Areas of computing:	Algorithms	Programming and development	Data and data representation	Hardware and processing	Communication and networks	Information technology
	Please refer to Progression Pathways Assessment Framework for progression guidance within each area.					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Curriculum requirements are shown. These must be covered, but additional technology-enhanced learning may, of course, be included.	**Programming - Bee Bots** *Know that users can develop their own programs, and can demonstrate this by creating a simple program in an environment that does not rely on text e.g. programmable robots etc. Executes, checks and changes programs. Understands that programs execute by following precise instructions. Understand what an algorithm is* Give and follow instructions, which include straight and turning commands, one at a time. Explore outcomes when instructions are given in sequence. Introduce the term algorithm and use it in a variety of contexts.	**Information technology - using art software** *Use software under the control of the teacher to create, store and edit digital content using appropriate file and folder names* Use 2Paint a Picture or other appropriate art software on laptop to draw a picture of a toy. Use various tools including brushes, pens, lines, fill, spray and stamps. Use save, retrieve, amend and print.	**Digital literacy – word processing and typing skills.** Word-process short texts. Learn how to use shift key and enter key. **Programming – Espresso Coding.** Use Espresso Coding unit 1a.	**Computer hardware.** *Recognise common uses of information technology beyond school* What's inside a computer? Use Craft Computer to help understand that computers have no intelligence and that computers can do nothing unless a program is executed. Recognise that all software executed on digital devices is programmed. Know about different uses of technology and digital devices.	**Digital literacy – pictograms.** *Use technology purposefully to store digital content* *Use technology purposefully to retrieve digital content* Create pictograms using 2Simple Infant Video Toolkit. Use pictograms to answer questions.	**Programming – Daisy the Dino and Espresso Coding.** *Create simple programs* Use Daisy the dino app on ipads. 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. **Programming – Espresso Coding.** Use Espresso coding unit 1b.
	Esafety *Use technology safely* *Keep personal information private*	E-safety work should be included in every half term – either as part of computing lessons or as part of PSCHE work. Ongoing discussion with children about thei use of technology should be included at appropriate points to ensure that they are using technology in a safe and responsible manner. Use Lee and Kim storybook to learn 4 main rules of e-safety. Ensure that children know what constitutes personal information and understand the importance of keeping this private. Many additional activities are available from CEOP, all relating to the Lee and Kim story. Planning and resures are all available on the shared drive.				

Bramingham Primary School: Computing Curriculum Planning					Year 2

Areas of computing:	**Algorithms**	**Programming and development**	**Data and data representation**	**Hardware and processing**	**Communication and networks**	**Information technology**
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Curriculum requirements are shown. These must be covered, but additional technology-enhanced learning may, of course, be included.	**Programming – BeeBots** *Understand that algorithms are implemented as programs on digital devices* *Understand that programs execute by following precise and unambiguous instructions* *Debug simple programs* *Use logical reasoning to predict the behaviour of simple programs* **Beebots (ipads/hardware)** Programme a Beebot to reach an object including 1 turn. Say and follow instructions. Input multiple instructions. Discuss how to improve/change their sequence of commands. Include and make frequent use of term 'algorithm'. Explain what debugging is and put instructions back in order.	**Programming – Espresso coding** *Understand that programs execute by following precise and unambiguous instructions* *Debug simple programs* *Use logical reasoning to predict the behaviour of simple programs* **Espresso Coding** Use Espresso coding unit 2: Write code to make an object do simple things when keys are pressed on the keyboard; move an object on a tablet using swipes. Program own game. **Hardware** Discuss uses of digital devices. Know that a range of digital devices can be considered a computer. Recognise and use a range of input and output devices: microphones, speakers, keyboards, mouse, camera, screen, printer.	**Information Technology –** video making *Use technology purposefully to organise digital content* **Microsoft Video Editor** Know that digital content can be organised purposefully using specific applications. Recognise common uses of information technology beyond school. **E-Safety** Know that technology should be used safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies Use Jess and friends as a theme. A large part of this area of the curriculum is planned for in PHSE this half term.	**Information Technology –** **desk-top publishing** *Use technology purposefully to organise digital content* *Use technology purposefully to manipulate digital content.* Create a leaflet about food using 2Publish or other appropriate desk-top publishing software.	**Information Technology – images and Programming** *Use technology purposefully to organise digital content* *Use technology purposefully to manipulate digital content.* *Debug simple programs* Take own photos. Use image editing sotware on ipad or Photo Simple on laptops to improve/edit them to achieve a desired end result. **Espresso Coding** Use Espresso Coding unit 2b: Program a button to make an object move; make onscreen objects move when program starts; program own game using click and start events; debug programs when there is a problem.	**Information technology - Email** Use Email Detectives on laptops. Learn how to send emails. Use address books. Know how to reply to an email. Know how to include attachmnents. Understand possible dangers of opening emails from people they do not know. *Link to e-safety.*
	Esafety *Use technology safely* *Know who to go to.*	E-safety work should be included in every half term – either as part of computing lessons or as part of PSCHE work. Ongoing discussion with children about their use of technology should be included at appropriate points to ensure that they are using technology in a safe and responsible manner. Use Lee and Kim storybook to revise 4 main rules of e-safety. Ensure that children understand how to use online technology safely and responsibly, and that they know who to go to and what to do if they encounter something online which is worrying or upsetting. Many additional activities are available from CEOP, all relating to the Lee and Kim story. Planning and resources are all available on the shared drive.				

