Key Stage 2 Computing National Curriculum coverage

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Please complete the pre and end of unit tasks for each unit and complete the assessment tracker at the end of each lesson. This will inform your end of year grades

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Online Safety	Computing Systems and Networks	Data Handling	Programming	Creating Media
Skills and Knowledge covered through the units over the year				
Year 3 lessons 1- 5 Kapow, lesson 6 Project Evolve •To know that not everything on the internet is true: people share facts, beliefs and opinions online. •To understand that the internet can affect your moods and feelings. •To know that privacy settings limit who can access your important personal information Information, such as your name, age, gender etc. •To know what social media is and that age restrictions apply.	Year 4 lesson 1 –5 Kapow, lesson 6 Project Evolve •To understand some of the methods used to encourage people to buy things online. •To understand that technology can be designed to act like or impersonate living things. •To understand that technology can be a distraction and identify when someone might need to limit the amount of time spent using technology. •To understand what behaviours are appropriate in order to stay safe and be respectful online.	Year 5 lesson 1-5 Kapow lesson 6 Project Evolve •To know different ways we can communicate online. •To understand how online information can be used to form judgements. •To understand some ways to deal with online bullying. •To know that apps require permission to access private information and that you can alter the permissions. • To know where I can go for support if I am being bullied online or feel that my health is being affected by time online.	Year 6 Lessons 1-6 Kapow •To know that a 'digital footprint' means the information that exists on the internet as a result of a person's online activity. •To know what steps are required to capture bullying content as evidence •To understand that it is important to manage personal passwords effectively. •To understand what it means to have a positive online reputation. •To know some common online scams.	

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•To know what a tablet is and how it is different from a laptop/desktop computer. •To understand what a network is and how a school network might be organised. •To know how the internet uses networks to share files. •To know what a packet is and why it is important for website data transfer. •To know the roles that inputs and outputs play on computers. •To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together.	•To understand that software can be used collaboratively online to work as a team. •To know that you can use images, text, transitions and animation in presentation	•To know how search engines work. •To understand that anyone can create a website and therefore we should take steps to check the validity of websites. •To understand what copyright is. •To know the difference between ROM and RAM.	•To understand the importance of having a secure password and what "brute force hacking" is •To know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2.
	•To know that computers can use different forms of input to sense the world around them so that they can record and respond to data. This is called 'sensor data'. •To know that a weather machine is an automated machine that responds to sensor data. •To understand that weather forecasters use specific language, expression and pre-prepared scripts to help create weather forecast films.	•To know that Mars Rover is a motor vehicle that collects data from space by taking photos and examining samples of rock. •To know what numbers using binary code look like and be able to identify how messages can be sent in this format. To know what simple operations can be used to calculate bit patterns	•To know that data contained within barcodes and QR codes can be used by computers. •To know that Radio Frequency Identification (RFID) is a more private way of transmitting data. •To know that data is often encrypted so that even if it is stolen it is not useful to the thief.

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•To know that Scratch is a programming language and some of its basic functions. •To understand how to use loops to improve programming. •To understand how decomposition is used in programming. •To understand that you can remix and adapt existing code.	•To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch. •To know what a conditional statement is in programming. •To understand that pattern recognition means identifying patterns to help them work out how the code works. •To understand that algorithms can be used for a number of purposes e.g. animation, games design etc.	•To know that a soundtrack is music for a film/video and that one way of composing these is on programming software. •To understand that using loops can make the process of writing music simpler and more effective.	•To know that there are text-based programming languages such as Logo and Python. •To know that nested loops are loops inside of loops.
•To know that different types of camera shots can make my photos or videos look more effective. •To know that I can edit photos and videos using film editing software. •To understand that I can add transitions and text to my video.		•To understand that stop motion animation is an animation filmed one frame at a time using models, and with tiny changes between each photograph. •To know that decomposition of an idea is important when creating stop-motion animations. •To know that editing is an important feature of making and improving a stop motion animation.	
Recap activity https://www.educaplay.com/learning-resources/15644498-year_2_online_safety_recap_activity.html **Managing Online Information**	Recap activity https://www.educaplay.com/learning-resources/15642863-online_safety_recap_year_4.html **Managing Online Information**	Recap activity https://www.educaplay.com/learning-resources/15635993-online_safety_recap_year_5.html **Privacy and Security, Health, wellbeing and lifestyle**	Recap activity https://www.educaplay.com/learning-resources/15642943-year_6_online_safety_recap.html **Self Image and identity**

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Lesson 1: Beliefs, opinions and facts on the internet **Objective: To understand how the internet can be used to share beliefs, opinions and facts** ***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • I can understand that not all information on the internet is true • I can explain the terms 'belief', 'opinion' and 'fact' • I can use key phrases within a search engine to produce accurate results	**Lesson 1: What happens when I search online?** **Objective: To describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy** ***National Curriculum*** • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* Skills: • To describe how to search for information on search engines, social media and image and video sites • to make judgments about the accuracy of the information I am presented with **Key Vocab:** search results, trustworthy, reliable, advertisements, sponsored, snippets, accuracy Adaptive teaching Pupils needing extra support: Could focus on only one technology, such as a search engine. **Pupils working at greater depth:** Could use a range of search engines and explain why they may offer different search results.	**Lesson 1: Online protection** **Objective: To understand how apps can access our personal information and how to alter the permissions.** *National Curriculum* • *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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • To explain the importance of keeping passwords safe. • To recognise that passwords are needed for access to apps. • To explore how apps require permission to access private information. • To identify how to alter the permissions apps require. **Key Vocab:** app, application, in-app, purchase, password, permission, personal information, strong password Adaptive teaching	**Lesson 1: Life Online** **Objective: To describe issues online that give us negative feelings and no ways to get help.** ***National Curriculum*** • *use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* Skills: • To disclose that careers that could make someone feel sad, worried, uncomfortable or frightened. • To give examples of how to get help online and offline. • To explain the importance of asking for help. **Key Vocab:** Online, report, block, privacy settings. Adaptive teaching **Pupils needing extra support:** Could be given the link: BBC Own It - Has something scared you? to rewatch the video and support them with their posters. **Pupils working at greater depth:**

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Key Vocab: fact, opinion, belief, internet, search engine, accuracy, reliability Adaptive teaching **Pupils needing extra support:** Could create a quiz based on just fact and opinion. **Pupils working at greater depth:** Should be challenged to cross-check their sources in multiple places. **Pupils with secure understanding indicated by**: knowing what fake news is; differentiating between fact, opinion and belief. **Pupils working at greater depth indicated by**: recognising that not everything we read online is true; knowing how to look for whether a source of information is reliable.	**Pupils with secure understanding indicated by:** describing how to search over multiple platforms and; explaining the accuracy of some of the results presented. **Pupils working at greater depth indicated by**: describing how to search effectively over multiple technologies; explaining, with reasons, the accuracy of the results shown.	**Pupils needing extra support:** Could create a simple poster that illustrates the popular apps that were mentioned and listed in the Main event, using a device to find the app icons and drawing them on their poster. **Pupils working at a greater depth:** Could develop a differences and similarities comparison of app permissions found between all three companies. **Pupils with secure understanding indicated by:** understanding that passwords need to be strong and that apps require some form of password. **Pupils working at greater depth indicated by:** identifying that strong passwords need to be of a certain length and include various characters; understanding what app permissions are and how these settings protect private information.	Could create a mini-blog/vlog that discusses the top tips on how to deal with online issues that may upset people. **Pupils with secure understanding indicated by:** discussing a range of online issues that can leave people feeling sad, frightened, worried or uncomfortable; describing ways to get help. **Pupils working at greater depth indicated by:** discussing negative feelings associated with issues online; describing how to get online and offline help and the importance of persisting until people get the help they need.
Recap activity https://www.educaplay.com/learning-resources/15639159-algorithms_and_debugging_recap.html **CORE UNIT QUESTION: Computing Systems and Networks, Networks and the Internet** **Lesson1: What is a network?** **Objective: To recognise what a network is**	Recap activity https://www.educaplay.com/learning-resources/15642824-computer_parts.html **CORE UNIT QUESTION: Computing Systems and Networks, Collaborative Learning** **Lesson 1: Teamwork** **Objective: To understand that software can be used to work online collaboratively**	Recap activity https://www.educaplay.com/learning-resources/15610682-spreadsheet.html **CORE UNIT QUESTION: Computing systems and networks: Search Engines** **Lesson 1: Searching Basics** **Objective: To understand what a search engine is and how to use it**	Recap activity https://www.educaplay.com/learning-resources/15642970-data_handling_recap_year_6.html **CORE UNIT QUESTION Computing Systems and Networks Bletchley Park and the history of computing**

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National Curriculum • *Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information'* Skills: • To explain the purpose of a network. • To name the key parts of a network. • To explain the difference between a wired and wireless connection. • To identify which components can be connected. **Key Vocab:** network, wired, wireless, Wi-Fi, device, internet, component, laptop, tablet, desktop, printer, photocopier, server, network switch, wireless access points, network,map, router Adaptive teaching **Pupils needing extra support**	***National Curriculum*** • *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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* • *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* Skills: • To understand that I can work with a partner without being in the same room • To be able to contribute to teamwork sensibly and responsibly • To recognise what behaviour is appropriate when collaborating online **Key Vocab:** collaboration, online, teamwork, document Adaptive teaching **Pupils needing extra support**	***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content* • *Select, use and combine a variety of software (including internet services) to create content that accomplishes given goals, including collecting data and information* Skills: • to explain what a search engine is? • To use a search engine to navigate the web. • To suggest keywords for searching. **Key Vocab:** website, search engine, data leak, privacy, network Adaptive teaching **Pupils needing extra support** Could have help from a peer to open different search engines in separate tabs; could be challenged to find a single website and then look for the information on that page during the factual searching activity. **Pupils working at greater depth** Should focus on their searching efficiency by finding the answers with the least	**Lesson 1: Secret Codes** **Objective: To understand that there are lots of different types of secret codes** ***National Curriculum*** ***S***olve problems by decomposing them into smaller parts • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs' Skills: • To understand why codes might be valuable. • To identify some common secret codes. • To decipher some secret codes. • To write a message using a secret code. **Key Vocab:** acrostic code, Caesar cipher, cipher, data shift cipher, nth letter cipher, pigpen cipher, scrambled, secret Adaptive teaching **Pupils needing extra support** Should use the clues on the Activity: Codebreaker worksheet to help them break the codes; could be shown the Teacher video: Secret codes; could be given clues from the answer sheet.

