Year 1 Computing Progression Grid

Topic	Control	Sharing Information E-Safety Collecting Information (Maths)	Sharing information (English) Control (Scratch Junior) Understanding Technology
Prior knowledge	ELG 02 **Understanding**: children follow instructions involving several ideas or actions. ELG 04 **Moving and handling**: children show good control and co-ordination in large and small movements. They move confidently in a range of ways, safely negotiating space.	**ELG 16 Exploring and using media and materials:** children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. **ELG 17 Being imaginative:** children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play and stories.	ELG 15 **Technology**: children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. ELG 02 **Understanding**: children follow instructions involving several ideas or actions. **ELG 17 Being imaginative:** children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play and stories.
Key vocabulary	**Algorithm** Instructions Order Directional language such as: left, right, up, down, forwards, backwards, quarter and half	Respect Safety Personal Private	**Algorithm** Instructions Device (as well as the ability to name some devices such as printers or projector) Program
Statutory Requirements	• Understand what algorithms are • Understand how algorithms are implemented on digital devices • Begin to understand that programs execute by following precise and unambiguous instructions • Create simple programs • Debug simple programs	• 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. • use technology purposefully to create, organise and store digital content	• recognise common uses of information technology beyond school • Understand what algorithms are • Understand how algorithms are implemented on digital devices • Begin to understand that programs execute by following precise and unambiguous instructions • Create simple programs • Debug simple programs
Skills covered	•Write an algorithm for an everyday activity •Give and follow instructions, including turning movements, one at a time •Create an algorithm to guide your robot partner •Write an algorithm for a Bee Bot to complete a maze. •Program a Bee Bot with directional commands Use technology safely and respectfully	• Work collaboratively to create a digital class resource that combines text, graphic and sounds • Use a range of simple tools in a paint package to create/ modify a picture • As a class, children use a simple pictogram or painting program to develop simple graphical awareness / one to one correspondence. • As a class exercise children explore information from a variety of sources (electronic, paper based, observations of the world around them, etc.).	• Write an algorithm for an everyday activity • Give and follow instructions, including turning movements, one at a time • Create an algorithm to guide your robot partner • Write an algorithm for a Bee Bot to complete a maze. • Program a Bee Bot with directional commands • Choose suitable sounds from a bank to express new ideas • Record short speech

		• They show an awareness of different forms of information	• Show an awareness of the range of devices and tools they encounter in everyday life • Show an awareness that what they create on a computer or tablet device can be shown to others via another device (e.g. printer, projector, Apple TV)
Key Performance Indicators	•I can write an algorithm for an everyday activity •I can program a Bee Bot with directional commands	• I can use a range of simple tools in a paint package to create/ modify a picture Links with Maths and to be completed in a Maths/Science lesson- • I can create a simple pictogram	• I can create a simple algorithm using Scratch Junior • I can create short sets of sequenced instructions. Links with English and to be completed as part of the English lesson • I can record a short speech on an iPad

Year 2 Computing Progression Grid

Topic	**Heroes and Villains** **Computing and Programming** **Scratch - Make the goats cross the bridge** **Creating Pictures** **Photo Booth - Christmas cards**	**Be Brave!** **Computing and Programming** **Scratch - Space rocket blast off** **Collecting Information- Use a graphing package**	**Oh, The Places You'll Go!** **Creating Sound** **Report Tellagami - Report on Canada** **Computing** **Sharing information - Sending emails**
Prior knowledge	**From Year 1** Write an algorithm for an everyday activity •Give and follow instructions, including turning movements, one at a time •Program a Bee Bot with directional commands	**From Year 1** Write an algorithm for an everyday activity •Give and follow instructions, including turning movements, one at a time •Program a Bee Bot with directional commands **From Autumn Term** Program Scratch – choose scenes, sprites, use directional commands • I can create a simple pictogram	From Spring Term Add sound to programs Add choose sprites appropriate to the task
Key vocabulary	Sprite Commands Digital Algorithm	Recording Sprite command	Search engine Private Personal Respectful Contact Electronic (e-mail)
Statutory Requirements	• Understand what algorithms are • Understand how algorithms are implemented on digital devices • Begin to understand that programs execute by following precise and unambiguous instructions • Create simple programs • Debug simple programs use technology purposefully to create, organise and store digital content	• Understand what algorithms are • Understand how algorithms are implemented on digital devices • Begin to understand that programs execute by following precise and unambiguous instructions • Create simple programs • Debug simple programs	• 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.
Skills covered	• Generate independent work combining graphics, text and sound • Retrieve and edit work • Write an algorithm for a more complex every day task- e.g. making a jam sandwich • Use selection when programming • Write a storyboard • Program and debug a game designed	• Create a simple animation to tell a story • Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions • Write an algorithm for a more complex every day task- e.g. making a jam sandwich • Use selection when programming • Write a storyboard • Program and debug a game designed	• Children use a search engine to find specific relevant information to use in a presentation for a topic. • Use technology safely and respectfully • Know to keep personal information private • Identify where to go for help and support when they have concerns about content or contact • Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc • Begin to show an awareness that computers can be linked to share resources

			• Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks)
Key Performance Indicators	• I can choose a scene and sprite to match a given set of instructions • I can experiment with directional commands to make a sprite move to the right place • I can take a digital photo and manipulate it to create a picture I can save my work	• I can choose a scene and sprite to match a given set of instructions • I can experiment with directional commands to make a sprite move to the right place I can add sound by recording my voice I can use a graphing package to collect information I can use a graphing package to organise data in a graph and can answer questions	• I know that I should only be online with people I know • I know where to go if I have concerns about content or contact • I can reply to an email I can record my voice using different Apps

Year 3 Computing Key Indicators Grid						
Topic	Wonderful Worlds		Stones and Bones		Voyages and Discoveries	
	Coding Create a world using Kodu	**Networking** Primary computing	**Creating multimedia animation and video** SCRATCH animations	**Creating pictures** Create and manipulate digital images (Pic Collage/Photoshop)	**E safety** Staying safe online **Computing** Computer programming (Scratch) Create a simple maze program based on the tomb of Tutankhamon	**Modelling** Use Google earth and the internet to find information about Egypt
Prior skills	Children to transfer computing skills to new software as they haven't used Kodu yet- • I can choose a scene and sprite to match a given set of instructions • I can experiment with directional commands to make a sprite move to the right place	Year 2- Sending emails as a whole class	Create a simple animation to tell a story Write an algorithm for a more complex every day task- e.g. making a jam sandwich Use selection when programming Write a storyboard Program and debug a game designed	Generate independent work combining graphics, text and sound Retrieve and edit work	Write an algorithm for a more complex every day task- e.g. making a jam sandwich Use selection when programming Write a storyboard Program and debug a game designed Use technology safely and respectfully	Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks) Children use a search engine to find specific relevant information to use in a presentation for a topic.
Vocabulary	Repetition	Connect Linked Network	Algorithm Repeat Plan	Media Graphics Form	Safe Information Personal	Record Interpret Questions

		Internet World Wide Web	Select Debug	Present Manipulate software	Danger	Research Search engine Index Menu Hyperlinks
Statutory requirements	• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	• 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 •	• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	• 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	• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	• 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 • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
Skills covered	Understand and use repetition within algorithms 3.Use a range of inputs and selection within an algorithm	Understand that the computers in a school are connected together in a network 2.Understand why computers are networked 3.Understand the difference between the	1.Write an algorithm in a flow chart 2.Understand and use repetition within algorithms 3.Use a range of inputs and selection within an algorithm	Record and present information integrating a range of appropriate media combining text and graphics in printable form and sound for on screen presentations	Children begin to develop an understanding regarding the reliability of information sourced online They can identify who to speak to both inside and outside of school regarding concerns	Begin to use a data logger to sense physical data (sound, light, temperature). Linked to science topic - Light

		Internet and the World Wide Web (WWW)	4.Plan a game in Scratch using inputs, repetition and selection 5.Program a game using repetition, selection and inputs. 6.Debug your Scratch game	Manipulate digital images using a range of tools in appropriate software to convey a specific mood	about content or contact on the internet Refine understanding of what information is classed as personal	Using another curriculum area as a starting point, children ask their own questions then use ICT sources to find answers, making use of search engines, an index, menu, hyperlinks as appropriate. Children use the information or resources they have found.
Key performance indicators	I understand that efficient procedures/algorithms can be used to solve problems and to plan for specific outcomes. I can design and write a program for my own world	I understand computers can be linked together.	I can program a game using inputs, repetition and selection	I can manipulate and present my work using a range of media and text.	I can explain how I can stay safe online.	I can use the internet to research a question or a topic

