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Online Safety	Computing Systems and Networks	Data Handling	Programming	Creating Media
Year 3 lessons 1- 4 Kapow, lessons 5-6 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** **Beliefs, opinions and facts on the internet (Kapow)** **Objective: To understand how the internet can be used to share beliefs, opinions and facts** ***National Curriculum***	Recap activity https://www.educaplay.com/learning-resources/15642863-online_safety_recap_year_4.html **Managing Online Information** **Lesson 1: What happens when I search online? (Kapow)** **Objective: To describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy** ***National Curriculum***	Recap activity https://www.educaplay.com/learning-resources/15635993-online_safety_recap_year_5.html **Privacy and Security, Health, wellbeing and lifestyle** **Lesson 1: Online protection (Kapow)**	Recap activity https://www.educaplay.com/learning-resources/15642943-year_6_online_safety_recap.html **Self Image and identity** **Lesson 1: Life Online** **Objective: To describe issues online that give us negative feelings and no ways to get help.**

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• ***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 **Key Vocab:** fact, opinion, belief, internet, search engine, accuracy, reliability	• *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	**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 what a strong password is and demonstrate how to create one. • To explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. • To explain what app permissions are and can give some examples. **Key Vocab:** password, strong password, applications, apps, private information, **personal information, in-app purchases, app permissions**	***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.
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**	Recap activity https://www.educaplay.com/learning-resources/15642824-computer_parts.html **CORE UNIT QUESTION: Computing Systems and Networks, Collaborative Learning**	Recap activity https://www.educaplay.com/learning-resources/15610682-spreadsheet.html	Recap activity https://www.educaplay.com/learning-resources/15642970-data_handling_recap_year_6.html

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Lesson 2: What is a network? **Objective: To understand what a network is and understand our school network** ***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 network • to identify which components are connected • To explain which connections are wired or wireless **Key Vocab:** network, wired, wireless, Wi-Fi, device, internet, component, laptop, tablet, desktop, printer, photocopier, server, network switch, wireless access points, network,map, router **Lesson 3: A Website's Journey** **Objective: To understand how the Internet works and explain a website's journey** ***National Curriculum*** • ***U****nderstand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the*	**Lesson 2: Teamwork** **Objective: To understand that software can be used to work online collaboratively** ***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:** software, collaboration, online, teamwork, document, link **Lesson 3: 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*	**CORE UNIT QUESTION Search Engines Computing systems and networks** **Lesson 2: Searching Basics** **Objective: To understand what a search engine is and how to use it** ***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 **Lesson 3: 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*	**CORE UNIT QUESTION Computing Systems and Networks Bletchley Park** **Lesson 2: 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:** Secret, cypher, Pig Latin, code, Scrambled, Data shift cipher, Caesar cipher, Pigpen cypher, acrostic code Nth letter cypher. **Lesson 3: 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*

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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 what the internet is • to understand that the computer I use is connected to the internet via a router • To know that computers have to locate websites • to recognise a website is just a file saved on a computer **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 **Lesson 4: Understanding Packets** **Objective: To understand the role of packets** ***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 explain that routers connect together to send information • To understand that websites are too big to send whole	*opportunities they offer for communication and collaboration* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information* • *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact'* 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, e-mail account, theme, title, multiple choice, text, rating **Lesson 4: 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	*to report concerns about content and contact'* Skills: • Recognise that not everything online is true. • To understand anyone can create a website. To suggest ways of checking the validity of a website. **Key Vocab:** Real, fake, deceive, information, Correct, Incorrect **Lesson 4 : 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 (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. **Key Vocab:** Keywords, TASK. **Lesson 5: Information posters** **Objective: To create an informative poster.** ***National Curriculum.*** • *Use search technologies effectively, appreciate how results*	*decomposing them into smaller parts* • *Use sequence, selection, and repetition in programs; work with variables and various forms of input and output* • *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* • *Select, use and combine a variety of software […] 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:** Lift, Force, Hacking, password, Secure, Chip and PIN, System, Trial and error, combination. **Lesson 4: Bletchley Park**

