



Computing Lesson progression and Overview

Key stage 1

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions (OBJ1)
- create and debug simple programs (OBJ2)
- use logical reasoning to predict the behaviour of simple programs (OBJ3)
- use technology purposefully to create, organise, store, manipulate and retrieve digital content (OBJ4)
- recognise common uses of information technology beyond school (OBJ5)
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. (OBJ6)

	Year 1	Explanation of Activity	Objective(s) covered
1	Bee Bots, Bee Bot app, Kaleido free (drawing app)	<p>Pupils will program Bee Bot toys to make the robot move using simple instructions. Pupils will make the Bee Bot move in a square, move around an obstacle course, they will modify the instructions/code and understand what debugging means.</p> <p>Pupils will use the Bee Bot app to compliment this activity and complete more complicated code to make the Bee move around a course.</p> <p>Kaleido free allows the pupils to make colourful drawings, play a film back of the drawing coming to life, saving the drawings to the Ipad.</p>	<p>(OBJ1)</p> <p>(OBJ2)</p> <p>(OBJ3)</p> <p>(OBJ4)</p>
2	Cursive script app, handwriting app	Pupils will use this app to trace shapes, numbers and letters and words in lower and upper case. This helps improve handwriting.	
3	Chatterpix, take a photograph and record and play sound Take photographs and use in Pic Collage	Chatterpix will allow pupils to create their own content by making their own drawing or a photograph come to life by adding a mouth and through a microphone recording their voices.	(OBJ4)

		<p>Pic Collage will allow for pupils to retrieve saved photographs and other images or take new ones and create collage with multiple layers.</p> <p>Pupils will have a basic understanding of how cartoons and websites etc. are created away from the classroom.</p>	(OBJ5)
4	Drawing app Brushes, Book Creator	<p>The drawing app brushes allow pupils to create digital drawings/paintings relevant to their current topic. Starting with simple line drawings, pupils will progress to using brushes with various effects to include pastel, watercolour, etc. Pupils will learn how to save their work in photos and retrieve their images as well as to import in to Book Creator. Pupils will make an e book using Book Creator, they will understand the concept of an e book. They will add a title and their name and a drawing on the front cover relating to their current topic.</p>	(OBJ4)
5	Saving pictures from the internet safely and importing into Book Creator, add drawings to Book Creator	<p>Using safari and a google search pupils will understand how to safely use a search engine.</p> <p>Pupils will gain a basic understanding of how information is published online and how it is accessed.</p> <p>Pupils will search for images suitable for their topic and understand the appropriate images as opposed to fantasy drawings and Photoshopped images. Images will be saved to the Ipad.</p> <p>Pupils will import the saved photographs to their E-book. They will add text and sound files to enhance the photos.</p> <p>On a separate page pupils will take photographs directly from the app as well as add a short movie clip.</p> <p>Pupils will be aware of the need to ask permission from the person they will be photographing/filming.</p> <p>They will be made aware of the need for keeping personal information private if the work were to be published.</p> <p>Pupils will understand the need to talk to an adult if they see content online that they are unhappy or uncertain about.</p>	<p>(OBJ4)</p> <p>(OBJ5)</p> <p>(OBJ6)</p>

6	Learn basic coding using Hopscotch	<p>Pupils will learn the basics of coding with Hopscotch by triggering characters to move jump or spin when the Ipad 'hears a sound', 'is shaken', 'is tapped' etc.</p> <p>Pupils will be able to use pre made code blocks to make a chosen character draw when the pupil draws with their finger on the screen and other code blocks such as creating fireworks and sounds.</p> <p>Pupils will understand that this app can be used to create both simple and complex games.</p>	(OBJ1) (OBJ2) (OBJ3)
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Autumn Term 1, 2021