Year 4 Computing Progression Grid

Topic	Networking	Interactive books linked to Egypt topic – book creator app	Data logging linked to sound topic in Science	Rainforest world in Kodu	Rainforest weather report	E-safety
Prior knowledge	Year 2- Class email sent Understand that the computers in a school are connected together in a network 2.Understand why computers are networked 3.Understand the difference between the Internet and the World Wide Web (WWW)	Record and present information integrating a range of appropriate media combining text and graphics in printable form and sound for on screen presentations Manipulate digital images using a range of tools in appropriate software to convey a specific mood	Begin to use a data logger to sense physical data (sound, light, temperature).	Understand that efficient procedures/algorithms can be used to solve problems and to plan for specific outcomes. -Design and write programs that accomplish specific goals.	From Year 2- Generate independent work combining graphics, text and sound	Children begin to develop an understanding regarding the reliability of information sourced online They can identify who to speak to both inside and outside of school regarding concerns about content or contact on the internet Refine understanding of what information is classed as personal
Key vocabulary	Server Network Internet Email Collaborate World wide web Communication Services	Digital media Software App Audience Interactive book Information Present Digital device	Data logging Measure Change Collect Instrument Analyse Recording Probe Interpret Results	Selection Algorithm Debug Activated Choice Programs Variables Input Output 3 dimensional Tool Concept Kodu	Podcast Combine Music Sound effects Record Edit Software Digital devices Programs	e-safety digital citizen responsibly acceptable / unacceptable behaviour personal information respect privacy concern report content accuracy
Statutory Requirements	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.	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.	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	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.	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	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Skills covered	1.Understand that servers on the Internet are located across the planet 2.Understand how email is sent across the Internet 3.Understand how the Internet enables us to collaborate	Record and present information integrating a range of appropriate media combining text and graphics in printable form and sound and video for on screen presentations which include hyperlinks Begin to show an awareness of the intended audience	Use a data logger confidently, connected to the computer or remotely, to capture continuous or intermittent data readings. Interpret the results and use these in their investigations.	1.Create a 3D world within Kodu 2.Identify the concept of selection 3.Use selection with Kodu 4.Use selection to create an end to a game 5.Use selection to adapt the Coin Quest game	Create a simple podcast, selecting and importing already existing music and sound effects as well as recording their own.	Make use of copy and paste, beginning to understand the purpose of copyright regulations and the need to repurpose information for a particular audience. They show an understanding that not all information on the internet is accurate. Develop a growing awareness of how to stay safe when using the internet (in school and at home) and that they abide by the school's internet safety policy.
Key Performance Indicators	I understand that servers on the internet are located across the planet. I know how email is sent across the internet. I can give examples of how the internet enables people to collaborate.	I can record and present information integrating a range of appropriate media. I can begin to show an awareness of the intended audience.	I can use a data logger to measure changes in sound. I can interpret the results recorded from the data logger.	I can create a 3D world within Kodu. I can explain the concept of selection. I can use selection within Kodu and create an end to a game.	I can select music and sound to include in a simple podcast. I can record my own sound effects.	I can show an understanding that not all information on the internet is accurate. I am developing an awareness of how to stay safe online. I can begin to explain the purpose of copyright regulations.

Year 5 Computing Progression Grid			
Topic	**WW2 – research** **Presenting information (Word, Power point, Publisher, Audacity)**	**Scratch** **Data Logging- Collecting Information**	**Networks and e-safety** **Sharing Information- Fair Trade Advert**
Prior knowledge	Record and present information integrating a range of appropriate media combining text and graphics in printable form and sound and video for on screen presentations which include hyperlinks Begin to show an awareness of the intended audience They show an understanding that not all information on the internet is accurate.	From Year 3- 1.Write an algorithm in a flow chart 2.Understand and use repetition within algorithms 3.Use a range of inputs and selection within an algorithm 4.Plan a game in Scratch using inputs, repetition and selection 5.Program a game using repetition, selection and inputs. 6.Debug your Scratch game	They show an understanding that not all information on the internet is accurate. Develop a growing awareness of how to stay safe when using the internet (in school and at home) and that they abide by the school's internet safety policy.
Key vocabulary	search engine, operator, site, web spider, index, link, spam Windows, word, power point, publisher, podcast, audacity, open, file, folder, save, text, image, font, transition, jingle, track	simulate, control system, selection, repetition and variable, sprite, backdrop, algorithm, variable, condition, command, executed, debugging	Domain name server, IP address, router
Statutory Requirements	• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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	• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems use sequence, selection and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how simple algorithms work and to detect and correct errors in algorithms and programs	• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact 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
Key Skills	• Use advanced tools in word processing/ DTP software such as tabs, appropriate text formatting, line spacing etc appropriately to create quality presentations appropriate for a known audience	1.Simulate control using selection, repetition and variables 2.Simulate a system using repetition of costumes 3.Use variables as a condition for selection 4.Design a simulation of a physical system	Understand how we view web pages on the Internet Use search technologies effectively Understand that web spiders index the web for search engines Appreciate how pages are ranked in a search engine Abide by school rules for e-safety