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Curriculum requirements are shown. These must be covered, but additional technology-enhanced learning may, of course, be included.	**Information technology** *Design and create content* *Present information* **Information technology – Book Creator** Create a new eBook with a front cover and add or remove pages. Combine text and images within each page and embed sound clips. 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.	**Computer science - Programming** *Write programs that accomplish specific goals* *Use sequence in programs* **Daisy the Dino** 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 (Move the turtle, Daisy Dino, Bee Bots etc). **Information Technology** Create historical information poster (about Stone Age?) using Pages.	**Digital literacy** *Use technology responsibly* **Esafety** *Identify a range of ways to report concerns about contact* **Blogging** Create a class blog. Understand that their class blog can be updated from a range of devices. Comment on their class blog. Discuss who can comment on blogs; who can make contact via other online means. Ensure that children know what to do if they were concerned about online contact.	**Information technology** *Use a variety of software to accomplish given goals* **Garageband** Make sound recordings using Garageband on ipads. Capture and play back sound using different types of sound recorders. Use software to record music and sounds. Combine and manipulate sounds using Garageband or other appropriate app or software. Save, retrieve and edit sounds. **Data** How do computers store data? Look at binary numbers; know that computers store all information digitally. Produce a booklet or sheet to show how data is	**Information technology** *Collect information* *Present information* **Databases** Design a questionnaire to collect information. Collect information to put into a data table. Use 2Simple Infant Video Toolkit on laptops. **Terry the Turtle** Use on laptops (Terry the Turtle) or appropriate ipad app. 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.	**Information technology** *Use search technologies effectively* **Internet research and e-safety** Type in a URL to find a website. Add websites to favourites. Know where the address bar is. Understand what a search engine does. 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. Start to judge reliability of information on the internet, e.g. the difference between fact and opinion (link to E-Safety). Know that internet is unregulated; anyone can create a

		Include use of text boxes and images.	**Programming** Espresso Coding unit 3a.	stored (use Pages or other suitable software or app).	**Presentation software** Create presentation about Judaism using Powerpoint (on laptops) or Keynote (on ipads). Choose appropriate transitions and screen backgounds. Consider effect of using different font styles and sizes.	website. **Popplet** Discuss and share uses of technology. **Programming** Espresso Coding unit 3b.
	Esafety *Use technology safely.* *Know who to go to if they feel worried or upset by something seen online.* *Question the validity of internet content.*	E-safety work should be included in every half term – either as part of computing lessons or as part of PSCHE work. Ongoing discussion with children about thei use of technology should be included at appropriate points to ensure that they are using technology in a safe and responsible manner. Use Lee and Kim storybook to revise 4 main rules of e-safety. Ensure that children understand how to use online technology safely and responsibly, and that they know who to go to and what to do if they encounter something online which is worr ying or upsetting.Many additional activities are available from CEOP, all relating to the Lee and Kim story. Planning and resurces are all available on the shared drive. 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.				

