Computing Progression Framework

Numbering system

Subject.Year.Strand.Statement

Text shown in **bold** is a key term, and is defined in the Glossary.

DOMAIN: COMPUTER SCIENCE					
KEY STAGE 1					
Year 6					
Sub-strand	**Progression statement**	**What to look for guidance (Working towards expectations)**	**What to look for guidance (Meeting expectations)**	**What to look for guidance (Exceeding expectations)**	**Relevant *Switched on Computing* unit(s)**	**Switched on Computing badge**
Problem solving	C.6.1.1. Design, write and debug programs that accomplish specific goals.	The child can design and write a **program** using a second programming language based on their own ideas. The child can design a **program** of their own and write this in a programming language other than Scratch (or whichever language has formed the focus for their programming in other years), such as TouchDevelop or App Inventor, and be aware of errors in their **program**. The **program** need not be complex - a simple app would suffice. *(E.g. In 6.1, 6.4, 6.5, plan and implement their own app for a smartphone or tablet and be aware of errors in their program.)*	The child can design, write and **debug** a **program** using a second programming language based on their own ideas. The child can design a program of their own and write this in a programming language other than Scratch (or whichever language has formed the focus for their programming in other years), such as TouchDevelop or App Inventor. The second language does not need to be text based, but Logo or Python could be used. The child can test and **debug** their code, explain what bugs they found and how they fixed these. The **program** need not be complex - a simple app would suffice. *(E.g. In 6.1, 6.4, 6.5, plan, implement and debug their own app for a smartphone or tablet.)*	The child can design, write and **debug** a **program** using a second programming language based on their own ideas, using iterative development to make improvements. The child can design a program of their own and write this in a programming language other than Scratch (or whichever language has formed the focus for their programming in other years), such as TouchDevelop or App Inventor. The second language does not need to be text based, but Logo or Python could be used. The child can test and **debug** their code, explain what bugs they found and how they fixed these. The child can review their code, decide for themselves how this might be extended or improved, and then implement, test and **debug** these modifications. At this level, expect the child to be able to develop relatively complex apps with a degree of independence. *(E.g. In 6.1, 6.4, 6.5, plan, implement and debug their own app for a smartphone or tablet, drawing on iterative development approaches to make improvements.)*	6.1, 6.4, 6.5	Problem solver 2
	C.6.1.2. Controlling or simulating physical systems.	The child can experiment with computer control applications. The child can use simple computer control and/or sensors using smartphone **hardware** or with products they make in design and technology, perhaps using Lego WeDo kits, MaKey MaKey or similar. *(E.g. In 6.1, 6.4, 6.5, learn about additional input and output available in smartphones and tablets, making use of this in their app, if appropriate.)*	The child can design, write and **debug** their own computer control application. The child can add computer control and/or sensors to a smartphone app or to products they design and make in design and technology, perhaps using Lego WeDo kits, MaKey MaKey or similar. The child can show evidence of designing, writing and debugging their **program**, ensuring that this functions correctly on the available **hardware platform.** *(E.g. In 6.1, 6.4, 6.5, incorporate additional input and output available in the smartphone or tablet for which they are developing their app, if appropriate.)*	The child can design, write and **debug** own computer control application, using iterative development to make improvements. The child can add computer control and/or sensors to a smartphone app or to products they design and make in design and technology, perhaps using Lego WeDo kits, MaKey MaKey or similar. The child can show evidence of designing, writing and debugging their **program**, ensuring that this functions correctly on the available **hardware platform**. The child can review their code and, perhaps, their **hardware**, decide for themselves how this might be extended or improved, and then implement, test and **debug** these modifications. *(E.g. In 6.1, 6.4, 6.5, incorporate additional input and output available in the smartphone or tablet for which they are developing their app, if appropriate, making use of iterative development approaches to make improvements.)*	6.1, 6.4, 6.5	Problem solver 2
	C.6.1.3. Solve problems by decomposing them into smaller parts.	The child can plan a solution to a problem using decomposition. The child can take a complex problem, identify component parts, use decomposition to break this problem down and then plan how they can solve the problem by working through the elements they have identified. Projects could be extended, such as developing a smartphone app. *(E.g. In 6.2, use decomposition to plan how they will tackle the app development project.)*	The child can solve problems using decomposition, tackling each part separately. The child can take a complex problem, identify component parts, use decomposition to break this problem down and then plan how they can solve the problem by working through the elements they have identified. they can then use their plan to solve the original problem. Projects can be extended, such as developing a smartphone app. *(E.g. In 6.2, use decomposition to plan how they will tackle the app development project; follow their plan in subsequent units.)*	The child can apply decomposition to help understand complex systems. The child can apply the principle of decomposition to help them to understand how complex systems operate. This could be **software** or combined **hardware**/**software** systems such as a smartphone. In this case, the child could consider **input**, processing, memory, **output** and connectivity **hardware**, **operating system**, application **software** and **data** as separate, interconnected component systems. *(E.g. In 6.1, use decomposition approaches to develop their understanding of the different hardware and software components of smartphones or tablets.)*	6.1, 6.2	Problem solver 2