	• Independently search the internet using a variety of techniques to find a range of information and resources on a specific topic. • Independently, and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic. • Use appropriate methods to validate information and check for bias and accuracy.	5.Program a simulation of a physical system Use a data logger confidently, connected to the computer or remotely, to capture continuous or intermittent data readings. Interpret the results and use these in their investigations. Realise the advantages of using ICT to collect data that might otherwise be problematic. Independently search the internet using a variety of techniques to find a range of information and resources on a specific topic.	Make a short film / animation from images (still and / or moving) that they have sourced, captured or created Create multiple track compositions that contain a variety of sounds.
Key Performance Indicators	I understand how to be safe when using technology I can create, save, reopen and edit files in word, publisher and powerpoint I can use technology to present information in clear and interesting formats I can search for information on the internet effectively, evaluating content	I understand how to be safe when using technology I can use Scratch to simulate a physical system I can program algorithms in Scratch and debug these programs	I understand how to be safe when using technology I can describe how information is accessed via computer networks I can make a short film/ animation from images

Year 6 Computing Progression Grid			
Topic	**Is it ever right to fight?**	**Have we always looked this way?**	**Can we change the world?**
Prior knowledge	1.Simulate control using selection, repetition and variables 2.Simulate a system using repetition of costumes 3.Use variables as a condition for selection 4.Design a simulation of a physical system 5.Program a simulation of a physical system	Understand how we view web pages on the Internet Use search technologies effectively Understand that web spiders index the web for search engines Appreciate how pages are ranked in a search engine Abide by school rules for e-safety Use advanced tools in word processing/ DTP software such as tabs, appropriate text formatting, line spacing etc appropriately to create quality presentations appropriate for a known audience Use appropriate methods to validate information and check for bias and accuracy.	Use a data logger confidently, connected to the computer or remotely, to capture continuous or intermittent data readings. Interpret the results and use these in their investigations. Realise the advantages of using ICT to collect data that might otherwise be problematic.
Key vocabulary	Router Server Local Area Network Decomposition Debug Algorithm Selection	Search engine Search engine optimisation Browser Internet Protocal (IP) address	HyperText Markup Language (HTML) Analysis
Statutory Requirements	**Programming** Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs **Networking** 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	**Finding Information** Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Website designing and Data Logging** 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

Key Skills	1.Use variables and inputs within Scratch 2.Use repetition and variables to create a scoring system 3.Design a numeracy game using variables, selection and repetition 4.Program the game you have designed using variables, selection and repetition Understand what HTML is and recognize HTML tags	Abide by school rules for e-safety Independently, and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic. Use appropriate methods to validate information and check for bias and accuracy. Multimedia work shows restrained use of effects that help to convey meaning rather than impress. Use images that they have sourced/ captured / manipulated as part of a bigger project (eg presentation or document). Create and share an audioguide and consider the effect that their podcasts will have on the audience	Understand what HTML is and recognize HTML tags Know a range of HTML tags and remix a web page Create a webpage using HTML Children are able to identify their own opportunities for data logging and carry out their own experiments. They check and question results and are able to spot trends in data and identify when problems may have occurred. Independently search the internet using a variety of techniques to find a range of information and resources on a specific topic. Repurpose and make appropriate use of selected resources for a given audiences, acknowledging material used where appropriate
Key Performance Indicators	* I can use variables and inputs within Scratch * I can design a numeracy game using variables, selection and repetition	• I can independently search the internet using a variety of techniques to find a range of information and resources on a specific topic. • I can create and share an audioguide and consider the effect that their podcasts will have on the audience • I can abide by school rules for e-safety independently, and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic.	• I can understand what HTML is and recognize HTML tags • I can use images that they have sourced/ captured/ manipulated as part of a bigger project (eg presentation or document). • I can identify my own opportunities for data logging and carry out my own experiments.