Brooksward School – Computing Skills Progression – 2016/2017

Fdn	**ELG:** Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.		**EXC:** Children find out about and use a range of everyday technology. They select appropriate applications that support an identified need – for example in deciding how best to make a record of a special event in their lives, such as a journey on a steam train.	
KS1		**Information Technology** ● use technology purposefully to create, organise, store, manipulate and retrieve digital content ● recognise common uses of information technology beyond school	**Digital Literacy** • 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** ● 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
	Key Skills	**Information Technology**	**Digital Literacy**	**Computer Science**
YEAR ONE	• to know how to switch a range of digital devices (computer/iPad) on and off • load programs (office, iPad apps,) with support/open and close apps • use a mouse to navigate an age-appropriate website/know how to navigate apps on an iPad • -use a mouse to select/drag/position an object or window • to talk about what they are doing with Computers/Digital Media using appropriate	• to use a digital device to take a picture or record their work (digital camera/iPad) • to know how to switch between forward and back facing cameras (iPads) • to recognise that an electronic keyboard can be used to select and control sounds • to begin to select or record a sound to add to my work (ScratchJR/Scratch) • to explore a range of electronic music and sound devices to play, record and listen to sounds (iPads/microphones) • to understand that digital devices have stop, record and playback functions • to be familiar with a keyboard • to select images on a computer/iPad • to begin to type sentences (with support) using capital letters, full stops and other punctuation	• to know that we can communicate online e.g email/text/voip/Skype • to contribute ideas to a class email or respond to a message (blog/skype) • to create a story to combine words, pictures, sounds and animations (scratch/ppt) • use simple writing tools to create their own content (office/pages/WPS/purplemash) • follow age-appropriate links provided by the teacher to research information (goo.gl) • with support, use sound recording tools to convey a simple message • to sort objects into groups according to a given criteria. • to use a pictogram to create and help answer simple questions **E-Safety - Introducing the concepts:**	• to explore a range of control toys and digital devices (BeeBots/microphones/ipads) • to follow instructions to move around to complete a simple task • to give a sequence of instructions to complete a simple task (ScratchJR/Scratch) • to record instructions simply using pictures • to understand that instructions should be given clearly and in the correct order) • to talk about what will happen when instructions are given in a sequence (Daisy Dino) • to navigate a sprite/BeeBot around a course (iPads/ScratchJR/Scratch)

	vocabulary according to equipment available e.g screen/keyboard/iPad/computer/mouse/headphones	• to use pre-defined layouts or templates for presentations (ppt/pages/keynote) • to use a paint package to create a picture; selecting and using • different brushes (MS paint/iPad apps/Snipping Tool) • - to know the difference between computer based art activities and paper based art activities (undo, changes quickly and easily made)	• to know that people we don't know are strangers • to be nice to people • to know that some information is personal • to know who to tell if something is seen that makes them feel uncomfortable	
YEAR ONE	***Greater Depth***	***Greater Depth***	***Greater Depth***	***Greater Depth***
	• Independently turn on a computer and iPad. • Open an app or internet browser in Windows. • Confidently use a mouse and trackball to interact with a computer.	• Type a sentence with a capital letter and a full stop, independently. • Use a range of digital devices confidently to take pictures, video and record sounds.	• Create and edit age specific writing and visual content using Word Processing software (Word, Powerpoint, Purple-Mash) independently. • Enter a shortened ***goo.gl*** link independently. • To use links on a webpage to navigate. • To be able to explain what to do if they feel uncomfortable with something online.	• To complete missing parts of given code/instructions to solve a problem in a digital environment, independently. (Code.org, ScratchJr/Scratch/purplemash) • Use a range of digital devices confidently to complete a predetermined route. (Beebots/DaisyDino/purplemash) • To identify where a code or device has gone wrong and suggest a correction.

