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| Gotham Primary Computing Progression Planning |
| What is a Computer? Key Skills |
| EYFS  | Year 1  | Year 2  | Year 3  | Year 4  | Year 5  | Year 6  |
| -Use different digital devices. - Recognise that you can access content on a digital device. - Use a mouse, touchscreen or appropriate access device to target and select options on screen. - Recognise a selection of digital devices. - Recognise the basic parts of a computer, e.g. mouse, screen, keyboard. –Select a digital device to fulfil a specific task, e.g. to take a photo. | - Recognise a range of digital devices. - Select a digital device to fulfil a specific task, e.g. to take a photo. - Name a range of digital devices, e.g. laptop, phone, games console. - Log on to the school computer / unlock the school tablet with support. - Identify the basic parts of a computer, e.g. mouse, keyboard, screen. - Use a suitable access device (mouse, keyboard, touchscreen, switch) to access and control an activity on a computer. - Open key applications independently. - Save and open files with support. - Add an image to a document from a given folder/source with support. | - Recognise what a computer is (input > process > output). - Recognise that a range of digital devices contain computers, e.g. phone, games console, smart speaker. - Explain what the basic parts of a computer are used for. - Identify and use input devices, e.g. mouse, keyboard; and output devices, e.g. speakers, screen. - Open key applications independently. - Save and open files to/from a given folder. - Add an image to a document from a given folder/source. - Resize an image in a document. - Highlight text and use arrow keys. - Capture media independently (e.g. take photos, record audio).  | - Describe what a computer is (input > process > output). - Explain the difference between input and output devices on a computer. - Know where to save and open files (e.g. in shared folder). - Save files with appropriate names. - Use a keyboard effectively to type in text. - Use left-, right- and double-click on the mouse. - Add an image to a document from the internet. - Resize and move an image in a document. - Use a search engine to find simple information. - Recognise that school computers are connected.  | - Recognise that you can organise files using folders. - Explain what a good file name would look like. - Delete and move files. - Use key parts of a keyboard effectively, e.g. shift, arrow keys, delete). - Know how to copy and paste text or images in a document. - Crop an image and apply simple filters. - Use a search engine to find specific information. - Recognise that school computers are connected together on a network. | - Type using fingers on both hands. - Use common keyboard shortcuts, e.g. ctrl C (copy), ctrl V (paste). - Explain what makes a strong password. - Use folders to organise files. - Know how to mute and unmute audio on a computer or tablet. – Recognise that there is more than one search engine, and they may produce different results. - Use a search engine effectively to find information and images. - Know how to search for an application on a computer/tablet. | - Type efficiently using both hands. - Use a range of keyboard shortcuts. - Recognise that different devices may have different operating systems. - Organise files effectively using folders and files names. - Use the advanced search tools when using a search engine to find specific information and images. - Explain the basic function of an operating system. - Recognise common file types and extensions e.g. jpeg, png, doc, wav - Recognise a range of Internet services, e.g. email, VOIP (e.g. Skype, FaceTime), World Wide Web, and what they do. |
| Vocabulary |
| Digital deviceMouseScreenKeyboard | ComputerMouseScreenKeyboardSaveOpenImage | ComputerMouseScreenKeyboardSaveOpenImage | ComputerMouseScreenKeyboardSaveOpenResize Image | ComputerKeyboardShiftArrow KeysDeleteSaveOpenCropSearch engine | ComputerKeyboard shortcutsMuteFilesPassword | ComputerKeyboard shortcutsMuteFilesPasswordSearch engine |

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| Presenting Information & Multimedia |
| EYFS  | Year 1  | Year 2  | Year 3  | Year 4  | Year 5  | Year 6  |
