

Yearly Overview

Subject: Computing

Year Group: 1

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	Improving mouse skills	Algorithms Unplugged	Programming Bee Bots (option 1)	Introduction to Data	Digital Imagery	Rocket to the Moon
Link to programme of study	Computer systems and networks	Programming	Programming	Data handling	Creating media	Skills Showcase
Composite Knowledge	<p>To know that “log in” and “log out” means to begin and end a connection with a computer.</p> <p>To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art.</p> <p>To know that passwords are important for security.</p>	<p>To understand that an algorithm is when instructions are put in an exact order.</p> <p>To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing.</p> <p>To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing.</p> <p>To know that we call errors in an algorithm ‘bugs’ and fixing these ‘debugging’.</p>	<p>To understand the basic functions of a Bee-Bot.</p> <p>To know that you can use a camera/tablet to make simple videos.</p> <p>To know that algorithms move a Bee-Bot accurately to a chosen destination.</p>	<p>To know that charts and pictograms can be created using a computer.</p> <p>To understand that a branching database is a way of classifying a group of objects.</p> <p>To know that computers understand different types of ‘input’.</p>	<p>To understand that holding the camera or device still and considering angles and light are important to take good pictures.</p> <p>To know that you can edit, crop and filter photographs.</p> <p>To know how to search safely for images online.</p>	<p>To know that when we create something on a computer it can be more easily saved and shared than a paper version.</p> <p>To know some of the simple graphic design features of a piece of online software.</p> <p>To know that a spreadsheet is an electronic ‘table’ for sorting data.</p>
Key Concepts and Key skills (Component / intentional knowledge - what they need to understand)	<p>Digital Literacy and Online Safety Logging in and saving work on their own account.</p> <p>Computer Science Learning where keys are located on the keyboard. Learning how to explore and tinker with hardware to find out how it works.</p> <p>Information Technology Using a basic range of tools within graphic editing software. Developing control of the mouse through dragging, clicking and resizing of images to create different effects. Developing understanding of different software tools. Recognising devices that are connected to the internet.</p>	<p>Computer Science - Computational Thinking Recognising that some devices are input devices and others are output devices. Learning that decomposition means breaking a problem down into smaller parts. Using decomposition to solve unplugged challenges. Developing the skills associated with sequencing in unplugged activities. Following a basic set of instructions. Assembling instructions into a simple algorithm. Learning to debug instructions when things go wrong. Learning to debug an algorithm in an unplugged scenario.</p>	<p>Computer Science Learning how to explore and tinker with hardware to find out how it works. Learning how to operate a camera to take photos and videos. Using decomposition to solve unplugged challenges. Using logical reasoning to predict the behaviour of simple programs. Developing the skills associated with sequencing in unplugged activities. Following a basic set of instructions. Assembling instructions into a simple algorithm. Programming a floor robot to follow a planned route. Learning to debug instructions when things go wrong. Using programming language to explain how a floor robot works. Learning to debug an algorithm in an unplugged scenario.</p> <p>Information Technology Taking and editing photographs.</p>	<p>Computers Science: Learning how to explore and tinker with hardware to find out how it works. Recognising that some devices are input devices and others are output devices. Learning where keys are located on the keyboard.</p> <p>Information Technology Developing control of the mouse through dragging, clicking and resizing of images to create different effects. Developing understanding of different software tools. Recognising devices that are connected to the internet. Understanding that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc. Using data representations to answer questions about data. Using software to explore and create pictograms and branching databases.</p>	<p>Computer Science Learning how to explore and tinker with hardware to find out how it works. Learning where keys are located on the keyboard. Learning how to operate a camera to take photos and videos. Developing the skills associated with sequencing in unplugged activities.</p> <p>Information Technology Using a basic range of tools within graphic editing software. Taking and editing photographs. Developing control of the mouse through dragging, clicking and resizing of images to create different effects. Developing understanding of different software tools. Searching and downloading images from the internet safely.</p> <p>Digital Literacy and Online Safety When using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable.</p>	<p>Computer Science Learning where keys are located on the keyboard. Learning how to operate a camera to take photos and videos. Using logical reasoning to predict the behaviour of simple programs. Developing the skills associated with sequencing in unplugged activities. Following a basic set of instructions. Assembling instructions into a simple algorithm. Learning to debug instructions when things go wrong. Learning to debug an algorithm in an unplugged scenario.</p> <p>Information Technology Using a basic range of tools within graphic editing software. Taking and editing photographs. Developing control of the mouse through dragging, clicking and resizing of images to create different effects. Developing understanding of different software tools. Recognising devices that are connected to the internet. Understanding that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc.</p> <p>Digital Literacy Logging in and out and saving work on their own account.</p>
Learning objectives	<p>Lesson 1: To log into a computer and access a website.</p> <p>Lesson 2: To develop mouse skills.</p> <p>Lesson 3: To use mouse skills to draw and edit shapes.</p> <p>Lesson 4: To draw a scene from a story using digital tools.</p> <p>Lesson 5: To create a self-portrait using digital techniques.</p>	<p>Lesson 1: To understand what an algorithm is.</p> <p>Lesson 2: To follow instructions precisely to carry out an action.</p> <p>Lesson 3: To understand that computers and devices around us use inputs and outputs.</p> <p>Lesson 4: To understand and be able to explain what decomposition is.</p> <p>Lesson 5: To know how to debug an algorithm.</p>	<p>Lesson 1: To explore a new device.</p> <p>Lesson 2: To create a demonstration video.</p> <p>Lesson 3: To plan and follow a set of instructions precisely.</p> <p>Lesson 4: To program a device.</p> <p>Lesson 5: To create a program.</p>	<p>Lesson 1: To represent data in different ways.</p> <p>Lesson 2: To use technology to represent data in different ways.</p> <p>Lesson 3: To collect and record data.</p> <p>Lesson 4: To sort data.</p> <p>Lesson 5: To design an invention to gather data.</p>	<p>Lesson 1: To understand and create a sequence of pictures.</p> <p>Lesson 2: To take clear photos.</p> <p>Lesson 3: To edit photos.</p> <p>Lesson 4: To search for and import images.</p> <p>Lesson 5: To create a photo collage.</p>	<p>Lesson 1: To recognise that digital content can be represented in many forms.</p> <p>Lesson 2: To design a rocket.</p> <p>Lesson 3: To sequence a set of instructions.</p> <p>Lesson 4: To build a rocket.</p> <p>Lesson 5: To add data to a table or spreadsheet.</p>
Vocabulary	account, clipart, computer, log on/off, password,	algorithm, bug, computer, debug, decompose,	algorithm, Bee-Bot, computing code,	categorise, chart, computer, data,	crop, delete, download, drag and drop, editing	computer, program, create, data, digital,

