JEB - Skills Progression 1

Year	Programming	Data	Understanding Technology	Using technology effectively	Keeping Safe
1	Understand that an algorithm is a series of instructions to achieve an outcome. Create a 'written algorithm story' to direct a person around to achieve a task **Unit 1: Bee Bots** Give and follow instructions, which include straight and turning commands, **one at a time.** Explore a program with errors (in a sequence) given by an adult. Find and correct the errors to become successful Give own simple sequence of instructions to a programmable robot **Unit 2: Bee Bots** Discuss/explore what will happen when instructions are given in a sequence. Give a sequence of instructions to complete a simple task. Instructions use both movement commands and additional commands. (screen turtle, explore 2DIY, Bee Bots)	Know that images give information. Say what a pictogram is showing them. Put data into a program (pictogram – 2 count). Sort objects and pictures in lists or simple tables.	**Technology in the world.** Discuss how technology is used in the world around them. **Websites** Talk about websites they have been on. Explore a website by clicking on buttons, arrows, menus and hyperlinks. (Modelled by and adult) Navigate 'back' by clicking on the 'back' button. Complete a search under the supervision of adults. Explore the use of email using an adult's email account (whole class)	**Unit 1: Graphics (2Simple/colour magic)** Use ICT to generate ideas for their work. Use various tools including brushes, pens, lines, fill, spray and stamps. Use save, retrieve, amend and print. **Unit 2: Text (Word)** Use the spacebar, back space, enter, shift and arrow keys. Start to use two hands when typing. Word process short texts, rather than copying up written work. **Unit 3: Multimedia (2create a story)** Explore range of software and hardware to produce shared outcome **Ongoing:** Selecting appropriate devices or software for a task – e.g. text, images, multimedia (topic related activities)	Make decisions about whether or not statements or images found on the internet are likely to be true. Identify different devices that can go on the internet, and separate those that do not. Identify what things count as personal information. Identify when inappropriate content is accessed and act appropriately Agree rules for online use – e-safety Understand and use 'Log on' with a Password ThinkUKnow (5-7) lessons, Hector Protector

2 JEB - Skills Progression

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2	Write own narrative algorithms with precision and clarity Use the term 'algorithm' **Unit 1: Bee Bot** Use the 'repeat' command within a series of instructions. (e.g. to make the toy create a square movement) Plan a short 'story' for a sprite and write the commands for this. Edit/refine a sequence of commands. **Unit 2: Move the turtle** Generate a sequence of instructions including 'right angle' turns. Debug simple given programs Create a sequence of instructions to generate simple geometric shapes (oblong /square). Correct own errors by discussing how to improve/change their sequence of commands – use the term 'debug' Use of 2Go, Bee Bots, Roamer (screen and floor)	Pose questions, collect data, generate charts and graphs. Retrieve and edit data from a prepared database. Place objects and pictures in a list or a simple table. Make a simple Y/N tree diagram to sort information. Create and search decision trees (Y/N), carol diagrams and branching databases. (2Investigate)	**Email** Recognise an email address. Find the @ key on a keyboard. Contribute to a class email. Open and select to reply to an email as a class. Talk about and use technology linked to a variety of topics (weather, post etc). Identify the purpose of a class Blog and contribute to one. Complete safe searches http://infant.parkfieldprimary.com/ Discuss what is true: http://webfronter.com/rbkc/tomatospider/	**Unit 1: Sound recording** Use sound recorders, at and away from, a computer to capture and playback sound. Use software to record music and sounds. Change sounds they have recorded. Save, retrieve and edit sounds. **Unit 2: eBooks (PowerPoint)** Create a new eBook with a front cover/slide and add or remove pages/slides. Combine text and images within each page and embed sound clips. (maybe even web addresses – URL) Add information about the author and title for publishing. Get quicker at typing using both hands. Use different fonts sizes, colours and effects to communicate meaning. Align text left, right and centre.	Identify obviously false information in a variety of contexts. Recognise that a variety of devices (XBox, PSP etc as well as computers and phones) connect users with other people. Identify personal information that should be kept private. Consider other people's feelings on the internet. Remember and use *Sid's Top Tips* and SMART rules. Agree and use class rules when working online Use of Penguin Pig – discuss online etiquette