| - Use technology to explore and access digital content. - Operate a digital device with support to fulfil a task. - Create simple digital content, e.g. digital art. - Choose media to convey information, e.g. image for a poster. | - Create digital content, e.g. digital art. - Choose media from a selection (e.g. images, video, sound) to present information on a topic. - Recognise that you can find out information from a website. - Recognise that you can edit digital content to change its appearance. - Select basic tools/options to change the appearance of digital content, e.g. filter on an image / font / size of paintbrush. - Combine media with support to present information, e.g. text and images. | - Create simple digital content for a purpose, e.g. digital art. - Recognise that we can use technology to record and playback audio or take and view photographs. - Apply edits to digital content to achieve a particular effect, e.g. emphasise part of a text. - Present ideas and information by combining media, e.g. text and images. - Explain that you can search for information on the internet. - Plan out digital content, e.g. a simple sketch or storyboard. - Identify the common features of digital content, e.g. title, images. - Recognise that we can use different types of media to convey information, e.g. text, image, audio, video. | - Present ideas and information by combining media independently, e.g. text and images. - Design and create simple digital content for a purpose/audience, e.g. poster. - Edit digital content to improve it, e.g. resize text. - Identify the features of a good piece of digital content. - Explain why we use technology to create digital content. - Recognise why we use different types of media to convey information, e.g. text, image, audio, video. | - Collect, organise and present information using a range of media. - Design and create digital content for a specific purpose, e.g. poster, animation. - Edit digital content to improve it according to feedback. - Identify the features of a good piece of digital content and apply these in own design. - Explain the benefits of using technology to present information. - Know where to find copyrightfree content, e.g. creative commons images. - Collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365, if available. | - Identify and use appropriate hardware and software to fulfil a specific task. - Remix and edit a range of existing and their own media to create content. - Consider the audience when designing and creating digital content. - Recognise the benefits of using technology to collaborate with others - Identify success criteria for creating digital content for a given purpose and audience. - Evaluate their own content against success criteria and make improvements accordingly. | - Select, combine and remix a range of media to create original content. - Consider all steps of the design process when creating content (e.g. identify problem, plan, create, evaluate, share.) - Identify the most effective tools to present information for a specific purpose. - Explain the benefits of using technology to collaborate with others. - Evaluate existing digital content in terms of effectiveness and design |
| Vocabulary |
| DigitalMedia | DigitalImageVideo Sound | DigitalImageVideo Sound | Design PresentCreate | EditDesign PresentCreateCollaborate | EditDesign PresentCreateCollaborateEvaluate | EditDesign PresentCreateCollaborateEvaluateExplain |
| Data |  |
| EYFS  | Year 1  | Year 2  | Year 3  | Year 4  | Year 5  | Year 6  |
| - Access content in a range of formats, e.g. image, video, audio. - Answer basic questions about information displayed in images e.g. more or less. | - Recognise different forms of digital content, i.e. text, image, video and audio. - Collect simple data (e.g. likes/dislikes) on a topic. - Present simple data using images, e.g. number of animals. - Recognise charts and pictograms and why we use them. - Explain information shown in a simple chart or pictogram. - Modify simple charts/pictograms, e.g. add title, item or labels. - Identify the key features of a chart or pictogram. - Collect data on a topic (eye colour, pets etc.) and present in a pictogram or chart. | - Identify different forms of digital content, i.e. text, image, video and audio. - Recognise charts, pictograms and branching databases, and why we use them. - Identify an object using a branching database - Recognise an error in a branching database. - Create a branching database using pre-prepared images and questions - Identify the features of a good question in a branching database. - Independently plan out and create a branching database. - Evaluate a given branching database and suggest improvements.  | - Recognise charts, pictograms and databases, and why we use them. - Present information using a suitable chart - Explore a record card database to find out information. - Use filters in a database to find out specific information. - Name the key parts of a database, e.g. record, field, search. - Answer questions about information in a database. - Name some benefits of using a computer to create charts and databases. - Recognise that search engines store information in databases. | - Draw conclusions from information stored in a database, chart or table. - Design a questionnaire and collect a range of data on a theme. - Choose appropriate formats to present data to convey information. - Recognise that school computers are connected together on a network. - Recognise that the Internet is made up of computers and other digital devices connected together all around the world. - Know that you use a web browser