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• to recognise that each packet will take its own route • **Key Vocab:** packets, routers, connect, information, websites, route, website, homepage, storage, smart devices, phones, tablets, corrupted, server, World Wide Web	**Key Vocab:** survey, share, theme, title, multiple choice, rating, collaboration **Lesson 5: 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 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:** share, spreadsheets, survey form, icon, data, view, freeze, conditional formatting, format, average, numerical data	*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 have a clear poster title. • To type at least five facts. • To choose appropriate pictures, colours and designs. • To consider fair use. • To credit people for information, images and videos I use. **Key Vocab:** Copyright, fair, credit, appropriate, inappropriate.	**Objective: To understand the importance of Bletchley Park to the World War II war effort** **:** ***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 acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact'* Skills: • To know that Bletchley Park was important during World War 2. • To know what the first computer was built for. • To create an information poster about Bletchley Park.

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			Key Vocab: Cipher code, password, secure, brute force hacking, combination, trial and error, chip and pin system.
Managing Online information, Privacy and security, Health , well-being and lifestyle **Lesson 1: When being online makes me upset (Kapow)** **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 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	Managing Online Skills Information **Lesson 1: How do companies encourage us to buy online? (Kapow)** **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*** Skills: • 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, sponsored, in-app purchase, influencer, recommendations, advertisements	**Online Relationships, Online Bullying** **Lesson 1: Online Communication (Kapow)** **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* Skills: • I can understand different types of online communication • I am aware of some of the different types of online communication • I can recognise the positive and negative forms of online communication **Key Vocab:** technology, communication, online communication, emojis, memes, positive contributions, trusted adult, advice, organisations	**Online Relationships** **Lesson 1: Sharing Online** **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* Skills: • 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, screen grab, respect, inappropriate.

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Key Vocab: internet, content, device, Block and report, Privacy settings			
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 2: 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 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 **Lesson 3: Building a paper laptop** **Objective: To decompose a laptop.** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals, including controlling*	Recap activity – https://www.educaplay.com/learning-resources/15623919-network_hardware.html **CORE UNIT QUESTION Further Coding with Scratch** **Lesson 2: Identifying what code does** **Objective: To understand how a Scratch game works by using decomposition to identify key features** ***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 that a sprite may contain more than one script • To identify the parts of a Scratch game • to understand what we mean by decomposition **Key Vocab:** Scratch, quiz, game, code, sprite, features, decomposition, script, code blocks, broadcast block **Lesson 3: Introduction to variables** **Objective: To understand what a variable is and how to make one** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals, including controlling or*	Recap activity – https://www.educaplay.com/learning-resources/15643387-creating_media.html **CORE UNIT QUESTION : Data Handling - Mars Rover** **Lesson 2: 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 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.	Recap activity- https://www.educaplay.com/learning-resources/15643038-computer_parts.html **CORE UNIT QUESTION : Data Handling - Big Data 1** **Lesson 2: 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 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, **Lesson 3: RFID** **Objective: To recognise how RFID is used** ***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*

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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 suggest a laptop's inputs and outputs • To recall that a laptop is made up of many parts • To use logic to explain the purpose of some parts **Key Vocab: CPU, GPU, input, output, RAM, ROM** **Lesson 4: 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. • 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	*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: • To use the 'ask' block in Scratch • to know what a variable means • to make a variable • To store an answer to a question as a variable **Key Vocab:** variables, code block, scratch, project, program, conditional statement, tinker **Lesson 4: Making a variable** **Objective: To understand how to make a variable in Scratch** ***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: • create a variable and use it to store information • I can 'call' a variable within my program • I can identify that variables can be words or numbers **Key Vocab:** variable, Scratch, information, script, variables panel	**Lesson 3: 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: • 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. **Lesson 4: 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	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. **Lesson 4: 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. **Key Vocab:** Column, data, Input RFID, row, spreadsheet. **Lesson 5: Transport Data** **Objective: To analyse and evaluate data** ***National Curriculum***