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Should complete the Activity: School network map: support on the network safari. **Pupils working at greater depth** Should write the purpose of each device on the Activity: School network map and include if it is wireless or wired. **Pupils with secure understanding indicated by**: recognising the purpose of a network and that it is two or more devices connected; explaining the difference between wired and wireless connections; identifying key components around the school which make up the school's network. **Pupils working at greater depth indicated by**: explaining why networks are used and what they are used for; linking their learning to the wider world. **Lesson 2: How a website works** **Objective: To demonstrate how a website works** ***National Curriculum*** • *Understand computer networks, including the internet; how they can provide multiple services, such as the world wide web, and the opportunities they offer for communication and collaboration.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and*	Could have help rephrasing a statement to make it quicker and easier to type. **Pupils working at greater depth** Should be encouraged to type longer and more detailed sentences for either rules or lines in the story. **Pupils with secure understanding indicated by**: understanding the need to be thoughtful when working on a collaborative document. **Pupils working at greater depth indicated by**: suggesting thoughtful and considerate ways to make collaborative learning more successful. **Lesson 2: Microsoft Forms 1** **Objective: To understand how to create a digital survey** ***National Curriculum*** • *Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information*	number of 'clicks' and the least amount of typing. **Pupils with secure understanding indicated by:** explaining what a search engine is; suggesting several search engines to use; explaining how to use them to find websites and information. **Pupils working at greater depth indicated by:** understanding which words do and do not need to be included in a search query. **Lesson 2: Inaccurate information** **Objective: To be aware that everything online is true** ***National curriculum*** • ***Use search technologies effectively and be discerning in evaluating digital content*** • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact'* <u>Skills:</u> • I can recognise that not everything online is true. • I can understand anyone can create a website. • I can suggest ways of checking validity.	**Pupils working at greater depth** Should make connections between the different codes they have looked at. **Pupils with secure understanding indicated by:** explaining that codes can be used for several different reasons; decoding messages. **Pupils working at greater depth indicated by:** exploring and using various codes; making connections between the codes they have looked at and binary codes transmitted by computers. **Lesson 2: Brute Force Hacking** **Objective: To understand the importance of having a second password** ***National Curriculum*** • *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*

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create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Skills: • To recognise that the internet is a network. • To list the parts of a network needed for a website to work. • To recognise the role of the cloud **Key Vocab:** website, computer, connection, file, video, YouTube, screen, web server, data, text map, phone lines, wires, copper, electrical pulse, fibre, cables, wireless connection, radio waves Adaptive teaching **For pupils needing extra support** Should use the Activity: How a website works: support to draw their visual representation. **Pupils working at greater depth** Could create their own server requests; should write a step-by-step explanation of a website's journey through the internet. **Pupils with secure understanding indicated by:** understanding the role of the server in a network when requesting a website; identifying parts of a website's journey to reach your computer.	• *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact'* Skills: • To understand how to create a Microsoft Form • To understand why a survey might be useful • To plan a survey **Key Vocab:** survey, share, title, multiple choice, rating Adaptive teaching **Pupils needing extra support** Could ask children to prepare three questions rather than five; could provide examples (e.g. How do you usually get to school?; How old are you?; What is your favourite sport?). **Pupils working at greater depth** Should use various question types; should understand what information that type of question will provide. **Pupils with secure understanding indicated by:** planning a survey; using a range of question types that will provide different types of answers, e.g. text, multiple-choice or numerical values. **Pupils working at greater depth indicated by:** exploring various question types that provide more in-depth data; writing detailed questions	**Key Vocab:** Real, fake news, deceive, inaccurate information, Correct Adaptive teaching **Pupils needing extra support** Should answer the blue questions (e.g. John Cabot, Christopher Columbus or Sir Francis Drake) on the online differentiated reading activity, see the link: All about explorers; could need to see the success criteria during the main activity to refer back to. **Pupils working at greater depth** Should model good practices for search validity as soon as they click on a website. **Pupils with secure understanding indicated by:** suggesting that things online are not always true; recognising what to check for when accessing if information is accurate. **Pupils working at greater depth** indicated by: skimming pages to identify validity straight away. **Lesson 3 : Web Quest** **Objective: To search effectively** ***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content*	• *Select, use and combine a variety of software […] to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information'* Skills: • To know what is meant by brute force hacking. • To understand why it is important to have a secure password. • To understand his password is password is more secure than a short one? **Key Vocab:** brute force hacking, chip and PIN, combination, password, secure, trial and error Adaptive teaching **Pupils needing extra support** Could use the Resource: Four-digit brute force emulator to see the finished code but ask them to explain each of the changes made. **Pupils working at greater depth** Should be encouraged to work independently; could be challenged to

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Pupils working at greater depth indicated by: acknowledging that a website is a sent file; explaining the role of each part of the network in the journey of a website including the role of the cloud.

Lesson 3: What is a packet data?
Objective: To identify the role of packet data

National Curriculum

- *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'*

Skills:

- To recognise that data is transferred across the internet.
- To explain that routers connect to send information.
- To demonstrate that data can be too big to send whole.

Key Vocab: packet data, route, router, server

Adaptive teaching

Pupils needing extra support
Should use Activity: Packet puzzle: support.

Pupils working at greater depth

with logical answer types, e.g. using short paragraphs when necessary.

Lesson 3: Microsoft Forms 2
Objective: To create and share a Microsoft Form

National Curriculum

- *Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration*
- *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information*
- *Use technology safely, respectfully and responsibly'*

Skills:

- to create a Microsoft Form
- to share a form with my class

Key Vocab: survey, share, multiple choice, rating, collaborate

Adaptive teaching

Pupils needing extra support
Could ask children to prepare three questions rather than five; could provide examples (e.g.

- Select, use and combine a variety of software (including internet services) to create content that accomplish given goals, including collecting data and information'

Skills:

- To understand the importance of keywords. To use the acronym TASK
- To use search skills to answer focused questions.
- To use my search skills to answer focused questions.

Key Vocab: Keywords, TASK.

Adaptive teaching

Pupils needing extra support
Could have a reduced number of questions to research.

Pupils working at greater depth
Could talk through the process with an adult or peer while they are working.

Pupils with secure understanding indicated by: explaining why keywords are important; recalling what TASK stands for; using strategies to search effectively.

Pupils working at greater depth indicated by: using searching skills effectively; explaining why following these strategies helps to find relevant information.

change the code so that it only searches for digits less than five and explain how this affects the ease with which the wizard can crack the code.

Pupils with secure understanding indicated by: explaining how to ensure a password is secure; understanding what a brute force attack is.

Pupils working at greater depth indicated by: showing a clear understanding of how brute force attacks work; explaining how they can be avoided.

Lesson 3: Computers of the past
Objective: To recognise the importance of the history of computers and create a well-researched presentation.
National Curriculum

- *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content*
- *Select, use and combine a variety of software [Including internet services] to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information'*
- *Use technology safely, respectfully and responsibly; recognise*

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Could write a step-by-step explanation of how packets work in the transmission of data and relate this to the activity. **Pupils with secure understanding indicated by:** identifying the process by which data is transmitted over the internet; recognising that routers connect to send information; understanding that data is broken into packets. **Pupils working at greater depth indicated by:** explaining how data is transferred and the role of the router within this process; identifying why data is broken into packets.	How do you usually get to school?; How old are you?; What is your favourite sport?). **Pupils working at greater depth** Should use various question types; should understand what information that type of question will provide. **Pupils with secure understanding indicated by:** creating a survey in Microsoft Forms; using a range of question types that will provide different types of answers, e.g. text, multiple-choice or numerical values. **Pupils working at greater depth indicated by:** exploring various question types that provide more in-depth data; writing detailed questions with logical answer types, e.g. using short paragraphs when necessary **Lesson 4: Shared Spreadsheet** **Objective: To analyse data** ***National Curriculum*** • *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* • *Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities*	**Lesson 4: Information posters** **Objective: To create an informative poster.** ***National Curriculum.*** • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content* • *Select, use and combine a variety of software (including internet services) to create content that accomplish given goals, including collecting data and information'* **Skills:** • To include a title and at least five facts. • To choose appropriate pictures, colours and designs. • To consider fair use. • To credit people for information, images and videos used **Key Vocab:** Copyright, fair, credit, inappropriate. Adaptive teaching **Pupils needing extra support**	*acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact'* Skills: • To explain the role of Bletchley Park during World War 2. • To identify and describe the achievements of key figures in computing history. • To recognise and explain the evolution of computers and their impact on modern life • To effectively share my research findings with a partner and the class. **Key Vocab:** discovery, invention, technological advancement Adaptive teaching **Pupils needing extra support** Could present their information in a Microsoft Word or Google document; should work collaboratively to decide on the key facts. **Pupils working at greater depth**

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	they offer for communication and collaboration' Skills: • To export data to a spreadsheet • to highlight data using conditional formatting • to use a spreadsheet to calculate averages and sums of numbers **Key Vocab:** spreadsheet, data, average, numerical data Adaptive teaching **For pupils needing extra support** Could use the Resource: Conditional formatting for additional support. **Pupils working at greater depth** Should be encouraged to explore creating graphs using their data; should tinker with the data they have collected to see what they can find out. **Pupils with secure understanding indicated by**: exporting data to a spreadsheet; highlighting data using conditional formatting; calculating averages and sums of numbers. **Pupils working at greater depth indicated by:** exploring the power of spreadsheets in more depth; creating graphs.	Could focus on creating their own content (e.g. adding font/shapes). **Pupils working at greater depth** Should explain how they have considered copyright and fair use. **Pupils with secure understanding indicated by**: recognising the terms copyright and 'air use; combining text and images in a poster. **Pupils working at greater depth indicated by:** explaining how they have adhered to copyright (e.g. written in their own words); explaining their colour, font and size choices.	Should choose how to present their findings and include opinions about each computer or computing hero's impact on the world; should be encouraged to add hyperlinks to further information; could research two topics and persuade the audience that one was more influential than the other.. **Pupils with secure understanding indicated by:** understanding some of the key moments in the history of computing; recognising how the earliest computers have evolved into modern computers; creating a well-designed presentation with relevant information about their topic. **Pupils working at greater depth indicated by: presenting information in an interesting way; expressing how and why a topic changed the face of computing; using persuasive text in presentations and rewriting information in their own words.**
Online Relationships **Lesson 2: Who Should I ask?**	Managing Online Skills Information **Lesson 2: How do companies encourage us to buy online?**	**Online Relationships, Online Bullying** **Lesson 2: Online Communication**	**Online Relationships** **Lesson 2: Sharing Online**