Computing Progression Framework

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DOMAIN: COMPUTER SCIENCE					
KEY STAGE 1					
Year 6					
Sub-strand	**Progression statement**	**What to look for guidance (Working towards expectations)**	**What to look for guidance (Meeting expectations)**	**What to look for guidance (Exceeding expectations)**	**Relevant *Switched on Computing* unit(s)** / **Switched on Computing badge**
Programming	C.6.2.1. Use sequence, selection and repetition in programs; work with variables.	The child can use **sequence**, **selection** and **repetition** in **programs**. The child's **program** should include **sequences** of **commands** or **blocks**, some **repetition** and **selection**. **Repetition** might include exit conditions (e.g. repeat...until...). **Selection** would normally be of an if...then or if...then...else type. At this level, expect the child to be able to combine **repetition** with **selection**. **Programs** might include a simple smartphone app. *(E.g. In 6.5, make use of sequence, selection and repetition in their app.)*	The child can use **sequence**, **selection**, **repetition** and **variables** in **programs**. The child's **program** should include **sequences** of **commands** or **blocks**, **repetition**, **selection** and **variables**. **Repetition** might include exit conditions (e.g. repeat...until...) and perhaps a counter-variable for **iteration**. Selection would normally be of an if...then or if...then...else type. At this level, expect the child to be able to combine **repetition** with **selection** and **variables**. **Programs** might include a simple smartphone app. *(E.g. In 6.5, make use of sequence, selection, repetition and variables in their app.)*	The child can use **sequence**, **selection**, **repetition**, **variables** and procedures in **programs**. The child's program should include **sequences** of **commands** or **blocks**, **repetition**, **selection**, **variables** and user-defined procedures, functions or custom **blocks**. **Repetition** might include exit conditions (e.g. repeat...until...) and perhaps a counter-variable for **iteration**. **Selection** would normally be of an if...then or if...then...else type. At this level, expect the child to be able to combine **repetition** with **selection** and **variables**. Procedures or custom **blocks** need not include passing parameters, although they might. **Programs** might include a smartphone app. *(E.g. In 6.5, make use of sequence, selection, repetition variables and procedures or functions in their app.)*	6.5 / Programmer 2
	C.6.2.2. Work with various forms of input and output.	The child can write a program that accepts keyboard and mouse or touch screen **input** and produces **output** on screen and through speakers. The child could create a smartphone app, using the touch screen for input and the screen and speakers or headphones for **output**. *(E.g. In 6.4 and 6.5, use touch screen input and screen and speaker output in their app.)*	The child can write a program that accepts **inputs** other than keyboard and mouse and produces **outputs** other than screen or speakers. The child could create a smartphone app, using the touch screen and the GPS sensor or accelerometer for **input**, and the screen and speakers or headphones plus vibration motor or **network** connection for **output**. *(E.g. In 6.4 and 6.5, use touch screen and other input (e.g. GPS or accelerometer) and screen, speaker and other output (e.g. vibration motor, network connectivity) in their app.)*	The child can use principles of good user-**interface** design, including accessibility, when developing **programs**. In developing their program, the child should take account of the needs of their intended users and be able to explain how these have influenced design and development decisions. The child should test their program with intended users, making changes on the basis of the feedback they receive. The child should consider design for accessibility, perhaps providing haptic feedback, audio narration or internationalisation to make, e.g. a smartphone app, more accessible. *(E.g. In 6.4, explain how they have designed the interface of their program with principles of effective design, their intended audience and some elements of accessibility in mind.)*	6.4, 6.5 / Programmer 2