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		• 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.	• *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 they offer for communication and collaboration.* Skills: • • To identify how RFID helps to solve real world data challenges. • To sort and compare data within a spreadsheet. **Key Vocab:** Algorithm, brand, commuter, contactless, Systems analys
Managing Online Information, Privacy and Security **Lesson 6: Sharing information (Kapow)** **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*	**Managing Online Information** **Lesson 6: Fact, opinion or belief? (Kapow)** **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 acceptable/unacceptable***	**Online Reputation** **Lesson 6: Online Reputation (Kapow)** **Objective: To understand how online information can be used to form judgements** ***National Curriculum*** • ***Understand computer networks including the internet; how they can provide multiple services, such***	**Online Reputation** **Lesson 6: 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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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* <u>Skills:</u> • 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 **Key Vocab: internet of things, smart devices, digital devices, autocomplete**	***behaviour; identify a range of ways to report concerns about content and contact*** <u>Skills:</u> • 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	***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.* <u>Skills:</u> • 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, private information, judgement, Summarise, accurate information, opinion, mini, biography.	***acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact*** <u>Skills:</u> • 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.
<u>**Health, well-being and lifestyle, Online Reputation**</u> **Lesson 1: Rules of social media platforms (Kapow)** **Objective: To understand the rules for social media platforms** ***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected and*	<u>**Managing Online Information**</u> **Lesson 1: What is a bot? (Kapow)** **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***	<u>**Online Bullying**</u> **Lesson 1: Online Bullying (Kapow)** **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*	<u>**Online Bullying**</u> **Lesson 1: 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*

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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 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: social media platforms, age restrictions, digital devices, search functionality**	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, chatbot, computer, program, risks, advantages, implications	*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.* **Key Vocab: Bully, bullying online. Real world, trusted adult organisation.**	*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, screenshot, copy, paste, URL, block and report.
Recap activity – https://www.educaplay.com/learning-resources/15610339-scratch_key_vocab.html **CORE UNIT QUESTION Video Trailers (iPad)** **Lesson 2: Planning a book trailer** **Objective: To plan a book trailer.** ***National curriculum*** • ***S****elect, 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.*	Recap activity – https://www.educaplay.com/learning-resources/15610364-fill_in_the_blanks_scratch_word_definitions.html **CORE UNIT QUESTION : Data Handling Investigating Weather** **Lesson 2: 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.*	Recap activity – https://www.educaplay.com/learning-resources/15643258-scratch_2_0_window.html **CORE UNIT QUESTION : Stop Motion Animation** **Lesson 2: Animation Explored** **Objective: To understand what animation is** ***National Curriculum*** • *Use sequence selection and repetition and programmes work;*	Recap activity – https://www.educaplay.com/learning-resources/15623836-binary_adding_rules.html **CORE UNIT QUESTION :Creating Media History of Computers** **Lesson 2: First Computers** **Objective: To understand how computers have changed and the impact this has had on the modern world** ***National Curriculum*** • *Understand computer networks, including the internet; how they can*

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• *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.* <u>Skills:</u> • 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 **Lesson 3: 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; identify a range of ways to report concerns about content and contact.* <u>Skills:</u> • To frame shots differently to create the effect wanted	• *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.* <u>Skills</u> • 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** **Lesson 3: 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.* <u>Skills:</u> • 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	*with variables and various forms of input and output.* <u>Skills:</u> • 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 Images Moving Images Thaumatrope, Flipbook, Zoetrope Frames. **Lesson 3: 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.* <u>Skills:</u> • To understand and explain what stop motion means. • To understand how to create a short animation • To understand what's onion skinning is • To make small changes to an object to make the object animation smoother.	*provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.* • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* <u>Skills:</u> • To identify how computers have evolved over time. • To understand that computers are everywhere in modern life. • To recognise some of the earliest computers and how they impacted the modern world. **Key Vocab:** Byte, computer, gigabytes, Graphics, kilobytes, megabytes, terrabytes. **Lesson 3: Computers that Changed the World** **it to the class** **Objective: To research one of the computers that changed the world and present information about it to the class.** ***National Curriculum*** • *Understand computer networks, including the internet; how they*