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Objective: To explain what should be done before sharing information online ***National Curriculum*** • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* <u>Skills:</u> • to recognise why there is a need to ask for permission. • To explain who you need to ask permission from before sharing content online. • To identify how others may feel if they share things online without their permission. **Key Vocab:** content, permission, share Adaptive teaching **Pupils needing extra support:** Could use the Activity: Asking permission: support version to discuss why it is important to ask permission before sharing content; could use emotion cards or emojis to support understanding of how it might make people feel if their content is shared without their permission. **Pupils working at greater depth:** Could create a diagram to represent how information can easily be shared and spread online; could use the diagram to explain this to the class.	**Objective: To describe some of the methods used to encourage people to buy things online** ***National Curriculum*** • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* <u>Skills:</u> • To describe some methods used by companies such as 'in-app purchases and 'pop-ups' • To recognise some of these when they appear • To think about ways to avoid purchases **Key Vocab**: ad, in-app purchase, influencer, recommendations Adaptive teaching **Pupils needing extra support:** Could use the slides from the Presentation: How do companies encourage us to buy online? for reference. **Pupils working at greater depth:** Could suggest what the children could have done in the situations; could create their own situation to share and discuss with the class at the end of the lesson.	**Objective: To be aware of the positive and negative aspects of online communication** ***National Curriculum*** • *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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* <u>Skills:</u> • To identify different types of online communication. • To recognise the positive and negative forms of online communication. **Key Vocab:** communication, emojis, meme, negative contribution, online communication, positive, contribution, trusted adult Adaptive teaching **Pupils needing extra support:** Could use emojis, such as sad or happy, to express the intention of the specific scenario. **Pupils working at a greater depth:**	**Objective: To think about the impact and consequences of sharing online.** ***National Curriculum*** • *use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* <u>Skills:</u> • To describe how to feel kind and show respect for others online. • To know the risk involved with sharing things online, even if it is sent privately. **Key Vocab:** Consent, private, settings, screenshot, respect, inappropriate.selfie Adaptive teaching **Pupils needing extra support:** Could use the Activity: Impacts of sharing online: support version and write simple words to describe the person's emotions. **Pupils working at greater depth:** Should write complete scenarios to focus on and develop their understanding (empathy) of the different emotions a person can go through. **Pupils with secure understanding indicated by:** explaining how sharing online can have

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Pupils with secure understanding indicated by: understanding they need to ask permission before sharing content online; explaining how it might make others feel if they have not asked permission or have shared information about someone else when asked not to. **Pupils working at greater depth indicated by:** thinking critically about the content they share about themselves and others and how it makes them feel; explaining why they should seek permission of the person the content is about or ask their own guardian if it is about themselves.	**Pupils with secure understanding indicated by:** describing some of the methods used to persuade people to buy online. **Pupils working at greater depth indicated by:** describing a range of methods used to persuade people to buy online; recognising the use of these techniques over multiple platforms.	Should develop their own negative scenarios that they can turn into positives to gain further insight into the differences and how a phrase can be turned from negative to positive. **Pupils with secure understanding indicated by:** recognising some of the different types of online communication; identifying who to go to if they need help with any communication matters online. **Pupils working at greater depth indicated by:** recognising all forms of online communication; identifying positive and negative forms of communication and knowing how to deal with those that cause online abuse.	both positive and negative impacts; understanding the need to seek consent from others before sharing material online; describing how content can still be shared online even if it is set to private. **Pupils working at greater depth indicated by:** explaining, with examples, how sharing online can have both positive and negative impacts; discussing how content shared that was set to private can make someone feel and how they can get help if this happens.
Recap activity - https://www.educaplay.com/learning-resources/15639241-what_can_we_remember_about_the_iss.html **CORE UNIT QUESTION Journey Inside a Computer** **Lesson 1: Inputs and Outputs** **Objective: To recognise basic inputs and outputs.** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical*	Recap activity – https://www.educaplay.com/learning-resources/15623919-network_hardware.html **CORE UNIT QUESTION Further Coding with Scratch** **Lesson 1: Exploring variables and conditions** **Objective: To explore how variables and if statements are used in Scratch by identifying their purpose in a game.** ***National Curriculum***	Recap activity – https://www.educaplay.com/learning-resources/15643387-creating_media.html **CORE UNIT QUESTION : Data Handling - Mars Rover** **Lesson 1: Mars Rover** **Objective: To identify how and why data is collected from space.** ***National Curriculum*** • *Understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the*	Recap activity- https://www.educaplay.com/learning-resources/15643038-computer_parts.html **CORE UNIT QUESTION : Data Handling - Big Data 1** **Lesson 1: Barcodes** **Objective: To understand how bar codes and QR codes work** ***National Curriculum*** • *Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the*

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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.* • *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.* Skills: • To identify some inputs and outputs • To recall that a computer follows instructions • To explain what the computer is doing **Key Vocab:** computer, data, computer program, input, keyboard, monitor, mouse, output Adaptive teaching **Pupils needing extra support** Should use the Resource: Inputs and outputs. Could explore plugging/unplugging the different peripherals. **Pupils working at greater depth** Should include more detail on their posters about what happens when a key is pressed or the mouse is clicked e.g What information is sent? Where is it received? Could also consider other forms of input and output.	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into *smaller parts* *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* Skills: • I can find and explain how a variable is used in a Scratch project. • I can identify an if statement in the code. • I can describe what happens when a condition is true. **Key Vocab:** condition, decomposition, if statement, sprite, variable Adaptive teaching **Pupils needing extra support:** Should complete the *Activity: Catch the doughnut: support version* to structure 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.* Skills: • To recall the meanings of data and transmit. • To identify a type of data that the Mars Rover may transmit back to Earth. • To identify the challenges of transmitting data over large distances. • To explain why data is being collected from the Mars Rover. **Key Vocab:** Data, Data transmission, Discovery, distance. Mars Rover, moon, planet, scientist, signal. Adaptive teaching **Pupils needing extra support** Could draw a diagram of Earth and Mars, annotating the distance between them. **Pupils working at greater depth** Should also research how long it takes to send a signal to Mars; could research the cost of the Curiosity mission and relate it to the value of another item to reinforce the	*opportunities they offer for communication and collaboration* Skills: • To identify and collect data from QR codes. • To recall how the data contained within barcodes and QR codes can be used by computers. **Key Vocab:** Barcode, QR Code, QR Scanner, Adaptive teaching **Pupils needing extra support** Could use the Resource: QR code clues (support) to help them locate the QR codes. **Pupils working at greater depth** Could be challenged to create a QR code treasure hunt for their classmates using the online QR code generator. **Pupils with secure understanding indicated by:** understanding why barcodes and QR codes were created; following a QR code treasure trail. **Pupils working at greater depth indicated by:** discussing how QR codes could replace manual registers in schools. **Lesson 2: RFID** **Objective: To recognise how RFID is used** ***National Curriculum***

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Pupils with secure understanding indicated by: suggesting what inputs and outputs are and recognising that a computer sends and receives instructions. **Pupils working at greater depth indicated by:** explaining the instructions that are being sent and received by a computer and identifying less obvious inputs and outputs on devices. **Lesson 2 : Building a paper laptop** **Objective: To identify the components inside a laptop.** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.* • *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.* Skills: • To recognise a laptop's inputs and outputs. • To recall that a laptop is made up of many parts. • To explain the purpose of some parts. **Key Vocab:** CPU, GPU, input, output, RAM, ROM Adaptive teaching	process of understanding the blocks; could verbally explain each block's purpose. **Pupils working at greater depth:** Should explain how the variables and if statements work together to control the game; could consider where variables and if statements are used in real life (e.g. traffic lights, online quizzes, etc.). **Pupils with secure understanding indicated by:** understanding what a variable is; recognising which part of the code is keeping track of progress in the game; explaining why the number on the screen goes up or down; understanding that something must be checked before a change happens; making links between what they see happening on screen and what the code is doing in the background. **Pupils working at greater depth indicated by:** describing how the computer makes decisions based on conditions; predicting what would happen if parts of the code were removed or changed; suggesting how similar logic could be used in a different game; reasoning clearly about how input leads to changes in the game's outcome. **Lesson 2: Planning a game** **Objective: To create a variable to keep a score**	financial value of the data sent back from the Mars Rover. **Pupils with secure understanding indicated by:** identifying some types of data which the Mars Rover could collect (e.g. photos); explaining how the Mars Rover transmits the data back to Earth (radio waves) and the challenges involved in this (the great distance); researching a comparative fact about the distance to Mars. **Pupils working at greater depth indicated by:** identifying types of data that the Mars Rover could collect; explaining some of the purposes of data collection going beyond obvious data; researching comparative facts about the distance between Earth and Mars and the time it takes to send a signal to Mars. **Lesson 2: Binary Code** **Objective: To read and calculate numbers using binary code** ***National Curriculum*** • *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.* Skills:	• *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* Skills: • To identify how RFID can be used to transmit data. • To recall that encoding keeps data safe. • To type formulas into cells using a spreadsheet. **Key Vocab:** BAR codes, chip, encrypt, infrared, QR codes, radio, waves, RFID, wireless. Adaptive teaching **Pupils needing extra support** Could use the Download: data encoding template (support), which provides a table and formulae for children to work from and adapt (see Downloads); should use slide 6 of the Presentation: RFID to guide them. **Pupils working at greater depth:** Could use a three or four-stage encoding system by adding in two further columns which complete a new sum and then 'undo' it (they will need to think about which order the sums need to be completed in to ensure that they are successfully decoded); could try longer numbers, e.g. 16-digit codes to mimic

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Pupils needing extra support
Should complete the Activity: Paper laptop (support).

Pupils working at greater depth
Should write an explanation of how each part works.

Pupils with secure understanding indicated by: explaining that parts work together to make the laptop work and suggesting the role of some of the parts.

Pupils working at greater depth indicated by: suggesting how the parts work together and what messages they send to each other

Lesson 3: Dismantling a tablet
Objective: To decompose a tablet computer.

National Curriculum
- *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.*

Skills:
- To recall that a tablet is a computer.

National Curriculum
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output

Skills:
- I can create a variable to store a word or a number.
- I can use a variable to keep track of the score in my game.
- I can build a working game that uses variables to respond to the user's input.

- To identify binary as the most basic way that computers commute.
- to read Binary numbers. Up to 8 characters.
- To recall that each number (One or zero) is referred to as a bit.
- To calculate binary numbers, knowing each digit is worth double the one that precedes it.

Key Vocab: 8 bit, binary, binary code, data transition, numeric numerical data, radio signal, sequence.