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Curriculum requirements are shown. These must be covered, but additional technology-enhanced learning may, of course, be included.	**Information technology** *Select a variety of software to accomplish given goals* *Present data* **Animation** **Use Zu3D on laptops or animation app on ipads.** Children plan what they would like to happen in their animation. Take a series of pictures to form an animation. Move items within their animation to create movement on playback. Edit/improve their animation.	**Information technology** *Select a variety of software to accomplish given goals* *Analyse information* *Evaluate information* *Collect data* *Present data* **Branching databases** Create and search a branching database using Ask Oscar. Use it to ask and answer a range of questions. **Internet** What is the internet and how does it work? What is a URL? Use Pic Collage to create information sheet showing what a URL is. Use Book Creator to create an ebook about the internet and what it actually is.	**Digital literacy** *Understand the opportunities computer networks offer for communication* *Select, use and combine internet services* *Identify a range of ways to report concerns about content* *Recognise acceptable/unacceptable behavior* **Emails and safety** Recap use of email (include links to safety). Discuss other means of online communication and collaboration. Know advantages and possible pitfalls. Include video conferencing – using Skype or other suitable software. (Ideas: could video-conference with a historical or fictional character, or with an online expert, or with children or adults in another school).	**Information technology** *Select a variety of software to accomplish given goals* **Movie creation** Use imovie. 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. **2DIY – game** Use 2DIY to create a platform game.	**Computer Science** *Design programs that accomplish specific goals* *Design and create programs* *Debug programs that accomplish specific goals* *Use repetition in programs* *Use logical reasoning to detect and correct errors in programs* **Espresso Coding** Unit 5a **Pages – booklet** Use Pages or Word to revise and improve word processing skills – link to work in English or other subjects.	**Computer Science** *Design programs that accomplish specific goals* *Design and create programs* *Debug programs that accomplish specific goals* *Use repetition in programs* *Use logical reasoning to detect and correct errors in programs* **Scratch** **Scratch** *Racing car* 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. **Photo Simple and Word Clouds** Take photos and edit using Photo Simple to create desired end result. Create word clouds using app. Combine photos and

						word clouds to create collage.

| | **Esafety**
Use technology safely.
Know who to go to if they feel worried or upset by something seen online. | E-safety work should be included in every half term – either as part of computing lessons or as part of PSCHE work. Ongoing discussion with children about their use of technology should be included at appropriate points to ensure that they are using technology in a safe and responsible manner.
Review safety rules and principles. Use Kara, Winston and the Smart Crew videos to ensure that children know rules of safety:
• What should you accept?
• What is reliable?
• What should you keep safe?
• Who should you tell?
• Be careful when meeting up.
These areas should be covered throughout the year. Clicker versions of support resources are available online, as well as oter versions, on the Childnet site. |

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Curriculum requirements are shown. These must be covered, but additional technology-enhanced learning may, of course, be included.	**Digital literacy** *Identify a range of ways to report concerns about content* *Recognise acceptable/unacceptable behaviour* **Internet** State the source of information found on the internet using web page references. Understand importance of copyright. Understand how to effectively use search engines, and have some awareness of how search results are selected, including that search engines use 'web crawler programs'. Use QR codes to find top tips. **3D modelling** Use Google Sketchup to carry out 3D modelling; know benefits and uses of 3D modelling in real life. (Possibly create a virtual art gallery, and use this to store digital versions of	**Information technology** *Select a variety of software to accomplish given goals* **Computer Science** *Design programs that accomplish specific goals* *Design and create programs* *Debug programs that accomplish specific goals* *Use repetition in programs* **Ebooks** Create a new ebook with a front cover and add/remove pages/sub pages. Produce a multimedia ebook combining video, pictures, text and audio. **Espresso Coding** Unit 5a	**Computer Science** *Debug programs that accomplish specific goals* *Use repetition in programs* *Control or simulate physical systems* **Programming – Cargo-Bot** Use Cargo-bot (on ipads) to develop knowledge of algorithms. Children work at own pace through series of increasingly complex challenges. **Sound recording** Use Garageband to record raps. *Optional:* *Use 2Simple Music Toolkit*	**Information technology** *Select a variety of software to accomplish given goals* *Analyse information* *Evaluate information* *Collect data* *Present data* **Databases** Use Victorian Crime and Punishment database (E2BN) to find answers to questions. Create own database using 2Investigate(eg. of Victorian inventions) Know how to check for and spot inaccurate data. **Spreadsheets** Know what a spreadsheet is and how to use it to perform simple calculations. Know how to create simple formulae and some basic functions (eg. SUM). Use spreadsheet to explore some simple mathematical models. Make graphs from data	**Information technology** *Select a variety of software to accomplish given goals* **Computer Science** *Control or simulate physical systems* **Film making** Write TV adverts. Record these at Elearning Centre – use a range of devices to create final result (TV cameras, ipads, Mac computers) **Sensors** Use sensors in science to monitor and record data (eg. Temperature, lights, sound). Discuss uses of sensors in real-life situations.	**Computer Science** *Design programs that accomplish specific goals* *Design and create programs* *Debug programs that accomplish specific goals* *Use repetition in programs* *Use logical reasoning to detect and correct errors in programs* **Espresso Coding** Unit 5a **Editing pictures** Consider impact of technology on use of pictures in range of situations. Know that pictures can be digitally manipulated and do not necessarily show a real situation. Use a range of filters and effects including crop and colour saturation. **Keynote** Create Keynote slideshow about current topic. Include hyperlinks.

