Castleton C of E Primary School Progression of skills – Computing

Teach computing. National Curriculum. Software

Term	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Aut 1	**Computing systems and networks: Technology around us** *Recognising technology in school and using it responsibly.* PoS: -Use technology to 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.	**Computing systems and networks: Information technology around us** *Identifying IT and how its responsible use improves our world in school and beyond.* - 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	**Computing systems and networks: Connecting Computers** *Identifying that digital devices have inputs,processes, and outputs, and how devices can be connected to make networks.* - Use sequence, selection, and repetition in programs; work with variables and various forms of input and output -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 https://www.bbc.co.uk/bitesize/clips/z94dq6f	**Computing systems and networks: The internet** *Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.* - 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 -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	**Computing systems and networks: Sharing information** *Identifying and exploring how information is shared between digital systems.* -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 -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 -Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	**Computing systems and networks: Internet communication** *Recognising how the WWW can be used to communicate and be searched to find information.* - Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts -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 -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

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Aut 2	**Creating Media: Digital Painting** *Choosing appropriate tools in a program to create art, and making comparisons with working nondigitally.* -Use technology to purposefully to create, organise, store,	**Creating media: Digital photography** -Capturing and changing digital photographs for different purposes. Use technology purposefully to create, organise, store, manipulate and retrieve digital content	**Creating Media: Stop Frame Animation** *Capturing and editing digital still images to produce a stop-frame animation that tells a story.* - 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	**Creating media: Audio editing** *Capturing and editing audio to produce a podcast, ensuring that copyright is considered.* -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	**Creating media: Video editing** *Planning, capturing, and editing video to produce a short film.* -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	**Creating media: Webpage creation** *Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation*. - Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
	manipulate and retrieve digital content. Paintz.app Drawing Desk	-Recognise common uses of information technology beyond school iPads	goals, including collecting, analysing, evaluating and presenting data and information. StopMotion studio Powerpoint Keynote	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 Audacity Garageband	(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 Imovie Possibly green screen- DoInk	-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 Look for alternatives to Google sites

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Spring 1	**Programming A: Moving a robot** *Writing short algorithms and programs for floor robots, and predicting program outcomes.* -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 Recognise common uses of information technology beyond school Unplugged activities- control a friend.	**Programming A: Robot Algorithms** *Creating and debugging programs, and using logical reasoning to make predictions.* -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 Recognise common uses of information technology beyond school Beebots/Bluebot app A.L.E.X	**Programming A: Sequencing sounds** *Creating sequences in a block-based programming language to make music.* -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 Scratch	**Programming A:Repetition in shapes** *Using a text-based programming language to explore count-controlled loops when drawing shapes.* -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 Turtleacademy Scratch- pen up, pen down etc	**Programming A: Selection in physical computing** *Exploring conditions and selection using a programmable microcontroller.* -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 Crumble? Could use online microbit again	**Programming A:Variables in games** *Exploring variables when designing and coding a game.* -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 Scratch
Spring 2	**Data & Information: Grouping Data** Exploring object labels, then using them to sort and group objects by properties.	**Data and information:Pictograms** *Collecting data in tally charts and using attributes to organise and present data*	**Data & Information: Branching databases** *Building and using branching databases to group objects using yes/no questions.*	**Data & Information:** *Data logging Recognising how and why data is collected over time, before using data loggers to carry out an investigation.*	**Data & Information: Flat-file databases** *Using a database to order data and create charts to answer questions.* - Use search technologies effectively, appreciate how	**Data & Information: Introduction to spreadsheets** *Answering questions by using spreadsheets to organise and calculate data.*

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	-Use technology to purposefully create, organise, store, manipulate and retrieve digital content. -Recognise common uses of information technology beyond school.	*on a computer.* -Use technology purposefully to create, organise, store, manipulate and retrieve digital content -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 J2e.com Purple Mash	-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 J2e.com Purple Mash	-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 https://www.arduino.cc/education/science-journal	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 J2E.com Excel- spreadsheet Purple Mash	-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 Excel
Summer 1	**Creating Media: Digital Writing** *Using a computer to create and format text, before comparing to writing non-digitally.* - Use technology to purposefully to create, organise, store, manipulate and retrieve digital content. -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. Introduction to Word/Pages etc	**Creating Media: Making Music** *Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.* -Use technology to purposefully to create, organise, store, manipulate and retrieve digital content. Garageband Chrome music lab	**Creating Media: Desktop publishing** *Creating documents by modifying text, images, and page layouts for a specified purpose.* - 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 Word	**Creating Media:** *Photo editing Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.* -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 Ipad editor Pixlr getpaint.net	**Creating Media: Vector drawing** *Creating images in a drawing program by using layers and groups of objects.* -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	**Creating Media: 3D modelling** *Planning, developing, and evaluating 3D computer models of physical objects.* - 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 Tinkercad https://www.tinkercad.com/

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Summer 2	**Programming B: Programming Animations** *Designing and programming the movement of a character on screen to tell stories.* - Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and	**Programming B: Programming Quizzes** *Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.* - Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and	**Programming B: Events & Actions in Programs** *Writing algorithms and programs that use a range of events to trigger sequences of actions.* - 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	**Programming B:Repetition in games** *Using a block-based programming language to explore count-controlled and infinite loops when creating a game.* -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;	**Programming B:Selection in quizzes** *Exploring selection in programming to design and code an interactive quiz.* - 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;	**Programming B: Sensing** *Designing and coding a project that captures inputs from a physical device.* -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
	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. Scratch JR	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. Scratch Jr	-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 Scratch	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 Scratch	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 Scratch	-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 Micro:bit- use the website at https://makecode.microbit.org/