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• To use digital devices to record video or take photos **Key Vocab:** film, key events, storyboard, trailer, video, voiceover **Lesson 4: 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 **Lesson 5: 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*	**Lesson 4: Satellites and Forecasts** **Objective: To understand how weather forecasts are made** ***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 **Lesson 5: Presenting Forecasts** **Objective: To use tablets or digital cameras to present a weather forecast** ***National Curriculum***	**Key vocab:** Animation, Stop motion digital device, Onion skinning. **Lesson 4: 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 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. new line to decompose a story into smaller parts. **Key Vocab:** Animation, Stop motion, frames, Storyboard, decomposition. **Lesson 5: Stop Motion Creation** **Objective: To create stop motion animation** ***National Curriculum***	*can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.* • *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.* • *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.* Skills: • present information about one device that changed the world. • To research information carefully. • To recognise nation is relation is reliable. • To cite and record source is found on the Internet. **Key Vocab:** Computer Devices. Memory Storage. **Lesson 4: Future Computer** **Objective: To design a computer of the future** ***National Curriculum*** • *Use search technologies effectively, appreciate how results are selected*

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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.* <u>Skills:</u> • To add text to a video • 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	• *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.* <u>Skills:</u> • 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	• *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.* <u>Skills:</u> • To create a simple animation following storyboard plan • To change. Plan to recognise when something is too difficult to animate. • To understand the importance of keeping the camera still and making small movements between shots. **Key Vocab:** Animation, stop, motion, character, model, frame, designed, animator, background, decomposition.	*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.* <u>Skills:</u> • To recognise the components of a computer and why they are important. • To identify how computers have evolved over time. To use my understanding of historic computers to design a computer up the future. **Key Vocab:** CPU, GPU, hard drive, operating system, RAM, ROM
<u>Copyright and Ownership</u> **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.**	<u>Health, well-being, and lifestyle</u> **Lesson 6: What is my # tech timetable like?**	<u>Health, well-being, and lifestyle</u> **Lesson 6: Online Health (Kapow)** **Objective: To understand how technology can affect health and wellbeing.**	<u>Privacy and security</u> **Lesson 6: Password Protection** **Objective: To manage personal password effectively**

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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**	**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	***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. **Key Vocab:** Online, Technology, Health, well-being, support, application, organisation, mental health, Mindfulness.	***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.
Online Bullying **Lesson 1: Spikey the Spider (Project Evolve)** **Objective: I can describe appropriate ways to behave towards other people online and why this is important.**	**Copyright and Ownership** **Lesson 1: 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.**	**Managing Online Information** **Lesson 1: Money talks? (Project Evolve)** **Objective: I can describe ways of identifying when online content has been commercially sponsored or boosted, (e.g.**	**Privacy and security** **Lesson 1: Think before you click** **Objective: To be aware of strategies to help be protected online**

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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.* • <u>Skills:</u> • To explain why we should be kind online vs unkind • To know how you should act online • To explain how to make sure you are being kind online **Key Vocab:** appropriate behaviour	***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> • **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	**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* <u>Skills:</u> • **Understand that some online content may be commercially promoted.** • **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**	***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 simple ways to increase privacy settings. • To explain why you should keep software updated • To describe strategies to identify scams. **Key Vocab:** <u>Personal</u> information, financial information, scammers, Phishing, malware, software updates, reliable source, antivirus.

