create an interactive guide to a image by embedding digital content and publishing it online. • I can create a webpage and embed video.				

Where?
Seesaw, Word, Pages Google Docs Keynote Book Creator, Popplet
Google Sheets, Google Forms, Excel, Numbers, Mentimeter
Google Sites, Book Creator, Keynote, Powerpoint, Wakelet, Adobe Spark Page, Thinglink,
NCCE Teach Computing - Creating Media – Vector Drawing https://teachcomputing.org/curriculum/key-stage-2 (EDfaCW)
Creating Media - Video Editing https://teachcomputing.org/curriculum/key-stage-2 (EDfaCW)
Data and Information – Flat File Databases https://teachcomputing.org/curriculum/key-stage-2

Year 5 Computing overview-Computer Science

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Computational thinking	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	• I can solve problems by decomposing them into smaller parts • I can use selection in algorithms • I can recognise the need for conditions in repetition within algorithms • I can use logical reasoning to explain how a variety of algorithms work • I can use logical reasoning to detect and correct errors in algorithms • I can evaluate my work and identify errors				
Coding and Programming		• I can create programs by decomposing them into smaller parts • I can use selection in programs • I can use conditions in repetition commands • I can work with variables • I can create programs that control or simulate physical systems • I can evaluate my work and identify errors				
Computer Networks		• I understand how we view web pages on the Internet • I use search technologies effectively • I understand that web spiders index the web for search engines • I appreciate how pages are ranked in a search engine				

Where? Barefoot Computing- https://www.barefootcomputing.org/my-barefoot-my-curriculum
Beebot, Scratch Jnr, Kodable, Tynker, Scratch 3, Hopscotch, Swift Playgrounds,
NCCE Teach Computing - Computing Systems and Networks- Sharing Information https://teachcomputing.org/curriculum/key-stage-2
(C/T) Programming A – Selection in physical computing https://teachcomputing.org/curriculum/key-stage-2 C/C Science - Electricity
(C/T) Programming B – Selection in quizzes https://teachcomputing.org/curriculum/key-stage-2

YEAR 5 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	<u>Self Image and Identity</u> • I can explain how identity online can be copied, modified or altered. • I can demonstrate responsible choices about my online identity, depending on context.				
	<u>Online Relationships</u> • 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 make positive contributions and be part of online communities. • I can describe some of the communities in which I am involved and describe how I collaborate with others positively.				
	<u>Online Reputation</u> I can search for information about an individual online and create a summary report of the information I find. • I can describe ways that information about people online can be used by others to make judgments about an individual.				
	<u>Online Bullying</u> • I can recognise when someone is upset, hurt or angry online. • I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone. • I can explain how to block abusive users. • I can explain how I would report online bullying on the apps and platforms that I use. • I can describe the helpline services who can support me and what I would say and do if I needed their help (e.g. Childline).				

Where?
<u>Be Internet Legends:</u> https://storage.googleapis.com/gweb-interland.appspot.com/en-gb-all/hub/pdfs/Google_InternetLegends_Scheme%20of%20Work.pdf
<u>Project Evolve</u>: https://projectevolve.co.uk/toolkit/years/5/
<u>CEOP:</u> https://www.thinkuknow.co.uk/professionals/resources/

YEAR 5 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
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	<u>Managing Online Information</u> • I can use different search technologies. • I can evaluate digital content and can explain how I make choices from search results. • I can explain key concepts including: data, information, fact, opinion belief, true, false, valid, reliable and evidence. • I understand the difference between online mis-information (inaccurate information distributed by accident) and dis-information (inaccurate information deliberately distributed and intended to mislead). 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 explain what is meant by a 'hoax'. • I can explain why I need to think carefully before I forward anything online. • I can explain why some information I find online may not be honest, accurate or legal. • I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g. the sharing of misinformation either by accident or on purpose).				
	<u>Health ,Well-being and Lifestyle</u> • I can describe ways technology can affect healthy sleep and can describe some of the issues. • I can describe some strategies, tips or advice to promote healthy sleep with regards to technology				
	<u>Privacy and Security</u> • I can create and use strong and secure passwords. • I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. • I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing.				
	<u>Copyright and Ownership</u> • 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.				

Where?
<u>Be Internet Legends:</u> https://storage.googleapis.com/gweb-interland.appspot.com/en-gb-all/hub/pdfs/Google_InternetLegends_Scheme%20of%20Work.pdf
<u>Project Evolve</u>: https://projectevolve.co.uk/toolkit/years/5/
<u>CEOP:</u> https://www.thinkuknow.co.uk/professionals/resources/

YEAR 6

Year 6 Computing overview- Information Technology

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Word Processing	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.	• I can confidently choose the best application to demonstrate my learning. • I can format text to suit a purpose. • I can publish my documents online regularly and discuss the audience and purpose of my content.				
Data Handling		• I can write spreadsheet formula to solve more challenging maths problems. • I can create and publish my own online quiz with a range of media (images and video).				
Presentations, web design and eBook Creation		• I can create a web site which includes a variety of media. • I can design an app prototype that links multimedia pages together with hyperlinks. • I can choose applications to communicate to a specific audience. • I can evaluate my own content and consider ways to improvements.				