Adaptive teaching

Pupils needing extra support
Should use the Activity: Binary bars as support while working out the numbers. Could use cubes/counters to support addition if needed.

Pupils working at greater depth
Should work out the highest possible number that can be reached with 8-bit binary if all the boxes were on (255). Should be able to complete multiple levels of 'Penjee – Binary Blitz' independently.

Pupils with secure understanding indicated by: reading and calculating binary numbers up to 8 bits. Understanding that numbers are referred to as a 'bit' and identifying binary as a basic way that computers communicate.

bank cards; could try to break each other's codes by thinking about what their partner multiplied or added to the code to create the transfer code.

Pupils with secure understanding indicated by: explaining how RFID works; recalling the use of RFID chips; typing formulas into spreadsheets

Pupils working at greater depth indicated by: comparing RFID to other methods of wireless data transfer; identifying a new use of RFID; manipulating and enhancing cells in a spreadsheet.

Lesson 3: Using RFID
Objective: To input and analyse real word data

National Curriculum
- *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*

Skills:
- To recognise further uses of RFID.
- To input and present data in a spreadsheet.
- To make conclusions from a data source.

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• To compare similarities and differences across different types of computers. • To use logic to suggest what's inside a computer. **Key Vocab:** components, CPU, disassemble, GPU, hard drive, RAM, ROM Adaptive Teaching **Pupils needing extra support** Should complete the Activity: Inside a tablet (support) and stick the components from the Resource: Tablet components on their laptops. Could use their paper laptop from lesson 2 to support them with the understanding of some components. **Pupils working at greater depth** Should explain what the different parts of a tablet do and why they are important. **Pupils with secure understanding indicated by:** recognising some computer parts relating to functions and making some laptop and tablet comparisons. **Pupils working at greater depth indicated by:** explaining what each component does.	**Key Vocab:** variables Adaptive teaching **Pupils needing extra support:** Should tick each part of their plan as they complete it to help them stay on track; could rewatch the Pupil video: Making a variable for extra guidance. **Pupils working at greater depth:** Should include at least three questions in their quiz; could use a '**say**' block and the '**score**' variable to tell the user their final score at the end of the quiz. **Pupils with secure understanding indicated by**: creating and using a variable to track a score; placing the correct blocks inside the if/else structure; understanding when and why the score should increase; giving meaningful feedback based on whether the answer is right or wrong. **Pupils working at greater depth indicated by:** using multiple variables to track scores and questions; tinkering to tell the user their score at the end of the game; personalising feedback using a 'name' variable; combining sensing, variables and conditional statements to build a more interactive quiz. **Lesson 3: Programming a game**	**Pupils working at greater depth** indicated by: reading and calculating binary numbers up to 8 bits. Understanding that numbers are referred to as a 'bit'. Identifying limitations of binary including that there is a maximum number of signals that can be sent and that only numbers can be sent. **Lesson 3: Using binary numbers** **Objective: To use simple operations to calculate bit patterns.** ***National Curriculum*** • *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.* Skills • To recall how binary is used to represent numbers up to 255. • To recall that numbers use binary mathematically to calculate data. • To carry out binary edition. **Key Vocab:** Addition, Binary numbers, Decimal numbers, input, output, subtraction. Adaptive teaching **Pupils needing extra support:**	**Key Vocab:** Column, data, Input RFID, row, spreadsheet. Adaptive teaching **Pupils needing extra support** Could use the Download: Spreadsheet template (support). **Pupils working at greater depth** Could compare the live wait time with the average wait time and colour code the cells in the spreadsheet to show if they are above or below average wait times. **Pupils with secure understanding indicated by:** entering data effectively into a spreadsheet; presenting the data collected in a graph; recognising the value of analysing data. **Pupils working at greater depth indicated by:** comparing data with longer term data; identifying new uses for data; imagining new uses of RFID chips. **Lesson 4: Transport Data** **Objective: To analyse and evaluate data** ***National Curriculum*** • *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,*

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	Objective: To combine variables, if statements and sensors to program a multiplication game. ***National Curriculum*** *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts* *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* *Use sequence, selection, and repetition in programs; work with variables and various forms of input and output* Skills: • TI can use the 'if/else' block to check whether an answer is correct. • I can use the score variable to keep track of correct answers. • I can personalise my game to make it fun and engaging for the player.	Should complete the Activity: Binary addition (support). Should use the printable answer sheet if required. **Pupils working at greater depth:** Should complete questions H-K of the Activity: Binary addition and explain their answers. **Pupils with secure understanding indicated by**: reading binary numbers and grasping the concept of binary addition. **Pupils working at greater depth indicated by:** reading 8-bit binary numbers; calculating the addition of more than three bits and explaining their working out.	*analysing, evaluating and presenting data and information.* • *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.* Skills: • I can recall how RFID is used in data transfer. • I can identify how RFID helps to solve real-world data challenges. • I can sort and compare data within a spreadsheet. **Key Vocab:** Algorithm, brand, commuter, contactless, Systems analyst Adaptive teaching **Pupils needing extra support** Could work with a learning partner or as part of a focus group and may need additional adult support to sort and analyse the spreadsheet data. **Pupils working at greater depth** Should notice other trends or patterns within the data; could create their own scenarios based on the data and solve with each other. **Pupils with secure understanding indicated by:** independently sorting and analysing

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	Key Vocab: ask block, if, then, else, join block, variable Adaptive teaching **Pupils needing extra support:** Should use the *Resource: Multiplication game checklist* to ensure they have followed all the steps when adding the new blocks; could remix the existing Scratch - Multiplication game project. **Pupils working at greater depth:** Should use a repeat or forever loop to ask more multiplication questions; could change the costumes of their sprite depending on whether the user gives a correct or incorrect answer using the looks panel and selecting the '**switch costume to**' block.		spreadsheet data to answer some customer scenarios. **Pupils working at greater depth indicated by:** completing six customer scenarios; explaining how data analysis provides a useful service to consumers; creating their own scenarios based on the data for each other to solve.

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	Pupils with secure understanding indicated by: understanding what a variable is and how it works within a program; creating and using the 'multiplier' variable to control the questions; correctly placing '**if/else**' blocks to check the user's answer; using the 'score' variable to track correct answers. **Pupils working at greater depth indicated by:** using multiple variables to increase interaction and difficulty; describing how conditions, inputs and variables work together to affect the program's behaviour; improving the user experience through interaction and refinements.		
Managing Online information, Privacy and security, Health , well-being and lifestyle **Lesson 3: When being online makes me upset** **Objective: To understand the effects that some internet use can have on our feelings and emotional wellbeing** ***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and*	**Managing Online Information** **Lesson 3: Fact, opinion or belief?** **Objective: To explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true** ***National Curriculum*** • *Use technology safely, respectfully and responsibly; recognise*	**Online Reputation** **Lesson 3: Online Reputation** **Objective: To understand how online information can be used to form judgements** ***National Curriculum*** • *Understand computer networks including the internet; how they*	**Online Reputation** **Lesson 3: Creating a positive online reputation** **Objective: To know how to create a positive online reputation** ***National Curriculum*** • *Use technology safely, respectfully and responsibly; recognise*

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ranked, and be discerning in evaluating digital content. • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • understand that being on the internet can affect their mood • To know what actions to take if something on the internet has upset them **Key Vocab:** internet, content, device, Block and report, Privacy settings Adaptive teaching **Pupils needing extra support** Should use the Activity: Internet emotion map. **Pupils working at greater depth** Could write a list of online situations that have affected their emotions; could suggest strategies using the seven tips for dealing with online content.	*acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* Skills: • To explain the difference between facts, opinions and beliefs • To make my own judgments about what Is read and seen online **Key Vocab:** fact, opinion, belief, reliability Adaptive teaching **Pupils needing extra support:** Could independently create a fact for each image and then work together to create an opinion. **Pupils working at greater depth:** Could use the Activity: Fact, opinion or belief?: extension. **Pupils with secure understanding indicated by:** explaining the difference between fact, opinion and belief; recognising these online. **Pupils working at greater depth indicated by:** using examples to explain the difference between facts, opinions and beliefs found online; describing why it is important to create their own judgements about what they have read.	*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; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • To understand why people search personal information about others online • To know how to search for personal information about others online • To form opinions about the reliability of the information about a person **Key Vocab:** information, personal information, judgement, Summarise, accurate, opinion, biography **Pupils needing extra support:**	*acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* Skills: • To describe what a positive online resolution is. • To explain strategies to create a positive online reputation. **Key Vocab:** Reputation, Online reputation, Digital footprints, Personality, Digital personality, Anonymity. Adaptive teaching **Pupils needing extra support:** Could be given the link: BBC Own It - What is your digital footprint? to rewatch the video so that they can be reminded of all the information types that make up Sunny's digital footprint. **Pupils working at greater depth:** Could include strategies on their Activity: Online reputation sheet to combat companies using or selling their personal information to other companies. **Pupils with secure understanding indicated by:** explaining what a digital reputation is and what it can consist of.

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Pupils with secure understanding indicated by: identifying different emotions that are evoked as a result of online activities; identifying actions that can be taken if something on the internet is upsetting or worrying . **Pupils working at greater depth indicated by**: identifying organisations, charities and helplines that can provide advice when a trusted adult is not available; explaining how different strategies can help in dealing with upsetting issues.		Could draw an image of Greta Thunberg and annotate around the image with information about her, such as her age, nationality, school, etc. **Pupils working at a greater depth:** Should include some key life milestones of Greta Thunberg on a timeline in their mini-biography **Pupils with secure understanding indicated by:** searching for simple information about a person, such as their birthday or key life moments. **Pupils working at greater depth indicated by**: understanding that information online about people is often somebody's opinion or judgement and not always factually true.	**Pupils working at greater depth indicated by:** explaining strategies for developing a positive online reputation.