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Recap activity –https://www.educaplay.com/learning-resources/15639108-inputs_and_outputs.html **CORE UNIT** QUESTION Programming **: Scratch** **Lesson 2: 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 systems; solve problems by decomposing them into smaller parts* Skills: • To know that Scratch is a coding application • to predict what they think different codes will do • To explore an application independently • to explain what they have found **Key Vocab:** Tinkering, Programming application, Coding, application, Code, Application, Interface, Sprite, Review, Predict **Lesson 3: Using loops** **Objective: To use repetition (a loop) in a program** ***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:	Recap activity - https://www.educaplay.com/learning-resources/15610682-spreadsheet.html **CORE UNIT QUESTION : Programming 2- Computational Thinking** **Lesson 2: What is Computational Thinking** **Objective: To understand that computational thinking is made up of four key strands** ***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: • can identify the four strands that make up computational thinking. • I can recall that problems can be made easier if I use computational thinking **Key Vocab:** abstraction, algorithm design, computational thinking, decompose, pattern recognition **Lesson 3: Decomposition** **Objective: To understand what decomposition is and how to apply it to solve problems.** ***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.*	Recap activity - https://www.educaplay.com/learning-resources/15644302-what_do_the_keys_do.html **CORE UNIT QUESTION: Programming Music- Sonic Pi** **Lesson 2: Tinkering with Sonic Pi** **Objective: To tinker with a new piece of software** ***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 predict what something you will do. • • To explain what has been found. **Key Vocab:** Sonic Pi, tinker, predict, programming, music, typing, spacing, performance, coding, tutorials, error, command, instructions, debugging, typo. **Lesson 3: Sonic Soundtracks** **Objective: To create a program that plays themed music**	Recap activity - https://www.educaplay.com/learning-resources/15643311-scratch.html **CORE UNIT QUESTION: Programming Intro to Python** **Lesson 2: 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* • *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. **b:** Loop, code, command, patterns, instructions? **Lesson 3: Nested Loops** **Objective: To understand nested loops** ***National Curriculum*** • *Design, write and debug programs that accomplish specific goals,*

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• To understand and explain what a loop is • To recognise when a loop is used • To choose an appropriate loop **Key Vocab:** repetition, loop, program, code **Lesson 4: Making an animation** **Objective: To program an animation** ***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: • To decompose a project • To plan what they want to happen • To select the blocks to make that happen **Key Vocab:** animation, program, decompose, plan, coding blocks, remixing code **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	Skills: • To decompose a problem • To use decomposition to figure out what Scratch code does • To decompose a problem to figure out which code blocks might have been used **Key Vocab:** abstraction, algorithm design, decompose **Lesson 4: Abstraction and pattern recognition** **Objective: To understand what abstraction and pattern recognition mean.** ***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 know how to recognise patterns • To use past experiences to understand how to solve new problems • To understand how to abstract key information **Key Vocab:** abstraction, code, pattern recognition, variable **Lesson 5: Algorithm Design** **Objective: To understand how to create an algorithm and what it can be used for.** ***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.*	***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 use Sonic Pi's basic commands. • Through to include a loop in a program • To debug simple errors in code. **Key Vocab:** Programme, music, Sonic pie, commands, loop, debug, errors, code, mind map, pitch, rhythm, tempo, timbre **Lesson 4: Musical Storytelling** **Objective: To plan a soundtrack program** ***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*	*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:** Loop, code, shape, instructions, command, repeat. **Lesson 4: 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. • To choose Python commands for a purpose.

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• To decompose a problem • To use an algorithm to code a program **Key Vocab:** program, game, algorithm, decompose, code, coding blocks	• *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.* Skills: • To create an algorithm for drawing a square • To use my algorithm to write a script using Scratch • To use pattern recognition to modify my script to draw different shapes Key Vocab: algorithm, input, logical reasoning, output	*with variables and. Various forms of input and outputs.* **Skills:** • To decompose a story. • To plan a programme. • To explain how a programme will add to the story. **Key Vocab:** Soundtrack, programme, decompose, plan, music, pitch, tempo, rhythm, Timbre, command. **Lesson 5: Live Loops** **Objective: To program a soundtrack** ***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 work from a plan.** • **To use a range of programming commands.** • **To explain how a programme enhances the scene.** **Key Vocab:** Live Loops., programme, soundtrack, plan, programming, commands, bugs, loop, play, sleep, repeat, beat, melody, format, rhythm., error, code, pitch, tempo, Timbre,	**Key Vocab:** Code, Command, instructions, input, import. **Lesson 5: 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 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:** Code, Loop, shapes, design, indentation, patterns. **Lesson 6: Coding Mondrian** **Objective: To understand use of using random numbers.** ***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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			• *Use sequence, selection, and repetition in programs; work with variables and various forms of input and output* Skills: • To identify the need for random numbers. • To propose a programme. • To decompose a programme. • To write an algorithm. **Key Vocab:** input, output, remix, algorithm, command, instructions.