Where?
Seesaw, Word, Pages Google Docs Keynote Book Creator, Popplet
Google Sheets, Google Forms, Excel, Numbers, Mentimeter
Google Sites, Book Creator, Keynote, Powerpoint, Wakelet, Adobe Spark Page, Thinglink,
NCCE Teach Computing - Creating Media - 3D Modelling https://teachcomputing.org/curriculum/key-stage-2 (EDfaCW)
Creating Media – Web page creation https://teachcomputing.org/curriculum/key-stage-2 (EDfaCW)
Spreadsheets - https://teachcomputing.org/curriculum/key-stage-2 C/C Maths (EDfaCW)

Year 6 Computing overview-Computer Science

Computing strand	NC Objective	Skills/ Knowledge	Date covered			
Computational thinking	• 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	• I can recognise, and make use, of patterns across programming projects • I can write precise algorithms for use when programming • I can identify variables needed and their use in selection and repetition • I can decompose code into sections for effective debugging • I can critically evaluate my work and suggest improvements				
Coding and Programming		• I can use a range of sequence, selection and repletion commands combined with variables as required to implement my design • I can create procedures to hide complexity in programs • I can identify and write generic code for use across multiple projects • I can critically evaluate my work and suggest improvements • I can identify and use basic HTML tags (See Computer Networks objectives)				
Computer Networks		• I understand what HTML is and recognize HTML tags • I know a range of HTML tags and can remix a web page • I can create a webpage using HTML				

Where? Barefoot Computing- https://www.barefootcomputing.org/my-barefoot-my-curriculum
Beebot, Scratch Jnr, Kodable, Tynker, Scratch 3, Hopscotch, Swift Playgrounds,
NCCE Teach Computing – Computing Systems and Networks- Communication https://teachcomputing.org/curriculum/key-stage-2 (EDfaCW)
(C/T) Programming A – Variables in games https://teachcomputing.org/curriculum/key-stage-2(EDfaCW)
(C/T) Programming B – Sensing https://teachcomputing.org/curriculum/key-stage-2

YEAR 6 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	<u>Self Image and Identity</u> • I can describe ways in which media can shape ideas about gender. • I can identify messages about gender roles and make judgements based on them. • I can challenge and explain why it is important to reject inappropriate messages about gender online. • I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline. • I can explain why I should keep asking until I get the help I need.				
	<u>Online Relationships</u> • I can show I understand my responsibilities for the well-being of others in my online social group. • I can explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming). • I can demonstrate how I would support others (including those who are having difficulties) online. • I can demonstrate ways of reporting problems online for both myself and my friends.				
	<u>Online Reputation</u> • I can explain how I am developing an online reputation which will allow other people to form an opinion of me. • I can describe some simple ways that help build a positive online reputation				
	<u>Online Bullying</u> • 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 identify a range of ways to report concerns both in school and at home about online bullying.				

Where?
<u>Be Internet Legends:</u> https://storage.googleapis.com/gweb-interland.appspot.com/en-gb-all/hub/pdfs/Google_InternetLegends_Scheme%20of%20Work.pdf
<u>Project Evolve</u>: https://projectevolve.co.uk/toolkit/years/6/
<u>CEOP:</u> https://www.thinkuknow.co.uk/professionals/resources/

YEAR 6 COMPUTING OVERVIEW- DIGITAL LITERACY/ONLINE SAFETY - EDUCATION FOR A CONNECTED WORLD OBJECTIVES

NC Objective	Skills/ Knowledge	Date covered			
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	<u>Managing Online Information</u> • I can use search technologies effectively. • I can explain how search engines work and how results are selected and ranked. • I can demonstrate the strategies I would apply to be discerning in evaluating digital content. • 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'. I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how I might encounter these online (e.g. advertising and 'ad targeting'). • I can demonstrate strategies to enable me to analyse and evaluate the validity of 'facts' and I can explain why using these strategies are important. • I can identify, flag and report inappropriate content.				
	<u>Health ,Well-being and Lifestyle</u> • I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose. • I can assess and action different strategies to limit the impact of technology on my health (e.g. nightshift mode, regular breaks, correct posture, sleep, diet and exercise). • I can explain the importance of self-regulating my use of technology; I can demonstrate the strategies I use to do this (e.g. monitoring my time online, avoiding accidents).				
	<u>Privacy and Security</u> • I use different passwords for a range of online services. • I can describe effective strategies for managing those passwords (e.g. password managers, acronyms, stories). • I know what to do if my password is lost or stolen. • I can explain what app permissions are and can give some examples from the technology or services I use. • 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)				
	<u>Copyright and Ownership</u> • 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.				

Where?
<u>Be Internet Legends:</u> https://storage.googleapis.com/gweb-interland.appspot.com/en-gb-all/hub/pdfs/Google_InternetLegends_Scheme%20of%20Work.pdf
<u>Project Evolve</u>: https://projectevolve.co.uk/toolkit/years/6/
<u>CEOP:</u> https://www.thinkuknow.co.uk/professionals/resources/