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Managing Online Information, Privacy and Security **Lesson 4: Sharing information** **Objective: To understand the ways personal information can be shared on the internet** ***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* Skills: • To understand what 'privacy settings' are • To recognise that devices can communicate with one another to share personal information • to explain what 'autocomplete' is and how to choose the best suggestion	**Managing Online Information** **Lesson 4: What is a bot?** **Objective: To explain that technology can be designed to act like or impersonate living things** ***National Curriculum*** • ***use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact*** Skills: • explain what a 'bot' is • I can provide examples of bots • I can describe the benefits and the risk of using bots now and in the future **Key Vocab:** bot, computer, program, risks, advantage, disadvantage Adaptive teaching **Pupils needing extra support:** Could use slide 3 of the Presentation: What is a bot? for support with ideas on how a class bot could be used in the classroom. **Pupils working at greater depth:** Should think about the potential risks of the bot and the ways these could be dealt with. **Pupils with secure understanding indicated by**: explaining what a bot is and giving examples of different bots.	**Online Bullying** **Lesson 4: Online Bullying** **Objective: To discover ways to overcome bullying** ***National Curriculum*** • *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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • To recognise the differences between online and offline bullying. • To describe some of the differences between online and offline bullying. To identify ways to help those being bullied online. • To recall organisations and people who can help with online bullying issues. **Key Vocab:** bullying online. Real world, trusted adult, organisation	**Online Bullying** **Lesson 4: Capturing Evidence** **Objective: To be able to describe how to capture bullying content as evidence** ***National Curriculum*** • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* Skills: • To know a range of strategies to collect evidence. • To know who to share evidence with to help me. **Key Vocab:** Online bullying, screen grab, copy, paste, URL, block and report. Adaptive teaching **Pupils needing extra support:** Could be shown and follow the steps for each activity on the Activity: Capturing evidence. **Pupils working at greater depth:** Should research how to take screen grabs on their devices at home and include these at the bottom of their Activity: Collecting evidence sheet.

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Key Vocab: internet of things, smart devices, digital devices, autocomplete Adaptive teaching **Pupils needing extra support**: Should be encouraged to talk about and draw the more obvious devices and items in their home that connect via the internet and to share personal information (e.g. phones and computers). **Pupils working at greater depth:** Could draw what they think a home with the connected devices they have used in their booklets may look like on the back page of their mini-guide. **Pupils with secure understanding indicated by**: understanding that digital devices can share personal information amongst each other. **Pupils working at greater depth indicated by**: recognising how devices communicate with the internet to provide information and data; identifying examples of devices (e.g. supermarkets, smart motorways etc.).	**Pupils working at greater depth indicated by**: explaining the advantages and risks of bots around the home and workplace.	Adaptive teaching **Pupils needing extra support:** Could focus on drawing images for the logos of anti-bullying organisations (Childline, The Mix, Safer Internet Matters, etc.), which could be used within their group's role-play. **Pupils working at a greater depth:** Should incorporate multiple anti-bullying organisations into their group's role-plays **Pupils with secure understanding indicated by**: identifying what bullying is and that it can occur both online and in the real world. **Pupils working at greater depth indicated by**: identifying the similarities and differences between online and real-world bullying; knowing where to seek advice (e.g. adults and organisations).	**Pupils with secure understanding indicated by:** understanding the importance of capturing evidence of online bullying; demonstrating some of these methods on the devices used at school. **Pupils working at greater depth indicated by:** explaining why it is important to capture evidence of online bullying; researching how to do this on the devices they use at home.
Recap activity – https://www.educaplay.com/learning-resources/15610339-scratch_key_vocab.html **CORE UNIT QUESTION Video Trailers (iPad)** **Lesson 1: Planning a book trailer**	Recap activity – https://www.educaplay.com/learning-resources/15610364-fill_in_the_blanks_scratch_word_definitions.html **CORE UNIT QUESTION : Data Handling Investigating Weather**	Recap activity – https://www.educaplay.com/learning-resources/15643258-scratch_2_0_window.html **CORE UNIT QUESTION : Stop Motion Animation**	Recap activity – https://www.educaplay.com/learning-resources/15623836-binary_adding_rules.html **CORE UNIT QUESTION Exploring Ai**

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Objective: To plan a book trailer. ***National curriculum*** • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact*. Skills: • To identify the purpose of a book trailer • To identify the key events in a story • To plan a book trailer **Key Vocab:** film, key events, plan, storyboard, trailer Adaptive learning **Pupils needing extra support** Should use Activity: Storyboard template A, which contains question prompts. **Pupils working at greater depth**	**Lesson 1: What's the weather?** **Objective: To log data taken from online sources within a spreadsheet** ***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* Skills • To know what the weather is and what can affect it. • To understand the importance of data in weather forecasting. • To search the internet for weather data. • To record this data in a spreadsheet. **Key Vocab**: accurate, condensation, degrees Celsius, evaporation, measurement, weather Adaptive teaching **Pupils needing extra support** Should use the Activity: Temperature data to record their data before inputting it into the spreadsheet; could use an atlas or refer to the	**Lesson 1: Animation Explored** **Objective: To understand what animation is** ***National Curriculum*** • *Use sequence selection and repetition and programmes work; with variables and various forms of input and output.* Skills: • To understand and explain what animation means. • To explain the history of animation. • To create my own 19th century animation toy. **Key Vocab :** Animation, Still Image Moving Image Thaumatrope, Flipbook, Zoetrope. Frame Adaptive teaching **Pupils needing extra support** Should use the Activity: Thaumatrope template animation as it requires only two images. **Pupils working at greater depth** Could add two objects or characters to their zoetrope or flipbook design. **Pupils with secure understanding indicated by:** creating a toy with simple images with a single movement.	**Lesson 1: What is AI?** **Objective: To explore the basics of AI** ***National Curriculum*** • *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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* Skills: • To explain what AI is • To identify real-life applications of AI that we use daily • To discuss how AI contribute to sustainability **Key Vocab:** AI, algorithm, applications, learn, patterns, trained Adaptive teaching **For pupils needing extra support** Should use the internet to support generating ideas for a new AI solution; could

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Should write the storyboard from the main character's perspective, rather than a narrator. **Pupils with secure understanding indicated by**: creating a storyboard to plan their book trailer and describing the purpose of a trailer. **Pupils working at greater depth indicated by:** creating a detailed storyboard for their book trailer from the main character's perspective, understanding their audience and the purpose of the trailer as well as describing the impact of music and sound effects. **Lesson 2: Filming** **Objective: To take photos or videos that tell a story.** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour;*	Resource: World map to find cities from their continent to research. **Pupils working at greater depth** Could use their geographic knowledge to help them to get closer to the highest and lowest temperatures; should insert a table to help them sort the data more easily. **Pupils with secure understanding indicated by**: searching the web efficiently to find temperatures of different cities; recording data using a simple spreadsheet; sorting data to find the hottest and coldest cities. **Pupils working at greater depth indicated by**: recording accurate data about temperatures around the world; sorting the data in their spreadsheet; formatting their table to highlight key data points in their data set. **Lesson 2: Extreme Weather** **Objective: To design an automated machine to respond to sensor data** ***National Curriculum:*** • *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.* Skills:	**Pupils working at greater depth indicated by**: creating a toy with increased complexity in the movement of the objects. **Lesson 2: Exploring Stop Motion** **Objective: To understand what stop motion animation is** ***National Curriculum*** • *Design, write and debug programmes that accomplish specific goals, including controlling or simulating physical systems; Solve problems by decomposing them into smaller parts.* • *Use sequence, selection, and repetition and programmes; Work with variables and. Various forms of input and outputs.* Skills: • To explain what stop motion means. • To create a short animation • To recognise what onion skinning is • To make small changes to an object to make the object animation smoother. **Key vocab:** Animation, Stop motion frame, Onion skinning. **Pupils needing extra support**	rewatch the *Pupil video: What is AI?* to support understanding the concept of AI. **Pupils working at greater depth** Should consider the strengths and weaknesses of each application; could write an explanation of how the AI would function in their sustainable solution **Pupils with secure understanding indicated by**: explaining what AI is and its basic functions; identifying real-life applications of AI that are commonly used in everyday life; discussing how AI can contribute to sustainability and its role in energy efficiency and waste reduction. **Pupils working at greater depth indicated by:** identifying multiple real-life applications of AI that are commonly used in everyday life and explaining their purpose; demonstrating a deeper understanding of how AI can play a significant role in the environment. **Lesson 2: AI and text** **Objective: To recognise how AI processes and responds to text prompts** ***National Curriculum*** *Understand computer networks, including the internet; how they can provide multiple*

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identify a range of ways to report concerns about content and contact. Skills: • To frame shots differently to create the effect wanted • To use digital devices to record video or take photos **Key Vocab:** film, key events, storyboard, trailer, video, voiceover Adaptive teaching **Pupils needing extra support** Should take photos rather than filming so they can spend time carefully framing their shots; could suggest sound effects that they think would match their photos. **Pupils working at greater depth** Should incorporate sound effects, voiceovers and music, considering how they will fit together and filming shots from different angles and distances; could draw their own images of characters **Pupils with secure understanding indicated by**: using digital devices to record video or take photos, framing shots carefully to create the desired effects **Pupils working at greater depth indicated by**: using a range of camera angles to film scenes for their trailer and planning relevant sound effects, voiceovers and music to match.	• know that sensor data can be used to help predict extreme weather. • I can use keywords to effectively search for information on the Internet. • I can write an algorithm for an automated machine which uses selection. **Key Vocab:** accurate, climate zone, extreme weather, lightning, sensor data, tornado Adaptive teaching **Pupils needing extra support** Could use one of the given examples in the lesson plan to build their ideas on. **Pupils working at greater depth** Should add detail to their algorithm, showing what the device would do after the dangerous weather has passed **Pupils with secure understanding indicated by:** designing an automated machine that uses selection to respond to sensor data. **Pupils working at greater depth indicated by**: writing an algorithm to explain how their automated device would work, including what should happen after dangerous or extreme weather has passed. **Lesson 3: Satellites and Forecasts** **Objective: To understand how weather forecasts are made**	Should make small, simple movements; should be encouraged to make mistakes and discuss what they could do to improve. **Pupils working at greater depth** Should break their modelling dough into two pieces and animate two blobs at a time; should be reminded that they will need to move both blobs between every shot and keep the movements small. **Pupils with secure understanding indicated by:** creating a short stop motion with small changes between images. **Pupils working at greater depth indicated by:** creating an animation that includes two objects moving between individual frames. **Lesson 3: Planning my stop motion project** **Objective: To plan my stop motion Video, thinking about the characters I want to use.** ***National Curriculum*** • *Design, write and debug programmes that accomplish specific goals, including controlling or simulating physical systems; Solve problems by decomposing them into smaller parts.* • *Use sequence, selection, and repetition and programmes; Work*	*services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.* *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • I can recognise how some prompts and responses go together.