JEB - Skills Progression 3

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3	Write own narrative algorithms with precision and clarity Use and understand the term 'algorithm' **Unit 1: Bee Bot** Use the 'repeat' command within a series of instructions. Use the 'if… then' command and predict the result. Talk about the similarities and difference between different coding applications (Roamer, Bee Bots etc). **Unit 2: Logo/Roamer** Write a simple program in Logo to produce a line drawing. Use more advanced Logo programming, including pen up, pen down etc. Write a program to reproduce a defined problem, e.g. geometric shape/pattern. Recognisethat errors can occur (in a prepared program), identify errors, test and modify sequences in programs 2DIY to create games	Select a question to answer. Recognise which information is suitable for their topic. Design a questionnaire to collect information. Collect data to answer a question. Sort and organise information to use in other ways. Construct a branching database. Select an appropriate graph type to represent data collected.	**Unit 1: Blogging** Navigate to view their class/school blog. Recap what a Blog is and understand that their class/school blog can be updated from a range of devices. Comment on and contribute to their class/school blog. Subscribe with an adult's email **Unit 2: Internet research** Type in a URL to find a website. Add websites to favorites. Use a search engine to find a range of media, e.g. images, text. Think of search terms to use linked to questions they are finding the answers for. Talk about the reliability of information on the internet, e.g. the difference between fact and opinion (link to E-Safety)	**Unit 1: Graphics** Acquire, store and combine images from cameras or the internet for a purpose. Use the print screen function to capture an image. Select certain areas of an image and resize, rotate an image. Edit pictures using various tools in paint or photo-manipulation software. **Unit 2: Video (photostory)** Capture photographs as a class (e.g. science activity). Discuss which photographs to keep and why. Arrange clips to make a short film that conveys meaning. Add simple titles and credits. Select text and make simple changes including bold, italic and underlined.	Question the "validity" of what they see on the internet. Use a browser address bar not just search box and shortcuts. Think before sending and suggest consequences of sending/posting. Recognise online behaviours that would be unfair. Keeping information safe and private Begin to understand how to keep safe when sharing information online Know how to report online problems, discuss cyberbullying Recognise the need to choose age appropriate online sites. Discuss viruses Use Digiduck's Big Decision book

4 JEB - Skills Progression

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4	**Unit 1: Lego 'We Do'** Navigate the Scratch programming environment. Create a background and sprite for a game. Add inputs to control their sprite. Use conditional statements (if… then) within their game. **Unit 2: Hopscotch – Create an animation** Why do we need Computing? Discuss everyday things which need instructions. Introduce Hopscotch Use the Monster Hugs program to explore the use of programming language. Introdue rules Create basic shapes using compting language square, rectangle and then make a house. Explore loops. Introduce concept of abilities. Using this make a street. Construct class algorithm to solve any maze. (Try Etch-A-Sketch for ipads!	Recognise tools for collecting data. Create and search a branching database. Sort and organise information to use in other ways. Create a database from information I have selected. Present and analyse data. Discuss and look at QR codes.	**Unit 1: Emails** Log in to an email, open emails, create and send replies. Attach files to an email. Download and save files from an email. Email more than one person and participate in group emails by 'replying to all'. **Unit 2: internet, copyright, online information** Understand keywords to complete and online search on the internet. Understand the use of a tracer. Understand copyright and use copyright-free websites for resources (creative commons) How reliable is online information? www.thedogisland.com Discuss and understand pop-ups in advertising. http://pbskids.org/dontbuyit/advertisingtricks/index.html	**Ipad maintenance** Changing the screen/homepage, keyboard settings, saving battery, switch on/off for apps, investigate newly purchased apps, select printer, copy, paste, open and edit previously saved work. **Unit 1: Multimedia tools** Use variety of multimedia tools. Consider different audience. Provide constructive criticism to evaluate and modify work. Use of Podcasts, blogging (Kidblog), email **Unit 2: Video (iMovie trailer)** Capture video for a purpose. Discuss the quality of videos and chose which to keep and which to re-shoot. Trim and arrange clips to convey meaning. Add titles, credits, slide transitions, special effects and talk about the effect these have on the audience.	Recognise social networking sites and social networking features built into other things (such as online games and handheld games consoles). Keep personal information safe by hiding identity incidents, share rules with others Make judgements in order to stay safe, whilst communicating with others online. Tell an adult if anything worries them online. Understand the procedures for reporting online incidents, share rules with others Identify dangers when presented with scenarios, social networking profiles, etc. Develop a secure password Understand how to protect against viruses ThinkUKnow – cubercafe, Digizen