<table>
<tr><th></th><th>Key Skills</th><th>Information Technology</th><th>Digital Literacy</th><th>Computer Science</th></tr>
<tr><td rowspan="2">YEAR TWO</td><td rowspan="2">• to develop awareness of keyboard layout and use of a mouse e.g use the mouse or arrow keys to insert words and sentences
• know backspace/undo/
• shift for capital letters/enter/upload
• changing font/ size/colour and style of text.
• typing skills (use two hands when typing)
• logging on/off digital devices</td><td rowspan="2">• to explore a range of sounds on an electronic keyboard, choose appropriate sounds for a purpose
• to develop basic editing skills eg shift key for upper case, question marks, spaces after punctuation.
• to know how to improve the presentation of a piece of work by changing the font size, colour and style
• to use different layouts and templates for different purposes (e.g story/ newspaper /poster)
• to understand that folders are used to organise files on a computer
• To organise files and folders by creating, renaming, moving, copying and deleting</td><td>• to compare the different ways that messages can be sent e.g email/text /telephone/letter and start to consider their advantages and disadvantages
• to contribute and respond to an e-mail (send an email to Santa)
• to look and talk about other people’s contributions online (padlet/prezi/Scratch/code.org)
• to consider who can see their contributions on Code.org/scratch/padlet
• to know that stories can be shared in different ways (photos/video/animation)
• to create/use own pictograms/graphs (purple mash)
• to create QR codes (goo.gl)
• to access websites and documents using QR codes
• to enter/save and retrieve pictures and text</td><td rowspan="2">• to know how to control a range of digital devices
• to know that devices and actions on screen may be controlled by sequences of actions and instructions
• to create a sequence of instructions to complete a simple task (move a BBot/create a simple shape)
• to control a floor robot using appropriate buttons (BeeBots)
• to make predictions about what will happen when a command is entered</td></tr>
<tr><td>E-Safety (reinforce):</td></tr>
</table>

	• use navigation skills to access appropriate parts of a website/ simple program/ app	• to combine graphics, text and sound to enhance their text (PPT/Word/Keynote/Pages) • to use a sound recording tool to record voice for a specific purpose (Scratch/PPT) • to create a simple animation to illustrate a story or idea (Scratch/ScratchJr) • to upload an image (Book Creator/PPT/Word)	• to know that people we don't know are strangers and are not always who they say they are • to be nice to people on the computer as well as on the playground • to know that some information is personal and needs to be kept private • to know who to tell if something is seen that makes them feel uncomfortable • to know that passwords are used to access certain sites • to begin to use an appropriate search engine (safesearch) supported by an adult	• to discuss how to improve/change their sequence of commands. • to know the purpose of a range of digital devices: microphone/voice-recorders/ iPad/computer/laptop/ cameras etc • to use music software to create and edit simple musical phrases (iPad apps) • to begin to answer 'What if' questions using a simulation (ScratchJr/Scratch to know the difference between input/output devices

Brooksward School – Computing Skills Progression – 2016/2017

	Greater Depth	***Greater Depth***	***Greater Depth***	***Greater Depth***
YEAR TWO	• Type using two hands making use of a wider range of keyboard functions (Arrow keys, Shift, both delete keys, Caps and Num lock etc)) • Confident use of mouse to move, select and control on screen content. (Click and drag accurately, right click to access save options)	• Can select and use images to enhance work produced using word processing software. (Word/PPT/Pages/Keynote/purplemash) • Can select and edit the style of writing in word processing software to improve the overall presentation (font, size, layout etc). • Can save work in windows/purplemash folders and retrieve it to add or continue.	• To provide comments (positive and constructive) about another person's/child's/teacher's work, in a digital form or environment. • To create a goo.gl link or QR code as a way of accessing online work they have created (goo.gl/purplemash/scratch/code.org) • To show awareness of age appropriate e-safety guidelines during work/play involving ICTs	• To organise given code/instructions to solve a problem in a digital environment, independently. (Code.org, ScratchJr/Scratch/purplemash) • Use a range of digital devices confidently to complete a more complicated predetermined route. (Beebots/DaisyDino/purplemash) • To begin to independently debug code and instructions by identifying errors and changing.