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Lesson 3: Editing the Trailer **Objective: To edit a video** ***National Curriculum*** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • 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 Skills: • To import videos and photos into film editing software. • to tinker with film editing software on a tablet. • to include important written information in my video **Key Vocab:** application, edit, film editing software, graphics, recording, sound effects, time code, video, voiceover Adaptive teaching **Pupils needing extra support** Should be encouraged to focus on importing their photos and getting them in the correct order.	***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* • *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.* Skills: • To know how weather is predicted. • to use search engines to find information. • to record data in a spreadsheet. **Key Vocab:** heat sensor, satellite, temperature, weather forecast, wind speed Adaptive teaching **Pupils needing extra support** Should work with a partner and focus on finding the relevant information on websites and putting it in the spreadsheet.	*with variables and. Various forms of input and outputs.* Skills: • To work collaboratively with others to plan a storyboard for an animation. • To keep an animation idea simple. • To design and create a character that can be used in an animation. • To decompose a story into smaller parts **Key Vocab:** Animation, Stop motion, frame, Storyboard, decomposition. Adaptive teaching **Pupils needing extra support** Should be given an idea to work on and use the Activity: Storyboard worksheet: support version. **Pupils working at greater depth** Should indicate different camera movements, e.g. pan, zoom; could use more than one object. **Pupils with secure understanding indicated by**: thinking of a simple story idea for their animation; decomposing it into smaller parts to create a storyboard with simple characters.	• I can identify how changing specific details in a prompt can affect the generated text. • I can create an AI-type response with a given prompt. **Key Vocab:** AI –generated text, generate, prompt, refine, response Adaptive teaching **Pupils needing extra support** Should use the *Resource: Writing an AI response* to support them throughout the process of writing their responses; could focus on developing only one part of the story, such as the setting. **Pupils working at greater depth** Should evaluate each version of their response and be encouraged to identify what makes each version more effective or interesting; could make notes considering the balance between human creativity and AI, thinking about areas where human input is crucial. **Pupils with secure understanding indicated by**: demonstrating a basic understanding of how AI understands and processes text prompts; generating and improving content; explaining how altering key details in a prompt changes the text generated by an AI;

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Pupils working at greater depth Should incorporate text into their video. **Pupils with secure understanding indicated by:** importing videos and photos into film editing software. **Pupils working at greater depth indicate by**: importing videos and photos into film editing software; incorporating text into their video to provide context on what is happening on the screen. **Lesson 4: Transitions and text** **Objective: To add text and transitions to a video.** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.* • *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.* Skills: • To add text to a video	**Pupils working at greater depth** Should explain in detail how information from satellites and ground stations leads to weather forecasts as well as how collaboration between forecasters could impact the accuracy of predictions. **Pupils with secure understanding indicated by:** searching for and recording weather forecast information in a spreadsheet and explaining how this data is collected. **Pupils working at greater depth indicated by:** explaining in detail how weather is predicted and justifying their opinion on which forecasts might be the most accurate**.** **Lesson 4: Presenting Forecasts** **Objective: To use tablets or digital cameras to present a weather forecast** ***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given*	**Pupils working at greater depth indicated by**: including two or more scenes that would be easy to animate using the resources provided. **Lesson 4: Stop Motion Creation** **Objective: To create stop motion animation** ***National Curriculum*** • *Design, write and debug programmes that accomplish specific goals, including controlling or simulating physical systems; Solve problems by decomposing them into smaller parts.* • *Use sequence, selection, and repetition and programmes; Work with variables and. Various forms of input and outputs.* Skills:	providing thoughtful suggestions for improvements. **Pupils working at greater depth indicated by:** demonstrating an in-depth understanding of how AI text generators work; experimenting with and optimising prompt structures; evaluating multiple variations of a prompt and response; critically evaluating AI responses by comparing them with human-generated content. **Lesson 3: Ethics and AI** **Objective: To debate the ethical implications of AI** ***National Curriculum*** *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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • To explain the key ethical considerations of AI

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• To understand what transitions are in film • To incorporate different transitions in a video **Key Vocab:** cross dissolve, fade to black, fade to white, theme, transition, wipe Adaptive teaching **Pupils needing extra support** Should use a limited number of transitions, sounds and images to help them achieve a finished piece. **Pupils working at greater depth** Should include a variety of transitions and text on screen. **Pupils with secure understanding indicated by**: adding text to their trailers and incorporating different transitions between shots or images. **Pupils working at greater depth indicated by:** adding text to their trailer at relevant times and incorporating a variety of transitions between shots.	*goals, including collecting, analysing, evaluating and presenting data and information.* Skills: • To know what information is included in a weather forecast. • to write a short script for a weather forecast. • To create a short video. **Key Vocab:** filming, presenter script, temperature, weather forecast Adaptive teaching **Pupils needing extra support** Should focus on their filming skills within the group, judging whether they are the correct distance from the presenter. **Pupils working at greater depth** Could be asked to clearly explain how they could make improvements to their work if they were to repeat the activity, using some editing terminology. **Pupils with secure understanding indicated by**: creating a video that includes weather forecast information.	• To create a simple animation following storyboard plan • To decompose my animation into smaller parts. • To change my plan to recognise when something is too difficult to animate. • To recognise the importance of keeping the camera still and making small movements between shots. **Key Vocab:** Animation, stop motion, frame, decompose, onion skinning, storyboard Adaptive teaching **Pupils needing extra support** Should rewatch the Stop Motion Studio - Animation video; could be given the responsibility of referring back to their storyboard to make sure their group tells the story through the animation. **Pupils working at greater depth** Should review the animation to identify any frames that need to be deleted; should include multiple backgrounds or objects in their animation. **Pupils with secure understanding indicated by**: making small changes to the models to	• To identify situations where AI could be beneficial and where it could be harmful • To debate the potential of AI replacing human roles, presenting well-structured arguments **Key Vocab:** argument, considerations, debate, ethical, implications, rebuttal, replace, task Adaptive teaching **Pupils needing extra support** Should use the *Resource: Sentence starters* (support) in the ethical dilemma activity; could take on the role of the timekeeper and encourager, keeping track of time and offering positive encouragement to their classmates. **Pupils working at greater depth** Should take on a lead role in the debate, moderating or presenting advanced arguments; could consider and explain the broader implications of AI on society. **Pupils with secure understanding indicated by:** explaining the main ethical issues related to AI and why they are important; identifying and describing situations where AI can be helpful and those where it might cause harm; presenting well-organised arguments in a debate about AI taking over human jobs; effectively responding to opposing views..

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	Pupils working at greater depth indicated by: editing and refining their forecasts using editing software or clearly explaining how they could improve their films if they had editing software available.	ensure a smooth animation and deleting unnecessary frames. **Pupils working at greater depth indicated by:** creating an animation with multiple scenes or characters, which all move throughout the film, while the camera and set remain stationary.	**Pupils working at greater depth indicated by**: evaluating the ethical considerations of AI critically; providing detailed examples and demonstrating a deep understanding of the complexities involved; identifying and analysing a variety of situations where AI can be beneficial or harmful and offering insightful explanations while considering multiple perspectives; presenting well-structured arguments in a debate about AI replacing human roles, incorporating evidence and effectively countering opposing viewpoints with thoughtful responses.

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Health, well-being and lifestyle, Online Reputation **Lesson 5: Rules of social media platforms** **Objective: To understand the rules for social media platforms** ***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • understand what social media platforms are used for • I can recognise why social media platforms are age-restricted • I can list some top tips on using social media platforms for people to stay safe **Key Vocab: s**ocial media platforms, age restrictions, digital devices, search functionality	**Health, well-being, and lifestyle** **Lesson 5: What is my # tech timetable like?** **Objective: To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology** ***National Curriculum*** • *use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* Skills: • To explain how technology can be both a positive and negative distraction • to recognise the amount of time I spend on technology • to suggest strategies to help limit time spent on technology **Key Vocab:** distractions, screen time, hashtag Adaptive teaching **Pupils needing extra support:** Could use the teacher's demonstration of a technology timetable to refer to; could refer to the list of how the class use technology for support.	**Health, well-being, and lifestyle** **Lesson 5: Online Health** **Objective: To understand how technology can affect health and wellbeing.** ***National Curriculum*** • *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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • I can identify the advantages and disadvantages technology has to health (mental and/or physical). • I can research advice and ways to support others with their online health and wellbeing. • I know where I can go to for support if my wellbeing is being negatively affected by technology.	**Privacy and security** **Lesson 5: Password Protection** **Objective: To manage personal password effectively** ***National Curriculum*** • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • To know how to create a strong password. • To know a range of strategies for managing the passwords. • To explain what to do if my password is shared, lost or stolen. **Key Vocab:** Biometrics, two Factor authentication, Password, username, secure, hacking. Adaptive teaching **Pupils needing extra support:** Could use the Activity: Access system: support version. **Pupils working at greater depth:**

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Adaptive teaching **Pupils needing extra support:** Could draw the icons and/or interface of a popular social media platform discussed in their group's role play. **Pupils working at greater depth:** Should include more than four top tips to stay safe on social media platforms within their role play. **Pupils with secure understanding indicated by:** understanding some of the features of social media platforms and the age restrictions required for popular social media platforms. **Pupils working at greater depth indicated by:** understanding the age restrictions of social media platforms; articulating why these restrictions are in place; identifying the available features of social media platforms (e.g. live chat, instant messaging and picture sharing) on a range of sites online.	**Pupils working at greater depth:** Could share strategies to help reduce the amount of time spent on technology. **Pupils with secure understanding indicated by**: explaining some positive and negative distractions of using technology; identifying some small strategies on how to reduce the amount of time spent on technology. **Pupils working at greater depth indicated by:** recognising and explaining the positive and negative distractions the technology they use has on them; identifying changes they may need to make to reduce the amount of time spent on technology.	**Key Vocab:** app, health, mental health, Mindfulness, organisation, support, well-being Adaptive teaching **Pupils needing extra support:** Could act out how health and well-being may be affected by technology and social media, such as feeling sad or angry, and act out advising others to combat the negative effects of online use; could use the Activity: My healthy screen habits to write or draw tips and advice to protect health and well-being when using the internet. **Pupils working in greater depth:** Could research online about mindfulness and create a section of their poster dedicated to what they find. **Pupils with secure understanding indicated by**: recognising when health and well-being are being affected in either a positive or negative way through online use; offering some advice and tips to combat the negative effects of online use. **Pupils working at greater depth indicated by**: recognising the impact of online use on health and wellbeing; suggesting tips and advice to others about the impact that online use can have on health and mental well-being.	Could think of their own device to protect rather than the sweet dispenser; could think in more detail about the generation of the usernames and passwords, how they will store and manage these securely and how they will hand them out. **Pupils with secure understanding indicated by**: describing ways to manage passwords and strategies to add extra security, such as two-factor authentication: explaining what to do if passwords are shared, lost or stolen. **Pupils working at greater depth indicated by:** describing effective ways to manage passwords; understanding the importance of not sharing passwords; describing why others may want passwords; explaining what to do if passwords are shared, lost or stolen and the importance of doing this quickly.