JEB - Skills Progression 5

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5	**Unit 1: Romaer** Discuss everyday things which need instructions. Review Roamer (on screen) – controls, backgrounds Use the Cave/Rabbit in Woods background – pupils program roamer on screen to help caver/rabbit exscape the screen **Unit 2: Hopscotch – Create a simple game** Discuss everyday things which need instructions. Review Hopscotch from year 4. Focus on abilities. Create abilities from abilities. . Introduce random feature. Create backgrounds Assessment focus: to create a simple game.	Create data collection forms and enter data from these accurately. Know how to check for and spot inaccurate data. Know which formulas to use when I want to change my spreadsheet model. (Excel) Make graphs from the calculations on my spreadsheet. Search a database using and, <, > Excel – sort and interpret data. Use Sharepoint to share data collected	**Unit 1: Internet research** Use advanced search functions in Google, e.g. quotations. Understand websites such as Wikipedia are made by users (link to E-Safety) Use strategies to check the reliability of information, e.g. cross checking with books. Use their knowledge of domain names to aid their judgment of the validity of websites. **Unit 2: Cloud computing** Understand files may be saved off their device in 'clouds' (servers). Upload/download a file to the cloud on different devices. Understand about syncing files using cloud computing folders. Use of Sharepoint, One Drive	**Ipad maintenance** Changing the screen/homepage, keyboard settings, saving battery, switch on/off for apps, investigate newly purchased apps, select printer, copy, paste, open and edit previously saved work. Create a Wordle for display Use of school email Use of a class Blog **Unit 1: eBooks (iBook Author on i-pad)** Create a new ebook with a front cover and add/remove pages/sub pages. Produce a multimedia ebook combining video, pictures, text and audio Attach author data for publishing and publish book. **Unit 2: Sound Recording Garage Band** Collect audio from a variety of sources including own recordings and internet clips. Create a multi-track recording using effects. Edit and refine their work to	Create own class set of rules for using online sites and activities. Judge what sort of privacy settings might be relevant to reducing different risks. Password setting/checker. Judge when to answer a question online and when not to. Be a good online citizen and friend, not a 'digital bystander'. Articulate what constitutes good behaviour online. Find and cite the web address for any information or resource found online. Use different sources to double check information found.

6 JEB - Skills Progression

				improve outcomes.	
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6	**Unit 1: Lego Mindstorms** Introduction to Mindstroms software. Investigate programming simple movements for the Robot. Use Lego League competition table to set short tasks to be solved and completed using the robot. **Unit 2: Scratch *The Ghosty woods*** Use external triggers and infinite loops to control sprites. Use Action Script in 2DIY to change variables. Create and edit variables Use conditional statements Evaluate the effectiveness of their game and debug if required.	Create data collection forms and enter data from these accurately. Know how to check for and spot inaccurate data. Know which formulas to use when I want to change my spreadsheet model. (including: SUM(_:_), =(_*_) Make graphs from the calculations on my spreadsheet. Sort and filter information. Understand that changing the numerical data effects a calculation. Use formula in a spreadsheet to present and analyse information (Class Party planning, design and cost new classroom)	**Blogging** Register for a blog: selecting a url and navigate to their blog once it is created. Alter the theme and appearance of their blog, adding background images etc. Create a new post, save it as a draft and publish it. Embed photos, hyperlinks and videos into posts. Reorganise posts and remove posts they no longer want. Like/follow other blogs and build up their blog content over the year.	**Unit 1: *Animation*** Plan a multi-scene animation including characters, scenes, camera angles and special effects. Use stop-go animation software with an external camera to shoot the animation frames. Adjust the number of photographs taken and the playback rate to improve the quality of the animation. Publish their animation and use a movie editing package to edit/refine and add titles. **Unit 2: Video (iMovie on i-pads)** Storyboard and capture videos for a purpose. Plan for the use of special effects/transitions to enhance their video. Trim, arrange and edit audio levels of video to improve the quality of their outcome. Add titles, credits, transitions, special effects. Export their video in different formats for different purposes .	Craete own class rules for online use. Password creation and checker. Find *report* and *flag* buttons in commonly used sites and name sources of help (Childline, Cybermentors, etc) 'click-CEOP' button and explain to parents what it is for. Discuss scenarios involving online risk. State the source of information found on the internet. Act as a role model for younger pupils, incuding promoting *Sid's Top Tips* and SMART rules