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KEY STAGE 1					
Year 6					
Sub-strand	**Progression statement**	**What to look for guidance (Working towards expectations)**	**What to look for guidance (Meeting expectations)**	**What to look for guidance (Exceeding expectations)**	**Relevant *Switched on Computing* unit(s)**	**Switched on Computing badge**
Logical thinking	C.6.3.1.Use logical reasoning to explain how some simple algorithms work.	The child can explain an **algorithm** using **sequence, repetition** and **selection** in their own words. Given an **algorithm** using **sequence, repetition** and **selection**, the child can give a coherent, logically reasoned explanation of what it does and how it works. **Repetition** is likely to be using end conditions (e.g. repeat...until...), and **selection** is likely to be simply if...then. **Algorithms** used in familiar smartphone apps would be good examples. *(E.g. In 6.4 and 6.5, explain the event-driven algorithms they've used in the app.)*	The child can give clear and precise logical explanations of a number of **algorithms**. Given an **algorithm**, the child can describe what it does and, using logical reasoning, give precise explanations of how it works. **Algorithms** could be linked to programming projects, but might include a key **algorithm** such as binary search. *(E.g. In 6.4 and 6.5, give clear and precise explanations of the event-driven algorithms they've used in the app.)*	The child can use logical reasoning to explain how more complex **algorithms** work. Given an **algorithm**, the child should be able to describe what it does and, using logical reasoning, give precise explanations of how it works. **Algorithms** could be linked to programming projects, but might include key **algorithms** such as binary search, bubble sort or finding highest common factors. *(E.g. In 6.1, discuss some of the underlying algorithms for smartphone or tablet operating systems or GUIs.)*	6.1, 6.4, 6.5	Logical thinker 2
	C.6.3.2. Use logical reasoning to detect and correct errors in algorithms and programs.	The child can use logical reasoning to detect errors in **algorithms**. When given an **algorithm** for a particular purpose, e.g. a rule-based **algorithm** for a smartphone app, the child can use logical reasoning to identify possible errors in the **algorithm**, explaining why they believe the **algorithm** is incorrect. *(E.g. In 6.4 and 6.5, use logical reasoning to detect errors in the event-based algorithms they use in their app.)*	The child can use logical reasoning to detect and correct errors in **algorithms** (and **programs**). When given an **algorithm** for a particular purpose, e.g. a rule-based **algorithm** for a smartphone app, the child can use logical reasoning to identify possible errors in the **algorithm**, explaining why they believe the **algorithm** is incorrect. The child can use logical reasoning to suggest possible corrections to the **algorithm**, explaining why these would correct the bug they identified. *(E.g. In 6.4 and 6.5, use logical reasoning to detect and correct errors in the event-based algorithms they use in their app and in their code.)*	The child can suggest ways in which the efficiency of **algorithms** and **programs** can be improved. The child can consider alternative **algorithms** for particular problems, using logical reasoning to compare these for efficiency. Examples might include comparing linear and binary search, or comparing exhaustive search and Euclid's **algorithm** for finding highest common factors. *(E.g. In 6.4 and 6.5, suggest ways in which their algorithms or code can be made more efficient.)*	6.4, 6.5	Logical thinker 2
	C.6.3.3. Understand computer networks including the internet.	The child can understand that computers can communicate through **network** technologies other than the internet. The child can demonstrate an awareness of other networking technologies they might encounter, such as Bluetooth, mobile phone **networks** and the telephone **network**. *(E.g. In 6.1, recognise other networking technology provided in a smartphone or tablet.)*	The child can understand how mobile phone or other **networks** operate. The child can give an explanation of how mobile phone (or other) **networks** operate: they should know that information is transmitted digitally, and have some understanding of the network topology involved. In the case of mobile phone **networks**, the child should show some understanding of the interactions between a phone, cell transmitters/receivers and the **network's** control systems. *(E.g. In 6.1, demonstrate an understanding of how networks such as the cellular telephone system, Bluetooth and NFC operate.)*	The child can understand differences between **network** technologies. The child can compare and contrast different **network** technologies, discussing differences in topology, range, bandwidth and fault tolerance. *(In 6.1, explain some of the differences between the cellular telephone network, the internet, Bluetooth and NFC .)*	6.1	Communicator