to access information stored on the internet. - Appreciate that you need to use specific software to work with video, images, audio etc. | - Explain the difference between data and information. - Appreciate that different programs work with different types of data, e.g. text, number, video. - Explain the difference between the Internet and the World Wide Web. - Know the difference between a search engine and a web browser. - Explain the basics of how search engines work, and that different search engines may give different results. - Perform complex searches for information using advanced settings in search engines. - Recognise the benefits and risks of sharing data online. | - Recognise what a spreadsheet is and what it is used for. - Explain the difference between physical, mobile and wireless networks. - Use simple formulae in a spreadsheet to find out information from a set of data. - Collect data for a purpose and plan out a spreadsheet to present it effectively, using relevant formulae. - Produce graphs from data in a spreadsheet to answer a question. - Analyse and evaluate data and information in a spreadsheet, chart or database. - Recognise that poor quality data leads to unreliable results.  |
| Vocabulary |
| ImageVideoAudio | PictogramChartData | PictogramChartDataDatabase | PictogramChartDataDatabaseSuitable | PictogramChartDataDatabaseQuestionnaireInternetStored | DataInformationInternetWorld Wide WebSearch EnginesSharing | SpreadsheetAnalyse Evaluate |
| Digital Literacy  |
| EYFS  | Year 1  | Year 2  | Year 3  | Year 4  | Year 5  | Year 6  |
| - Are aware that some online content is inappropriate. - Are aware that information can be public or private. - Know to tell an appropriate adult if they see something on the computer that upsets them. | - Use a simple password when logging on, where relevant. - Explain why we use passwords. - Recognise examples of personal information e.g. name, image. - Know who to tell if concerned about content or contact online. - Recognise that digital content belongs to the person who created it. - Talk about their use of technology at home. | - Remember a simple password to log onto the computer or a website. - Identify rules for acceptable use of technology in school. - Recognise what personal information is and the need to keep it private. - Recognise that spending a lot of time in front of a screen can be unhealthy. - Recognise that some information found online may not be true. | - Explain why we need to keep our password safe. - Recognise that digital content belongs to the person who first created it, but we can give permission for others to use it. - Recognise when to share personal information and when not to. - Recognise that some people lie about who they are online. - Are aware that games and films have age ratings. | - Remember and use an individual password. - Recognise what kinds of websites are trustworthy sources of information. - Recognise the benefits and risks of different apps and websites. - Recognise that the media can portray groups of people differently. - Can rate a game or film they have made and explain their rating. | - Know where to find copyright free images and audio, and why this is important. - Critically evaluate websites for reliability of information and authenticity. - Demonstrate responsible use of online services, and know a range of ways to report concerns. | - Explain what makes a strong password and why this is important at school and in the wider world. - Explain how algorithms are used to track online activities with a view to targeting advertising and information. - Know that there are laws around the purchase of games; the production, sending and storage of images; what is written online; and around online gambling |
| Vocabulary |
| Upset | PasswordTechnology | UnhealthyInformation | SafePermissionRatings | TrustworthyBenefitsRisks | CopyrightEvaluateReliabilityResponsible | Algorithms |
| Programming and Algorithms  |
| EYFS  | Year 1  | Year 2  | Year 3  | Year 4  | Year 5  | Year 6  |
| Program a Beebot to achieve a goal-Complete a simple programme on a computer.  | - Follow a given sequence including forwards, turns and backwards. Predict the outcome of a set of instructions and test the results.- Use symbols to represent an instruction in the correct order. e.g. ↑→ for forward and turn. Write a sequence for others to follow. Know how to clear the code- Know that when I press GO the sequence will run.- Know that when a key (e.g. space bar) is pressed, the sprite/character will move. | - Understand that a sequence of instructions needs to be clear, precise and unambiguous.-Understand that the order in which instructions are given will make a difference to the outcome.- Sequence instructions including forwards, back and turns more efficiently.