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Copyright and Ownership	Copyright and Ownership	Managing Online Information	Privacy and security
Lesson 6: Is it ok to use this image? (Project Evolve) **Objective: I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause.** ***National Curriculum*** • *use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* Skills: • To understand that we all have rights over the content we create • To know that whilst the internet may be 'Free' not all content is 'Free to use' **Key Vocab:** permission, internet , World Wide Web, individual	**Lesson 6: Right to reuse? (Project Evolve)** **Objective: 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 use it.** ***National Curriculum*** • *use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* Skills: • Demonstrate ways of recognising who might own online content. • Explain what reuse is. • Give examples of when they are/are not permitted to reuse online content. **Key Vocab:** permissions, content, rights	**Lesson 6: Money talks? (Project Evolve)** **Objective: I can describe ways of identifying when online content has been commercially sponsored or boosted, (e.g. by commercial companies or by vloggers, content creators, influencers).** ***National Curriculum*** • *use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* • *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 and evaluating digital content* Skills: • Understand that some online content may be commercially promoted.	**Lesson 6: Think before you click** **Objective: To be aware of strategies to help be protected online** ***National Curriculum*** • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.* Skills: • To describe simple ways to increase privacy settings. • To explain why you should keep software updated • To describe strategies to identify scams. **Key Vocab:** Personal information, financial information, scammers, Phishing, malware, software updates, reliable source, antivirus. Adaptive teaching **Pupils needing extra support:** Could create a poster to explain what phishing is using slide 5 from Presentation: Think before you click. **Pupils working at greater depth:** Should include useful strategies to identify scams.

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		• Know what is meant by content that is sponsored or boosted. • Understand that some influencers or vloggers are paid to promote items. • Recognise that where content is sponsored, it is not always apparent. **Key Vocab:** content, influencers, vloggers, sponsored, boosted, promote	**Pupils with secure understanding indicated by:** describing strategies to identify scams; explaining ways to increase privacy settings; understanding why it is important to keep their software updated. **Pupils working at greater depth indicated by:** describing ways in which online content is used to target people to gain money or information and describing a number of ways to help identify this content; sharing tips on ways to increase privacy on apps; identifying how to put these into practice on home devices
Recap activity – https://www.educaplay.com/learning-resources/15639108-inputs_and_outputs.html **CORE UNIT** QUESTION Programming **: Scratch** **Lesson 1: Tinkering with Scratch** **Objective: To explore a programming application** ***National Curriculum*** *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* • *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical*	Recap activity - https://www.educaplay.com/learning-resources/15610682-spreadsheet.html **CORE UNIT QUESTION : Programming 2- Computational Thinking** **Lesson 1: Decomposition and pattern recognition to solve problems** **Objective: To apply decomposition and pattern recognition to solve problems**	Recap activity - https://www.educaplay.com/learning-resources/15644302-what_do_the_keys_do.html **CORE UNIT QUESTION: Programming Music** **Lesson 1: Scratch soundtracks** **Objective: To create a program that plays music from a given genre.** ***National Curriculum*** • *Design, write and debug programmes that accomplish specific goals, including controlling or simulating physical systems; Solve problems by*	Recap activity - https://www.educaplay.com/learning-resources/15643311-scratch.html **CORE UNIT QUESTION: Programming Intro to Python** **Lesson 1 : Tinkering with Logo** **Objective: To tinker with a new piece of software** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts*

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systems; solve problems by decomposing them into smaller parts Skills: • To identify that Scratch is a coding application. • To predict what I think different code will do. • To explore an application independently. **Key Vocab:** coding, predict, program, sprite, tinker Adaptive teaching **Pupils needing extra support:** Should explore one set of blocks and give verbal feedback (e.g. I used the change colour block and it made x happen); could rewatch the Pupil video: Tinkering with Scratch or view the Presentation: Tinkering with Scratch for further support. **Pupils working at greater depth:** Should be encouraged to use blocks from three different colour groups. **Lesson 2: Planning a remix** **Objective: To plan a remix of an animation by altering existing code**	***National Curriculum*** • *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.* • *Design, write and debug programs that* accomplish *specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.* Skills: • I can break a task into smaller, manageable parts. • I can identify patterns in similar tasks or problems. • I can explain how patterns help solve problems. **Key Vocab:** computational thinking, decomposition, pattern recognition Adaptive teaching **Pupils needing extra support** Should use the *Activity: Carousel journal: support* to help them log their findings during the carousel activity; could watch the *Pupil video: Decomposition* and the *Pupil video: Pattern recognition* before the lesson as a pre-teaching tool to build familiarity with the key concepts. **Pupils working at greater depth** Should provide a detailed level of description in their journal explaining the link between the skill	*decomposing them into smaller parts.* • *Use sequence, selection, and repetition and programmes; Work with variables and. Various forms of input and outputs.* **Skills:** • To recognise how different sounds can change the mood of a visual scene. • To use basic sound blocks in Scratch • To include a loop in my program. **Key Vocab:** code, genre, loop, pitch, program, rhythm, soundtrack, tempo Adaptive teaching **Pupils needing extra support** Should use basic sound functions to develop their confidence and familiarity with Scratch; could remix the Download: Hip hop demo.sb3 and add or remove blocks **Pupils working at greater depth** Should include multiple loops within their program; could explain how their chosen sounds enhance the genre and make a connection between these and genre-specific characteristics. **Pupils with secure understanding indicated by:** recognising how different sounds can	• *Use sequence, selection, and repetition in programs; work with variables and various forms of input and output* Skills: • To predict what I think something you will do. • To explore something independently, • To explain what I found. **Key Vocab:** Loop, code, command, patterns, instructions Adaptive teaching **Pupils needing extra support:** Should explore simple 2D shapes, such as squares, rectangles and triangles of different sizes. **Pupils working at greater depth:** Could discuss what would happen if they used another loop between the 'do' and the 'end'; could try this by tinkering and reflecting on what happened. **Pupils with secure understanding indicated by:** exploring ideas, testing and changing the program throughout the lesson; explaining what their program does. **Pupils working at greater depth indicated by:** incorporating nested loops (loops inside of loops) into their program; predicting what

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National Curriculum *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts* Skills: • I can use decomposition when looking at a project. • I can identify which parts of the animation I want to remix. • I can explain how I will alter the code to create my remix. **Key Vocab:** animation, decomposition, forever block, loop, remixing, repeat block Adaptive teaching **Pupils needing extra support:** Should choose one remix option from the remix suggestions (for example, making the Earth spin) to develop their code; could verbally explain how the code could be remixed further. **Pupils working at greater depth:** Should choose a more complex remix from the remix suggestions (for example, the rock bouncing off the monkey) and two further remix ideas of their own; should predict what each sprite does in the Scratch - Lost in space remix; could remix their code further by changing the background to alter the theme.	and the activity, e.g. using decomposition to break the journey into smaller steps in the Map it out activity; could design their own pattern or problem for others to solve **Pupils with a secure understanding indicated by**: breaking a task into smaller, manageable parts and explaining their steps; identifying patterns in a sequence; explaining how decomposition and pattern recognition make the tasks easier. **Pupils working at greater depth indicated by:** decomposing tasks into logical, detailed steps and justifying their choices; evaluating the effectiveness of decomposition and pattern recognition in problem-solving; making connections between the skills and their application in coding **Lesson 2:Abstraction** **Objective: To explain and apply abstraction by identifying key details in a problem.** ***National Curriculum*** *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.*	change the mood of a visual scene; using a variety of blocks in Scratch to create a sound; using a loop to repeat sounds. **Pupils working at greater depth indicated by**: using multiple loops to repeat sounds; explaining how their chosen sounds effectively enhance the genre, making connections between the sound elements and genre-specific characteristics. **Lesson 2: Planning a soundtrack** **Objective: To plan a soundtrack program for a specific film genre.** ***National Curriculum*** *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts* • *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* Skills: • To decompose a program into smaller pieces	will happen; debugging quickly and effectively. **Lesson 2: Nested Loops** **Objective: To understand nested loops** ***National Curriculum*** • *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* Skills: • To explain what a loop is. • To know why we use loops. • To explain how a nested loop works. **Key Vocab:** nested loop, repeat, shape Adaptive teaching **Pupils needing extra support:** Could be provided with the format 'repeat 10 [repeat 4[fd 100 rt 90] rt 36]' and told that the number '4' should be the number of sides the shape has and the number '90' should be the angle written underneath the shape on slide 8 of the Presentation: Nested loops.

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Pupils with secure understanding indicated by: decomposing a project into smaller parts; suggesting possible additions to an existing program; identifying which blocks to remix depending on the desired outcome; describing how the changes will affect the program. **Pupils working at greater depth indicated by:** planning a more complex remix incorporating background changes; thinking critically about how each element of the code contributes to the overall project; explaining in detail how and why the planned changes will affect how the program works, including its appearance, timing and audience engagement. **Lesson 3: Remixing an animation** **Objective: To remix an animation by altering the program's code.** ***National Curriculum*** *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* • *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical*	*Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.* Skills: • I can identify key information needed to solve a problem. • I can ignore irrelevant details in a task. • I can explain how abstraction makes problem-solving simpler. **Key Vocab:** abstraction, computational thinking, relevant Adaptive Teaching **Pupils needing extra support** Should include up to four features on their map; could watch the *Pupil video: What is abstraction?* before the lesson as a pre-teaching tool to build familiarity with the key concepts. **Pupils working at greater depth** Should create their own playground map on A3 paper; should critique another pair's map and focus on how well abstraction was applied, offering suggestions for improvement; could annotate their map with key decision points (e.g. they included the allotment to grow food for the school kitchen).	• Through to reuse existing code and adapt it for another program • To plan my soundtrack, including the sequence of sounds and loops. **Key Vocab:** adapt, decompose, remixing, Adaptive teaching **Pupils needing extra support** Should use the code from the *Download: Hip hop demo.sb3* as an example when planning; could be given a particular set of sounds to use in their program. **Pupils working at greater depth** Should note down the timing of each sound and loop; could write brief descriptions of what each part of the soundtrack represents. **Pupils with secure understanding indicated by:** identifying how to decompose a program into smaller pieces; reviewing existing code and adapting it for their soundtrack; planning a soundtrack that includes the sequence of sounds and loops. **Pupils working at greater depth indicated by:** explaining how a program can be decomposed into smaller pieces to support with the planning process; identifying and critically evaluating existing code to adapt it effectively for their soundtrack; planning a	**Pupils working at greater depth:** Should be challenged to create a circle and then include that within a nested loop; should edit nested loops after creation and show an awareness of which parts they can or cannot change. **Pupils with secure understanding indicated by**: using nested loops in their designs; explaining why they need two repeats. **Pupils working at greater depth indicated by:** adapting and experimenting with a nested loop to change the outcome (rather than starting from a blank screen). **Lesson 3: Using Python** **Objective: To understand basic Python commands** ***National Curriculum*** • *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* Skills: • To decompose a picture. • To remix a project by tinkering.