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KEY STAGE 1					
Year 6					
Sub-strand	**Progression statement**	**What to look for guidance (Working towards expectations)**	**What to look for guidance (Meeting expectations)**	**What to look for guidance (Exceeding expectations)**	**Relevant *Switched on Computing* unit(s)**	**Switched on Computing badge**
Logical thinking	C.6.4.1. Understand how networks can provide multiple services, such as the world wide web.	The child can understand the difference between a domain name and an **IP address**. The child can distinguish between a domain name used by people (e.g. risingstars-uk.com) and an **IP address** used by computers (e.g. 192.237.142.203), and appreciate why domain names are more commonly used on the internet. *(E.g. In developing a website in 6.6, know the difference between a domain name and an IP address.)*	The child can understand how domain names are converted into **IP addresses** on the internet. The child can give some explanation of how a domain name is converted into an **IP address** using the distributed **domain name system (DNS)** using something similar to a set of phone books. The child should show an awareness of the looked-up addresses (**DNS** records) being copied (**cached**), and that more local records are used in preference to more authoritative records in most circumstances. *(E.g. In 6.6, know how a domain name is converted into an IP address.)*	The child can show awareness of some of the security implications of **DNS** lookups. The child can discuss some of the security implications of being given the wrong **IP address** when looking up a domain name, recognising that malware could compromise the integrity of this system on their computer and the importance of **network** managers maintaining the integrity of this system at internet service provider level. The child might also be aware of how seriously the security of root **DNS servers** is treated.	6.6	Communicator