			held within a spreadsheet.		
	Esafety *Use technology safely.* *Know about flag and report buttons in commonly used sites and other sources of help.*	E-safety work should be included in every half term – either as part of computing lessons or as part of PSCHE work. Ongoing discussion with children about their use of technology should be included at appropriate points to ensure that they are using technology in a safe and responsible manner. Discuss use of online technologies. Find *report* and *flag* buttons in commonly used sites and name sources of help (Childline, Cybermentors, etc) Discuss scenarios involving online risk. Use CEOP CyberCafe. Lesson plans and other resources are on the shared drive. Sharing a photo online rules. Safe messaging.			

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Curriculum requirements are shown. These must be covered, but additional technology-enhanced learning may, of course, be included.	**Digital literacy** *Be discerning in evaluating digital content* **Internet searching** State the source of information found on the internet using web page references. Understand importance of copyright. Know that the internet is unregulated and that it is important to evaluate and question content in order to be a discerning user of the internet. Understand the importance of copyright. Use Comic Life to create a guide to good searching. *Optional: Word processing* *Revise word processing skills. Use Word to develop writing (link with English) – make good use of all main features of a Word Processor.*	**Information technology** *Combine a variety of software to accomplish given goals* *Select, use and combine software on a range of digital devices* **Animation** Plan a multi-scene animation including characters, scenes, camera angles and special effects. Use stop-go animation (on ipad 2s if available – otherwise use Zu3D) 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. **Programming** Use Espresso Coding unit 6a.	**Computer Science** *Solve problems by decomposing them into smaller parts* *Use selection in programs* *Work with variables* *Use logical reasoning to explain how some simple algorithms work* *Use logical reasoning to detect and correct errors in algorithms* **Programming** Use Scratch to create own game including sprites, backgrounds, scoring and/or timers. (Ghostly Woods game or Temple Run as possible extension for more able) Conditional statements, loops, variables and broadcast messages. Game finishes if the player wins or loses and the player knows if they have won or not. Evaluate the effectiveness of their game and debug if required.	**Digital literacy** *Understand the opportunities computer networks offer for collaboration* **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	**Information technology** *Combine a variety of software to accomplish given goals* *Select, use and combine software on a range of digital* **Multimedia work** Plan and create DVD for new starters to school. Film clips and take still images; edit together to create final film. Add credits, music and title. Export to format playable on DVD. *Optional:* *Use Geoguessr – link with geography.*	**Computer Science** *Solve problems by decomposing them into smaller parts* *Use selection in programs* *Work with variables* *Use logical reasoning to explain how some simple algorithms work* *Use logical reasoning to detect and correct errors in algorithms* **Programming** Espresso coding unit 6b

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Discuss use of online technologies. Find *report* and *flag* buttons in commonly used sites and name sources of help (Childline, Cybermentors, etc)
Discuss scenarios involving online risk. Use CEOP CyberCafe. Lesson plans and other resources are on the shared drive.
Sharing a photo online rules.
Safe messaging.
Optional - create Esafety concept cartoon. |