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systems; solve problems by decomposing them into smaller parts Skills: • I can change parts of the code to make the animation different. • I can select the correct blocks to achieve my goals. • I can fix any problems I notice in my remixed animation. **Key Vocab:** debug, remixing Adaptive teaching **Pupils needing extra support:** Should focus on one aspect of the program to remix to make it more manageable; could use the *Resource: Code guide* to support their understanding of the function of each block. **Pupils working at greater depth:** Should remix multiple aspects of the code to create a more personalised program; could explain how each change affects the outcome of the program **Pupils with secure understanding indicated by:** suggesting what blocks or features have been	**Pupils with secure understanding indicated by:** identifying key information to solve a problem; recognising how ignoring irrelevant details in a task can be effective when solving a problem; explaining how abstraction simplifies problem-solving. **Pupils working at greater depth indicated by:** evaluating which details are important when problem-solving and justifying decisions; applying abstraction to create solutions; discussing how abstraction supports efficiency by creating a simpler solution. **Lesson 3: Algorithm design** **Objective: To design an algorithm to support an everyday task.** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.*	detailed soundtrack with timings and multiple loops. **Lesson 3: Programming a soundtrack** **Objective: To program soundtrack for a specific genre in Scratch** ***National Curriculum*** • *Design, write and debug programmes that accomplish specific goals, including controlling or simulating physical systems; Solve problems by decomposing them into smaller parts.* • *Use sequence, selection, and repetition and programmes; Work with variables and. Various forms of input and outputs.* Skills: • To identify a range of inputs and outputs • To include nested loops in my program. • To explain how my program enhances the scene. **Key Vocab:** genre, input, loop, nested loop, output, repeat Adaptive teaching **Pupils needing extra support**	• To choose Python commands for a purpose. **Key Vocab:** input, import. **Adaptive teaching** **Pupils needing extra support:** Could complete the same activity using Scratch to use the blocks rather than relying on typing. **Pupils working at greater depth:** Should clearly and confidently explain where each section of their code is. **Pupils with secure understanding indicated by:** altering the house drawing using Python commands; using comments to show a level of understanding around what their code does. **Pupils working at greater depth indicated by:** discussing which part of the code does what; adding colours to their code and controlling which part of the drawing they are filling. **Lesson 4: Using loops in Python** **Objective: To use loops when programming** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals, including controlling or simulating*

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used in a remixed project; recognising where specific parts of the animation are controlled by blocks of code; using a step-by-step approach to check their code and find simple bugs. **Pupils working at greater depth indicated by:** adding more detailed instructions to enhance a remixed project; controlling multiple sprites with different sets of code; refining code by testing and making thoughtful improvements to how the animation runs **Lesson 3: Evaluating an animation** **Objective: To evaluate a remixed program by reflecting on the changes made to the code.** ***National Curriculum*** *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts* *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* Skills: • I can test small parts of the code to find and fix errors.	• *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.* Skills: • I can design a clear algorithm to solve a task effectively. • I can create a clear and logical sequence of steps. • I can justify my choices when designing my algorithm. **Key Vocab:** algorithm, algorithm design, computational thinking, instructions, logical, sequence, unplugged Adaptive teaching **Pupils needing extra support**	Should remix the *Download: Nested loop demo.sb3* to give them a starting point of how to use a nested loop within their program; could rewatch the *Pupil video: Nested loops*. **Pupils working at greater depth** Should include multiple nested loops in their program; could focus on syncing their music to match their sprite's movements.. **Pupils with secure understanding indicated by**: identifying a range of inputs and outputs; including nested loops in their program and identifying how these make the program more efficient; explaining how their use of nested loops and chosen sounds enhances their genre. **Pupils working at greater depth indicated by**: describing inputs and outputs in different contexts; using multiple nested loops and explaining how they improve the efficency of the code; critically evaluating how their use of sounds and blocks enhances their genre. **Lesson 4: Evaluating a soundtrack** **Objective: To debug and evaluate a soundtrack program** ***National curriculum.*** • *Design, write and debug programmes that accomplish specific goals, including controlling or simulating physical*	*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* Skills: • To explain what a loop is. • To suggest an appropriate place to use a loop. • To use the syntax for a loop. **Key Vocab:** design, indentation Adaptive teaching **Pupils needing extra support:** Could be given the code on the link: Trinket - Repeated circle design program and encouraged to experiment with it, changing the numbers to see what they can create; could use Scratch to build repeating patterns if they struggle managing written code using the link: Scratch - Islamic code. **Pupils working at greater depth:** Should be encouraged to use embedded loops to create each of their rows. **Pupils with secure understanding indicated by**: using loops in Python and explaining what the parts of a loop do. **Pupils working at greater depth indicated by**: including nested loops in Python;

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• I can describe the changes I made and why I made them. • I can reflect on what worked well and what I could improve. **Key Vocab:** debug, evaluate Adaptive Teaching **Pupils needing extra support:** Should note down some thoughts about their project on a whiteboard before completing their evaluation; could verbally evaluate their program to a partner. **Pupils working at greater depth:** Should reflect on why they chose certain blocks and how those choices affected the animation; should consider the user's experience, for example, if someone else would enjoy it and why. **Pupils with secure understanding indicated by**: identifying which part of the code controls each action on screen; testing parts of the code to check for errors; explaining what they changed or added in their remixed animation; suggesting improvements in their projects. **Pupils working at greater depth indicated by**: explaining why they chose certain blocks and how these improved the animation; describing how changes made the animation more engaging or	Should use the *Activity: Morning algorithm (support)* to help them with writing their algorithm; could draw instead of writing a visual sequence for each step of their morning algorithm. **Pupils working at greater depth** Should explain how they used the skills of decomposition and abstraction when creating their algorithm; could consider where they might use a 'repeat' instruction instead of listing every step; could suggest a 'conditional' statement, such as 'if a reading book needs changing, go to the reading area'. **Pupils with secure understanding indicated by:** designing a clear algorithm to solve the morning routine effectively; creating a logical sequence of steps that can be followed correctly; testing and debugging an algorithm; justifying choice by explaining why the steps are in a specific order. **Pupils working at greater depth indicated by:** evaluating an algorithm to determine if it is the most efficient way to complete the task;	*systems; Solve problems by decomposing them into smaller parts.* • *Use sequence, selection, and repetition and programmes; Work with variables and. Various forms of input and outputs.* **Skills:** • To spot any errors in the code • Tocan make changes to fix the errors so the program works as intended. • To evaluate a program and give helpful feedback. **Key Vocab:** debugging, evaluate, loop, nested loop Adaptive teaching **Pupils needing extra support** Should focus on suggesting small changes (e.g. making it faster or adding more notes); could describe the sounds they hear and note if they match their partner's description. **Pupils working at greater depth** Should explain how their soundtrack choices enhance the mood and atmosphere, describing how sound elements engage the audience; could	explaining what will happen if they change different values in their code.

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meaningful; considering how someone else might view or enjoy the animation and giving reasons; suggesting multiple ways to improve the project based on testing and observation; evaluating how well the timing, structure and flow of code support the animation's purpose. **Lesson 5: Programming a game** **Objective: To program a game** ***National Curriculum*** *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* Skills: To explain the purpose of an algorithm To decompose a problem To use an algorithm to code a program **Key Vocab:** game, algorithm Adaptive teaching **Pupils needing extra support:** Could be provided with some of the completed code matched to the algorithm to reinforce the	identifying patterns and simplifying steps by using repetition where needed; justifying choices by linking them to how computers require precise, step-by-step instructions. **Lesson 4: Computational thinking in asction** **Objective: To apply and reflect on computational thinking skills while creating a Scratch project.** ***National Curriculum*** *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.* *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.* Skills: • I can break my project into smaller parts and focus on the most important features. • I can design and improve my project using pattern recognition and clear algorithms.	describe any changes made and how these improved the program's functionality. **Pupils with secure understanding indicated by**: identifying errors in the code and explaining how it affects the programs functionality; modifying code to fix errors; evaluating a program by giving clear, constructive feedback on a program. **Pupils working at greater depth indicated by:** distinguishing between elements that could be improved and bugs that stop the program from working properly; explaining how soundtrack choices create mood and atmosphere; describing how the sounds help engage the audience; remixing the code to improve the efficiency of the program; explaining the root of an error using key vocabulary; evaluating a program considering multiple perspectives.	

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link between the two; could use the Resource: Robot bop for support. **Pupils working at greater depth:** Could complete challenge activities by independently changing the size of the sprites, changing the wait time and making the sprites change size randomly using the Resource: Robot bop remix (extension). **Pupils with secure understanding indicated by:** explaining what an algorithm is; understanding the purpose of an algorithm; using a class algorithm when creating a program. **Pupils working at greater depth indicated by**: beginning to form algorithms independently by completing challenge activities (see Resource: Robot bop remix – challenge).	• I can reflect on how computational thinking helped me solve problems. Key Vocab: abstraction, algorithm design, computational thinking, decomposition, pattern recognition, remixing Adaptive teaching **Pupils needing extra support** Should be encouraged to write notes in the comments section of the *Activity: Computational thinking skills log*; could watch the *Pupil video: Remixing code* before the lesson as a pre-teaching tool to build familiarity with the key concepts. **Pupils working at greater depth** Should tick multiple boxes on the *Activity: Computational thinking skills log* to show the variety of computational thinking skills used;		

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	should add sound effects or a timer to make the quiz more engaging for the player; could program different backgrounds with code for each question to enhance the visual appeal and improve the experience for the user. **Pupils with secure understanding indicated by:** using decomposition to identify key blocks in a program; utilising the computational thinking skills of decomposition and abstraction when coding; modifying existing code to create a new project; explaining how computational thinking skills help remix a project effectively. **Pupils working at greater depth indicated by**: using computational thinking skills efficiently; modifying and optimising an algorithm for a certain purpose; adding sound effects to make the quiz more engaging; programming different backgrounds with code for each question; critically reflecting on how computational thinking helps solve problems.		