Computing Progression Framework

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DOMAIN: DIGITAL LITERACY

UPPER KEY STAGE 2

Year 6

Sub-strand	Progression statement	What to look for guidance (Working towards expectations)	What to look for guidance (Meeting expectations)	What to look for guidance (Exceeding expectations)	Relevant *Switched on Computing* unit(s)	Switched on Computing badge
E-safety	C.6.1.1. Use technology safely, respectfully and responsibly.	C.6.7.2. The child can demonstrate that they can act responsibly when using the internet. The child can demonstrate that they act responsibly when using the internet. E.g. They should show responsibility when conducting web-based research; in using online project management tools; when creating and analysing surveys (including paying due regard to data protection legislation and ethical principles); in observing the terms and conditions of online tools; when creating digital content. *(E.g. In 6.1, conduct research safely. In 6.2, use online project management tools responsibly. In 6.3, create surveys, paying due regard to data protection and ethical guidance. In 6.4 and 6.5, use online tools responsibly. In 6.6, consider carefully how to protect personal information and act responsibly when creating digital content.)*	C.6.7.3. The child can show that they can think through the consequences of their actions when using digital technology. The child can discuss likely and potential consequences of their actions when using digital technology in a range of contexts. Contexts might include developing smartphone apps; using online project management tools; collecting information for market research; posting original content online. *(E.g. In 6.1, 6.4 and 6.5, consider the potential consequences of any apps they develop for themselves and their users. In 6.2, think through the consequences of how they use online project management tools. In 6.3, consider the consequences of collecting information in market research. In 6.6, consider the consequences of posting original content online.)*	C.6.7.4. The child can consider critically some of the wider implications of the use of digital technology. The child can discuss critically some wider implications of the use of digital technology, such as the ready availability of smartphones and connectivity; creating and distributing digital content; designing and developing apps. *(E.g. In 6.1, consider some of the wider implications of the ready availability of smartphones or tablets and their embedded sensors and network connections. In 6.4 and 6.5, consider the wider implications of app design and development. In 6.6, consider the wider implications of the ready availability of tools to create and distribute digital content.)*	6.1, 6.2, 6.3, 6.4, 6.5, 6.6	E-safety 2
	C.6.1.2. Recognise acceptable/unacceptable behaviour.	C.6.7.2.The child can discuss the consequences of particular behaviours when using digital technology. The child can discuss the likely or possible consequences of particular behaviours when using digital technology in a range of contexts. Contexts could include smartphone or tablet use; the use of online project management tools; online surveys and recording of interviews; creating and sharing digital content. *(E.g. In 6.1, 6.4 and 6.5, discuss the consequences of positive or negative smartphone and tablet use. In 6.2, discuss the consequences of positive or negative use of online project management tools. In 6.3, discuss the consequences of positive or negative use of surveys and recorded interviews. In 6.6, discuss the consequences of the positive or negative creation and sharing of digital content.)*	C.6.7.3. The child can identify principles underpinning acceptable use of digital technologies. The child can identify some principles underpinning acceptable behaviour when using technologies in a range of contexts. Contexts could include smartphone or tablet use; the use of online project management tools; online surveys and recording of interviews; creating and sharing digital content. *(E.g. In 6.1, 6.4 and 6.5, identify principles underpinning acceptable smartphone and tablet use. In 6.2, identify principles underpinning acceptable use of online project management tools. In 6.3, identify principles underpinning acceptable use of surveys and recorded interviews. In 6.6, identify principles underpinning acceptable creation and sharing of digital content.)*	C.6.7.4. The child can consider questions of ethics and morality in relation to digital technology. The child can consider some of the ethical or moral questions raised by the use of digital technology in a range of contexts. Contexts could include smartphone or tablet use; the use of online project management tools; online surveys and recording of interviews; creating and sharing digital content. *(E.g. In 6.1, 6.4 and 6.5, consider ethical and moral questions relating to smartphone and tablet use. In 6.2, consider ethical and moral questions relating to the use of online project management tools. In 6.3, consider ethical and moral questions relating to the use of surveys and recorded interviews. In 6.6, consider ethical and moral questions relating to the creation and sharing of digital content.)*	6.1, 6.2, 6.3, 6.4, 6.5, 6.6	E-safety 2
	C.6.1.3. Know a range of ways to report concerns and inappropriate behaviour.	Know how to report concerns and inappropriate behaviour in a range of contexts. Pupils should know how to report inappropriate behaviour when using technology in school: preferably this will be to their teacher, the **network** manager or another trusted adult. They should know how to report any concerns over, or inappropriate behaviour with, digital technology at home. Preferably this would be through discussion with their parents, with you or with another trusted adult. Pupils should also know how to report inappropriate behaviour to those running websites which they regularly use, and to ChildLine, CEOP or the police. *(E.g. Know to tell a teacher about any concerns or inappropriate behaviour in any units. Know that concerns in relation to the App Inventor or Touch Develop can be reported to the providers of these services. Know that they should talk to their parents about concerns and inappropriate behaviour outside school.)*	Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts. Pupils should know how to report inappropriate behaviour when using technology in school: preferably this will be to their teacher, the **network** manager or another trusted adult. They should know how to report any concerns over, or inappropriate behaviour with, digital technology at home. Preferably this would be through discussion with their parents, with you or with another trusted adult. Pupils should also know how to report inappropriate behaviour to those running websites which they regularly use, and to ChildLine, CEOP or the police. Pupils should know that illegal content or activities can be reported to CEOP or the police. *(E.g. Know to tell a teacher about any concerns or inappropriate behaviour in any units. Know that concerns in relation to the App Inventor or Touch Develop can be reported to the providers of these services. Know that concerns over the content of digital media can be reported to those hosting this content. Know that they should talk to their parents about concerns and inappropriate behaviour outside school.)*	Consider how they would determine the best way to address particular concerns or inappropriate behaviour. Pupils should think about how they would determine the best way to address particular concerns or inappropriate behaviour. They should take into account whether their concerns, or the behaviour, relates to home or to school, whether the person is another pupil, an adult they know or someone else, whether it might be illegal, how serious it is and whether others are likely to be affected.	6.1, 6.2, 6.3, 6.4, 6.5, 6.6	E-safety 2