	resize, screen (monitor), software, tools, username	device, input, instructions, output, solution	computer program, explain, explore, instructions, predict, tinker video	information, label, pictogram, record, sort, table, text	software, image, import, resize, save as, search engine, sequence, smart device, storage space, visual effects	content, e-document, folder, list, save, sequence, share, spreadsheet
Links to Prior Knowledge	EYFS: Computing systems and networks 1: Using a computer	EYFS: Programming 1: All about instructions	EYFS: Programming 2: Programming Bee-Bots	EYFS: Data handling: Introduction to data	EYFS: Computing systems and networks 2: Exploring hardware	EYFS: Computing systems and networks 1: Using a computer
Key knowledge for assessment	What does log in and log out mean? What can you do with the computer mouse / trackpad? Why are passwords important?	What is an algorithm? What is a decomposition? What is debugging? What is a 'bug' in a program?	What are the functions of a Bee-Bot? How can you use a camera/tablet to make simple videos? What do algorithms do to a Bee-Bot?	How can charts and pictograms be created using a computer? What is a branching database? How do computers understand different types of 'input'?	What do we need to do with the camera to take good pictures? How can you edit, crop and filter photographs? How can you search safely for images online?	Why is it easier to save work on a computer instead of on paper? How can you edit an image using online software? What is a spreadsheet?
Possible cross curricular links	Art and design / Maths	English / Maths / Geography		Maths / Science	English: reading / Art and design	Science / D&T / Maths / History
Resources	https://www.kapowprimary.com/wp-content/uploads/2020/09/Y1-Comp-Getting-started-KO.pdf	https://www.kapowprimary.com/wp-content/uploads/2020/10/Y1-Algorithms-unplugged-KO.pdf	https://www.kapowprimary.com/wp-content/uploads/2020/11/Y1-Programming-Bee-Bot-KO.pdf	https://www.kapowprimary.com/wp-content/uploads/2020/10/Y1-Introduction-to-Data-KO.pdf	https://www.kapowprimary.com/wp-content/uploads/2020/08/Y1-Comp-Digital-imagery-KO.pdf	https://www.kapowprimary.com/wp-content/uploads/2020/10/Y1-Rocket-to-the-moon-KO.pdf
Online safety unit:	Lesson 1	Lesson 2	Lesson 3	Lesson 4		
National Curriculum KS1 (skills)	<p>Key stage 1 Pupils should be taught to:</p> <ul style="list-style-type: none"> • understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • 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. 					