	Year 2	Explanation of Activity	Objective(s) covered
1	Bee Bot app, Daisy The Dino	Daisy the Dino allows pupils to code a Dinosaur to complete a number of tasks before going into free play mode where pupils will create their own code. Pupils will become familiar with simple code, deleting code, repeating code, debugging and algorithms.	(OBJ1) (OBJ2) (OBJ3)
2	Drawing apps to include brushes, Scratch Junior introduction	Pupils will use Scratch Junior using code to move a character (sprite) to move on a background (stage). Pupils will use ready-made stripes as well as drawing their own to create a simple story.	(OBJ1) (OBJ2) (OBJ3)
3	Scratch Junior,	Pupils will code multiple sprites and record sound for each character to create a story with different backgrounds.	(OBJ1) (OBJ2) (OBJ3) (OBJ4)
4	Book Creator The Fire of London, using the internet safely to find suitable photos	Pupils will use google searches to find specific images appropriate for their age group and their project. They will note the source of their images and write information to go with that image to use later in their e book.	(OBJ4)
5	Book Creator The Fire of London	<p>Using book creator pupils will collate the Fire of London images, with captions. Pupils will have a basic grasp of Graphic Design in-order to make the e-book easy to read. The book will have a title page with the a photograph and their name. At least 4 pages will have a combination of photographs, text, sound recordings and a photograph of the pupils drawings/classroom displays.</p> <p>Pupils will understand how e books are made, published. Pupils will understand the need for keeping personal details private if an e book were to be made public.</p>	(OBJ4) (OBJ5) (OBJ6)

6	Puppet Pals	<p>Puppet pals will allow pupils to create a story based on their topic of study. The resulting film will include photographs of the pupils which are cut out and used as animated characters which can interact with supplied cartoon characters and backgrounds. Extra characters and backgrounds can be saved from google images to illustrate their topic.</p> <p>Pupils will create a simple story board as a guide. Pupils will add narration to their film before saving as a Puppet Pals file and exporting as a .mov file.</p> <p>Pupils will gain a basic understanding of how cartoons and films are made.</p>	(OBJ4) (OBJ5) (OBJ6)
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Key stage 2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts (OBJ1)
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output (OBJ2)
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs (OBJ3)
- 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 (OBJ4)
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content (OBJ5)
- 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 (OBJ6)
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. (OBJ7)

	Year 3	Explanation of Activity	Objective(s) covered
1	Scratch, create an interactive maze puzzle game	Pupils will use Scratch Junior to code a character (sprite) to navigate a maze reaching a target and triggering a 'you win' message. This game will use multiple Sprites and Stages.	(OBJ1) (OBJ2) (OBJ3)
2	Scratch continued	Pupils will design and code their own game in Scratch.	(OBJ1) (OBJ2) (OBJ3)
3	Hopscotch, car racing game	Pupils will code a background image of racing car circuit. Pupils will code a racing car to move around a track. The car will need to avoid obstacles and reach the finishing line.	(OBJ1) (OBJ2) (OBJ3)
4	Hopscotch, pupils will design their own game	Pupils will research existing computer games. Pupils will design their own game with a target audience of 6 – 7 year olds.	(OBJ1) (OBJ2) (OBJ3)
5	Stop frame animation using Istop Motion, use simple drawings cut out as well as models to illustrate current topic	Pupils will look at various example of animations and techniques. They will create stop frame animations using 2d drawn paper cutouts and backgrounds. Animations will be based on their current topic.	(OBJ5)
6	Stop frame animation using Istop Motion continued	Animations will be exported to Imovie and titles and narration will be added. Understand different platforms where the animations can be published.	(OBJ5) (OBJ7)

	Year 4	Explanation of Activity	Objective(s) covered
1	Imovie using green screen, pupils will appear in their film about their current topic	Pupils will look at examples of short documentary films and news reports online. Pupils will create a news style report based on their current topic. A selection of photographs will be saved from Google images and imported to Imovie.	(OBJ5) (OBJ6) (OBJ7)
2	Imovie using green screen continued	In pairs pupils will film themselves in front of a green screen before adding title credits and music with Imovie.	(OBJ5) (OBJ6) (OBJ7)
3	Control Technology using Lego robots.	Look at how similar sensors are used in the home, work places and schools. Pupils will gain an understanding of Control Technology and how sensors and motors are used. Program the robots to move across a large drawn map – use a number of sensors to avoid obstacles etc. Use ultrasonic, infrared sensor and touch sensors	(OBJ1) (OBJ2) (OBJ3)
4	Control Technology using Lego robots continued	Fine tune the Lego Mindstorms code to move across the map accurately and park the robot, using the sensors. Record the project with photos and film using Comic Life or Imovie.	(OBJ1) (OBJ2) (OBJ3)
5	Hopscotch, Spiral draw game	Pupils will use Hopscotch to create a Spiral Draw game. They will add emojis, and use codes: create a clone, repeat forever, rotate degrees, add coordinates etc. The result will be a drawing game that creates swirling patterns. Pupils will swap the emojis for text and experiment with code.	(OBJ1) (OBJ2) (OBJ3)
6	Hopscotch, code to create drawn animations/info graphics to illustrate their current topic	Pupils will code with Hopscotch to create an animated info graphic, for example: a weather report with moving sun, clouds and other graphics.	(OBJ1) (OBJ2) (OBJ3)