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DOMAIN: DIGITAL LITERACY						
UPPER KEY STAGE 2						
Year 6						
Sub-strand	Progression statement	What to look for guidance (Working towards expectations)	What to look for guidance (Meeting expectations)	What to look for guidance (Exceeding expectations)	Relevant *Switched on Computing* unit(s)	Switched on Computing badge
E-safety	C.6.1.4. Be discerning in evaluating digital content.	C.6.5.2. The child can decide whether digital content is reliable and unbiased. The child can discuss whether particular content (such as advertising copy and product reviews) is reliable, and whether it has been written from a neutral point of view. They should be able to spot some examples of bias in digital content. *(E.g. In 6.1, consider how reliable or unbiased advertising copy and reviews for apps are.* *In 6.6, consider how reliable and unbiased their own copy on their app is.)*	C.6.5.3. The child can form an opinion about the effectiveness of digital content. Taking into account the intended audience and purpose of the content, the child can form a judgement as to, and provide reasons for, the extent to which they consider digital content to be effective. The content might be an app, media resources or marketing materials. *(E.g. In 6.1, form an opinion about the effectiveness of the apps they explore.* *In 6.4, form an opinion about how effective their own media resources and interface designs are.* *In 6.6, form an opinion about how effective their own marketing materials are.)*	C.6.5.4. The child can consider principles they can use to evaluate digital content. The child should identify some principles they could use to evaluate digital content, such as absence of bias, effective design, acknowledgement of sources, agreement with other sources, the reputation of the author, any indication that it has been checked or reviewed, absence of errors or logical inconsistencies. *(E.g. In 6.1, consider principles that could help in evaluating apps they explore.* *In 6.4, consider principles that could help in evaluating their own media resources and interface designs.* *In 6.6, consider principles that could help in evaluating their own marketing materials.)*	6.1, 6.4, 6.6	Searcher
	C.6.1.5. Understand the opportunities networks offer for communication and collaboration.	C.6.4.2. The child can use online tools to plan a collaborative project. The child can make use of an online tool to plan a collaborative project (such as developing an app). *(E.g. In 6.2, plan the app development project using online tools.)*	C.6.4.3. The child can use online tools to plan and carry out a collaborative project. The child can make use of an online tool to plan and carry out a collaborative project (such as developing an app). *(E.g. In 6.2, plan the app development project using online tools.* *In 6.3 - 6.6, use these tools to keep track of progress and share ideas.)*	C.6.4.4. The child can use online tools to plan, carry out and evaluate a collaborative project. The child can make use of an online tool to plan, carry out and then evaluate a collaborative project (such as developing an app). *(E.g. In 6.2, plan the app development project using online tools.* *In 6.3 - 6.6, use these tools to keep track of progress and share ideas.* *Use the tools to support an evaluation of their project in 6.6.)*	6.2, 6.3, 6.4, 6.5, 6.6	Communicator

