Knowledge and skills Progression Document

Computing

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Year						
GD and WTS children Assessment						

National curriculum statements	Topics (Teach Computing)	KS1
• 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.	Computer Science Programming A - Moving a robot (Y1) Programming B - Programming animations (Y1) Programming A - Robot algorithms (Y2) Programming B - Programming quizzes (Y2) Digital Literacy Computer Systems and Networks - Technology around us (Y1) Computer systems and Networks – IT around us (Y2) Information Technology Data and Information – Grouping Data (Y1) Data and information – Pictograms (Y12) Creating Media – Digital painting (Y1) Creating Media – Digital writing (Y1) Creating Media – Digital Photography (Y2) Creating Media – Digital Music (Y2)	Knowledge – I know, I know how, I know when, I know that • I know that an algorithm is a precise set of ordered instructions, which can be turned into code. • I know that programs follow precise and clear instructions. • I know that debugging is finding and fixing errors in algorithms and programs. • I know how we use technology outside of school. • I know how we use technology inside of school. • I know how to use technology safely and respectfully. • I know how algorithms are used as programs on digital devices. • I know when to keep personal information private. • I know where to go for help and support when I have concerns about content online. • I know where to go for help and support when I have concerns about contact online. • I know who to go to for help and support when I have concerns about content online. • I know who to go to for help and support when I have concerns about contact online. Skills • I know how to create simple programs • I know how to debug simple programs • I know how to use logical reasoning to predict the behaviour of simple programs. • I know how to use technology purposefully to create digital content • I know how to use technology purposefully to organise digital content • I know how to use technology purposefully to store digital content • I know how to use technology purposefully to manipulate digital content • I know how to use technology purposefully to retrieve digital content • I know how to recognise common uses of information technology.

Vocabulary

algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, blocks, sequence, project, repeat, repeat forever, invisible, grow, shrink, unambiguous, precise, paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present, safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet.

National curriculum statements	Topics (Teach Computing)	KS2
• 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 • 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,	Computer Science Programming A – Sequencing sounds (Y3) Programming B – Events and actions in programs (Y3) Programming A – Repetition in shapes (Y4) Programming B – Repetition in games (Y4) Programming A – Selection in Physical computing (Y5) Programming B – Selection in quizzes (Y5) Programming A – Variables in Quizzes (Y6) Programming B – Sensing Movement (Y6) Digital Literacy Computing systems and networks - Connecting Computers (Y3) Computing systems and networks – The internet (Y4) Computing systems and networks – Systems and searching (Y5) Computing systems and networks – Communication and Collaboration (Y6) Information Technology Data and information – Branching databases (Y3)	Knowledge – I know, I know how, I know when, I know that • I know that an algorithm is a precise set of ordered instructions, which can be turned into code. • I know that programs follow precise and clear instructions. • I know that debugging is finding and fixing errors in algorithms and programs. • I know that computer networks include the internet • I know that computer networks offer opportunities for communication and collaboration • I know that there is a variety of software (including internet services) to use on digital devices. • I know how algorithms are used as programs on digital devices • I know how computer networks provide multiple services such as the world wide web • I know how results are selected and ranked • I know how results evaluate digital content • I know what acceptable and unacceptable behaviour is • I know where to go for help and support when I have concerns about content online. • I know where to go for help and support when I have concerns about contact online. • I know who to go to for help and support when I have concerns about content online. • I know who to go to for help and support when I have concerns about contact online. Skills • I know how to design algorithms and programs that accomplish specific goals. • I know how to write algorithms and programs that accomplish specific goals. • I know how to debug algorithms and programs that accomplish specific goals. • I know how to design algorithms and programs that include controlling or simulating physical systems • I know how to write algorithms and programs that include controlling or simulating physical systems • I know how to debug algorithms and programs that include controlling or simulating physical systems • I know how to design algorithms and programs that solve problems by decomposing them into smaller parts. • I know how to write algorithms and programs that solve problems by decomposing them into smaller parts. • I know how to debug algorithms and programs that solve problems by decomposing them into smaller parts. • I know how to use sequence in programs. • I know how to use selection in programs. • I know how to use repetition in programs. • I know how to work with variables and various forms of input and output • I know how to logical reasoning to explain how some simple algorithms work • I know how to detect and correct errors in algorithms and programs.

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	Data and Information – Data Logging (Y4) Data and Information – Flat-file Databases (Y5) Data and Information – Introduction to spreadsheets (Y6) Creating Media – Stop frame animation (Y3) Creating media – Desktop Publishing (Y3) Creating Media – Audio Production (Y4) Creating Media – Photo Editing (Y4) Creating Media – Video Production (Y5) Creating Media – Introduction to vector graphics (Y5) Creating Media – Web page creation (Y6) Creating Media – 3D Modelling (Y6)	• I know how to search technologies effectively • I know how to technology safely, respectfully and responsibly • I know how to identify a range of ways to report concerns about content and contact. • I know how to select, use and combine a variety of software (including internet services) on a range of digital devices • I know how to choose a variety of software (including internet services) on a range of digital devices • I know how to a variety of software (including internet services) on a range of digital devices • I know how to select, use and combine a variety of software (including internet services) on a range of digital devices • I know how to design a range of programs that accomplish given goals. • I know how to create a range of programs that accomplish given goals. • I know how to design a range of systems that accomplish given goals. • I know how to create a range of systems that accomplish given goals. • I know how to design a range of content that accomplishes given goals. • I know how to create a range of content that accomplishes given goals. • I know how to collect data and information • I know how to analyse data and information • I know how to evaluate data and information • I know how to present data and information

Vocabulary

decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable, draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck, audio, sound, video, movie, embed, link, file format, animate, animation, still image, thaumatrope, zoetrope, zoopraxiscope, stereoscope, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame Google Docs, insert, table, filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public, decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable, Google Docs, insert, table, draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck, audio, sound, video, movie, embed, link, file format, animate, animation, still image, thaumatrope, zoetrope, zoopraxiscope, stereoscope, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame, filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public.