- In pattern spotting, children recognise which elements of the sequence repeats- Use a number to specify movement rather than repeated commands (e.g. in Scratch Junior forward 4 rather than ↑↑↑↑-Understand how to read and interpret a repeat in loop in an algorithm (set of instructions)-Know that when arrow keys are pressed, direction is determined or an event will happen-Make predictions about sequences of instructions/algorithms-Evaluate programs that are run and debug to solve the problem | -Sequence instructions in the correct order with increasing number of commands.-Understand that a sequence of instructions in computing is called an Algorithm.- Evaluate programs that are run and debug to solve the problem- Spot a pattern in a practical activity – and know which actions/instructions are repeated and which action/instructions are not.- Understand informal notation for showing a move is repeated. E.G [→] x 3 = move right 3 times-Use repeat loops in Scratch to simplify code- Uses robots/sprites on screen to perform tasks or complete instructions/code- Be able to create an animation or game where clicking on certain ‘triggers’ (objects/sprites/keys) will cause something to happen. E.g. animations in PowerPoint- Parallelism – Allow more than one event to happen at the same time e.g. having more than one set of blocks or instructions running at the same time. | - Sequence instructions in the correct order to create an animation sequence, draw a shape or solve a problem.- Be able to assess success of given instructions and identify and correct any errors that occur.- Be able to evaluate the effectiveness of an algorithm written by their peers in class.- Understand what simple loops and repeats are and how they can make a program more efficient.- Pattern spotting - be able to identify which commands need to be repeated and how many times to achieve a desired end.-Use the green flag to start a program and one other ‘yellow hat’-Know that a range of triggers will start an event e.g. space bar, mouse click, press play/go (Use Yellow Hats in Scratch)-Use sensing (the turquoise blocks in Scratch) to make selections. | - Understand and use algorithms which include: • Repeat loops • Event handling • A variety of inputs to control events e.g. space bar, arrow keys etc- Secure understanding of use of simple repeat blocks.-Understand Forever loop means continuous- Use the instruction “repeat until” block including a sensing block to limit the repeating loop Use a repeat until action determined by a variable. e.g.- Use ‘if, then, else’ statements e.g. in a quiz: if answer correct…- Understand what variables are and how to use them and where to place them in a program. (orange blocks in Scratch).  | - understand and use algorithms which include: • Repeat loops • Event handling /inputs • Selection • Variables -Be able to identify bugs in a sequence when program fails. - Read/write nested loops (loops within a loop) e.g. use a repeat loop to draw a square, then put this algorithm inside another loop to create a repeated pattern.- Use a variable as an input to trigger different events such as: in Scratch sending a broadcast in Scratch to other sprites.- Use selection to govern different events using the ‘if / else’ blocks, green blocks and a variable.-Secure understanding what variables are and how to use them. (orange blocks in Scratch). -Understand that the “ask” block is a special pre-programmed variable and be able to use it in a program.-Know and understand what and how to use the list blocks can store lists of data in a scratch program |
| Vocabulary |
| ProgramComputerBeebotSequence | AlgorithmDebuggingSequencingSelection  | AlgorithmDebuggingSequencingRepetitionSelection | AlgorithmDebuggingSequencingRepetitionBlocksSpriteScript | AlgorithmDebuggingSequencingRepetitionVariablesBlocksSpriteScriptCostumeCommand | AlgorithmDebuggingSequencingBlocksSpriteScriptCostumeCommand | AlgorithmDebuggingSequencingRepetitionVariablesBlockSpriteScriptCostumeCommand |
| Our Questions |
|  | How can we create artwork using a computer?How can we record sounds and reflect upon our own work?How do we follow instructions to create a sequence?What is an Algorithm? | Can Technology be used purposefully?Can I use simple algorithms to create my own programs?  | Caught on film; Can you film and edit a stop motion video?Can you program your own race car game? | Can you create a multimedia presentation that is persuasive?How can we find, record, save and retrieve information using search technologies?Can you design and evaluate a historical game with loops and repeats? | What software and digital devices do we need for making our own radio station? How can we advertise this effectively?How do I make a game on Scratch with event handling, repetition and selection?  | Can you create a multimedia presentation to present your findings?How can I do effective internet searches and use the internet safely?How can I use different software to present data?How can I design and code my own game including variables, event handling, repetition and selection? |