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DOMAIN: INFORMATION TECHNOLOGY						
UPPER KEY STAGE 2						
Year 6						
Sub-strand	**Progression statement**	**What to look for guidance (Working towards expectations)**	**What to look for guidance (Meeting expectations)**	**What to look for guidance (Exceeding expectations)**	**Relevant *Switched on Computing* unit(s)**	**Switched on Computing badge**
Creating content	C.6.1.1. Select, use and combine a variety of software (including internet services) on a range of digital devices.	The child can use and combine a range of **programs** on multiple devices. The child can use multiple **digital devices** (such as tablets and laptops or digital cameras and laptops) to achieve particular goals. The devices might include web **servers,** allowing them to use cloud-based applications. E.g. They might use local media to make a presentation using cloud-based presentation **software**, such as Google Slides, local media, cloud-based programming environments and a connected tablet or smartphone to help in developing and testing an app; a video camera, laptop-based editing **software** and online video streaming to create a marketing video for an app. *(E.g. In 6.1, use a range of media to create an effective pitch presentation.* *In 6.2, use online project management software.* *In 6.3, combine Google Forms, Google Sheets and Google Slides.* *In 6.5, use an online development environment, local media and a smartphone, tablet or emulator.* *In 6.6, use a range of media packages to market their app.)*	The child can select, use and combine a range of **programs** on multiple devices. The child can choose for themselves from a range of available **programs** on laptops, tablets or cloud-based services to achieve particular goals. E.g. They might choose which image editors and presentation **software** to use when making a presentation; which image and audio editors to use when creating media content for an app; which DTP, video editor and website tools to use when developing marking materials for an app. *(E.g. In 6.1, use a range of media to create an effective pitch presentation in software of their own choice.* *In 6.6, use a range of media packages of their own choice to market their app.)*	The child can show some understanding of the differences between, and relative merits of, different applications, **operating systems** and **hardware**. The child can discuss the differences between smartphones, tablets, laptops and **servers**. They should be able to compare and contrast different applications (e.g. Word and Google Docs). They should be able to compare and contrast **operating systems** they have used (e.g. Windows and iOS or Android). *(E.g. In 6.1 and 6.6, give explanations for why they chose particular packages to develop content.* *In 6.1, 6.4 and 6.5, compare the app development environment with Scratch, and the mobile operating system with the desktop operating system.)*	6.1, 6.2, 6.3, 6.4, 6.5, 6.6	Content creator 2
	C.6.1.2. Design and create a range of programs, systems and content that accomplish given goals.	The child can create systems in response to a given goal. The child can plan and design a system with multiple, interrelated components with a given goal in mind. E.g. They could develop a smartphone app, taking into account **input**, **output** and connectivity, the **operating system**, the **algorithms**, code and user **interface** of their own **program**. *(E.g. In 6.4 and 6.5, create a smartphone or tablet app for an agreed purpose.)*	The child can design and create systems in response to a given goal. The child can plan, design and implement a system with multiple, interrelated components with a given goal in mind. E.g. They could develop a smartphone app, taking into account **input**, **output** and connectivity, the **operating system**, the **algorithms**, code and user **interface** of their own **program**. *(E.g. In 6.1, 6.4, 6.5, design and build a smartphone or tablet app for an agreed purpose.)*	The child can design and create systems in response to a given goal, paying attention to the needs of a known audience. The child can plan, design and implement a system with multiple, interrelated components with a given goal and a known audience in mind. E.g. They could develop a smartphone app, taking into account **input**, **output** and connectivity, the **operating system**, the **algorithms**, code and user **interface** of their own **program**. They should evaluate how effectively their system meets the specified goal and the needs of their audience. *(E.g. In 6.1, 6.3, 6.4, 6.5, design and build a smartphone or tablet app for an agreed purpose, taking into account the needs of a known audience.)*	6.1, 6.3, 6.4, 6.5	Content creator 2
	C.6.1.3. Collecting, analysing, evaluating and presenting data and information.	The child can analyse **data**. The child can analyse numerical **data** (typically using a spreadsheet) perhaps producing summary statistics, looking for relationships, trends and exceptions. E.g. They could conduct market research for a smartphone app and analyse the data they obtain. *(E.g. In 6.3, conduct market research into their planned app, analysing the data obtained.)*	The child can analyse and evaluate **data**. The child can evaluate the quality of numerical **data**, deciding the extent to which it is affected by systematic or random errors. They should analyse their data, perhaps producing summary statistics, looking for relationships, trends and exceptions. E.g. They could conduct market research for a smartphone app, and analyse and evaluate the data they obtain. *(E.g. In 6.3, conduct market research into their planned app, evaluating and analysing the data obtained.)*	The child can analyse, evaluate and interpret **data**, being aware of the limitations of any conclusions drawn. The child can evaluate the quality of numerical data, deciding the extent to which it is affected by systematic or random errors. They should analyse their data, perhaps producing summary statistics, looking for relationships, trends and exceptions. They should provide an interpretation of their data and discuss the limitations of their findings. E.g. They could conduct market research for a smartphone app, and evaluate, analyse and interpret the data they obtain. *(E.g. In 6.3, conduct market research into their planned app, analysing, evaluating and interpreting the data obtained.)*	6.3	Content creator 2