Autumn Term 2, 2021

	Year 5	Explanation of Activity	Objective(s) covered
1	Hopscotch, Crossy Road	Pupils will add code to a number of Sprites to create a complex interactive Crossy Road game. The pupils will understand how to debug and modify their code and use creativity and problem solving to complete their game.	(OBJ1) (OBJ2) (OBJ3)
2	Hopscotch, Crossy Road continuation	Pupils will keep adding to this game, adding roads and landscapes in the background, adding sounds. They will be able to create a two player game with two sets of arrows (controllers) to move different emojis.	(OBJ1) (OBJ2) (OBJ3)
3	Imovie, The Solar System	Pupils will write a story board about the Solar System. They will research and choose the	(OBJ5)

		most appropriate images to illustrate their documentary film being careful not to use photoshopped images. Pupils will be guided to use age appropriate educational and museum websites to get accurate historical facts and relevant images. They will populate the timeline with the images and add titles, subtitle and credits.	
4	Imovie, The Solar System	In pairs pupils will add a narration to the film and suitable background music before saving as an Imovie file and exporting as a .mov file. Understand platforms that can host films.	(OBJ7)
5	Comic life, Create worksheet/poster to compliment The Solar System film	Using Comic Life pupils will create a poster to advertise their Solar System film. Understand platforms that can host documents.	(OBJ5) (OBJ7)
6	Hopscotch, piano keyboard	Pupils will make a musical instrument. Assign musical notes to their Letters. When the letter C is tapped – play the musical note C. Code graphics to make the game visually appealing.	(OBJ1) (OBJ2) (OBJ3)

Autumn Term 2, 2021

	Year 6	Explanation of Activity	Objective(s) covered
1	Hopscotch, more complex Geometry Dash game	Following on from Crossy Road, the Geometry Dash game will allow pupils to create the appearance a rolling background. There will be opportunity to modify the Graphics and code to make unique games.	(OBJ1) (OBJ2) (OBJ3)
2	Hopscotch, design game	Based on previous skills pupils will design a new game using the 'When Ipad is tilted' code as a starting point. Pupils will tilt the ipad to make the 'hero' bump into sprites to gain points and avoiding other objects. Add and subtract points.	(OBJ1) (OBJ2) (OBJ3)
3	Imovie, World War 2 propaganda	Pupils will write a story board on a specific area of WW2. They will research and choose the most appropriate images to illustrate their documentary film being careful not to use photoshopped images. Pupils will be guided to use age appropriate educational and museum websites to get accurate historical facts and relevant images. They will populate the timeline with the images and add titles, subtitle and credits.	(OBJ5) (OBJ7)
4	Imovie, World War 2 propaganda	In pairs pupils will add a narration to the film and suitable background music before saving as an Imovie file and exporting as a .mov file.	
5	Create a website using Google Sites on Chromebooks	Pupils will use Google Sites to create a website based on their current topic. This could showcase a collection of pupils saved work to include WW2 propaganda films, A newspaper	(OBJ4) (OBJ5) (OBJ6) (OBJ7)

		style worksheet created using Comic Life as well as including written work and photographs of drawings etc. Include external hyperlinks.	
6	Create a website using Google Sites on Chromebooks	Pupils will understand the need to keep personal information private. Pupils will research other websites to decide what works well and to make the navigation of their own website clear.	(OBJ4) (OBJ5) (OBJ6) (OBJ7)