Computing Progression Framework

Numbering system

Subject.Year.Strand.Statement

Text shown in **bold** is a key term, and is defined in the Glossary.

DOMAIN: INFORMATION TECHNOLOGY						
UPPER KEY STAGE 2						
Year 6						
Sub-strand	**Progression statement**	**What to look for guidance (Working towards expectations)**	**What to look for guidance (Meeting expectations)**	**What to look for guidance (Exceeding expectations)**	**Relevant *Switched on Computing* unit(s)**	**Switched on Computing badge**
Searching	C.6.2.1. Use search technologies effectively.	The child can appreciate that a range of different search technologies are available. The child can show that they are aware of a range of different search technologies, including alternatives to Google (such as Bing or Yahoo) and site-specific search engines (such as those for the App Store or Google Play). E.g. They could name several search engines that could be used when researching available smartphone apps for a particular purpose. *(E.g. In 6.1, show awareness that a number of search engines can be used to find out about smartphone or tablet apps.)*	The child can make use of a range of search engines appropriate to finding information that is required. The child can show that they can use effectively a range of different search technologies, including alternatives to Google (such as Bing or Yahoo) and site-specific search engines (such as those for the App Store or Google Play). E.g. They could demonstrate how they would use a range of search engines when researching available smartphone apps for a particular purpose. *(E.g. In 6.1, use a number of search engines to find out about smartphone or tablet apps.)*	The child can appreciate that much information cannot easily be found using search engines. The child should be aware that not all questions can be answered using search engines. They should be able to give examples of 'ungoogleable' questions and consider some other ways in which these could be answered. *(E.g. In 6.1 and 6.3, recognise that some questions are 'ungoogleable' and other approaches to answering them are required.)*	6.1, 6.3	Searcher
	C.6.2.2. Appreciate how search results are selected and ranked.	The child can appreciate that search engines rank results based on in-bound links to a page. The child can demonstrate some awareness of the Page Rank **algorithm**, explaining that the ranking of a page is determined largely on the basis of the links pointing to that page in the engine's **cached** copy of the **web**. *(E.g. In developing their website in 6.6, recognise how its search rank can be improved by having links to it from other websites.)*	The child can appreciate that search engines rank pages based on the number and quality of in-bound links. The child can demonstrate some awareness of the Page Rank **algorithm**, explaining that the quality of a page is determined largely on the basis of the number and quality of links pointing to that page in the engine's **cached** copy of the **web**, and that quality is itself determined recursively through Page Rank. *(E.g. In developing their website in 6.6, recognise how its search rank can be improved by having links to it from other high-ranking websites.)*	The child can appreciate that search engines now use many additional 'signals' to provide more relevant results. The child should be aware of the Page Rank **algorithm** used for ranking search results, but should also be able to discuss other signals used in ranking **algorithms**, such as bounce back rates, accessibility indicators, localisation and personalisation of search results. *(E.g. In 6.1 and 6.6, recognise that search results may be personalised using many other factors.)*	6.1, 6.6	Searcher