KS2		**Information Technology** • 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	**Digital Literacy** • 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.	**Computer Science** • 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
	Key Skills	**Information Technology**	**Digital Literacy**	**Computer Science**
YEAR THREE	• to upload from digital devices and the Internet to a shared space (Class folders/Chn's Folder) • to know that they can access their work from any school computer by logging on to their Folder/Network Area.	• to use still and digital cameras • to know what makes a good photo (hold the ipad steady/point at people's faces/to discuss the quality of their image and make decisions (e.g delete a blurred / bad image) • to download stills and video • select suitable sounds (including recording with a microphone)	• to evaluate a range of printed and electronic texts, appropriate to task e.g newspaper, poster, webpage and recognise key features of layout and design • to organise and present information for a specific audience • to begin to experience forms of online discussion: such as blogs, wikis, quizzes, surveys and google hangouts • to know that ICT enables access to a wider range of information and tools to help find specific information quickly • produce work using a computer, using more advanced features of programs and tools (font sizes) • to work collaboratively to create documents, including presentations	• to develop an understanding of how technology works and how computers process instructions and commands. • To create/edit and refine more complex sequences of instructions for a variety of programmable devices e.g using the repeat command

	• open/edit and save their work in own space • to insert/cut/ copy/paste • use ctrl+v and ctrl+c to copy and paste • to use **'save as'** to create another version of their work • to develop further basic drafting skills : • Insert words or sentences. • Centre titles. • Change font, font size, colour. • to practice touch typing (typingclub)	• recognise and use key features of layout and design such as text boxes, columns, borders, WordArt • explore and begin to use more advanced features in a paint package, eg colour picker, colour replacer • save images and use them as part of other multimedia/ desktop publishing work • to use music software to select/record/organise and reorganise sounds • to create tunes with a beginning, middle and end (iPad apps) • to locate, record, save and retrieve sounds • to begin to layer sounds using music composition software • to add sounds from different sources. • sequence still images and use simple editing techniques to create a presentation	• to create record cards to store collected information • to understand the basic structure of a database • to add data to a pre-made database • to use the data in a pre-made database to generate graphs and charts • to use technology to create graphs and charts • to answer questions by searching and sorting the database **E safety:** • to know that they must only logon as themselves and must never share their password • to follow a simple search to find specific information from a website • to access a shared space to follow web links and read instructions for work • to begin to make E-Safety digital media (PPT/Posters)	• To use a computer to create basic applications, investigating how different variables can be changed and the effect this has • to understand that computer simulations can represent real life situations. • to use simulations to represent real life situations • to navigate a programming app • to control a character by dragging commands • to write a simple program/create a simple animation
	Greater Depth	***Greater Depth***	***Greater Depth***	***Greater Depth***
YEAR THREE	• To distinguish between 'save' and 'save as' and use at the appropriate opportunities to aid efficiency. • To confidently navigate windows folders and menus to locate programs and files. • Utilises keyboard shortcuts to copy and paste.	• Begin to create digital media for their own proposes (Images, sound recordings, video etc). • To begin to select images and other media based on its suitability for a specific purpose (choice of colours in images for posters, sounds for animations etc)	• To show familiarity with similar features across different software (saving, opening, closing and navigating) • To independently distinguish between where to enter text in a web browser (address bar/search bar) • To show awareness of age appropriate e-safety guidelines during work/play involving ICTs	• To code efficiently using repeat functions to duplicate actions and cloning/duplicating long sections of code or code for similar functions. • Begin to use conditional statements independently in Scratch to create variation (*If…* and *If, then…*)

Brooksward School – Computing Skills Progression – 2016/2017

	Key Skills	Information Technology	Digital Literacy	Computer Science
YEAR FOUR	• To use the online dictionary/thesaurus • to use **ctrl+alt+prntscrn** to take a picture of the whole screen and paste it into paint to adapt it. • to use the cropping tool to take a picture of any part of the screen, drawing before annotating the image and saving it. • Use windows snipping tool to capture and annotate work • continue to practice touch typing (touchtype - 20 WPM by end of Year 4) • Use more than two fingers to type • to develop further basic drafting and editing skills	• to evaluate a range of digital media, appropriate to task e.g website, photostory, leaflet, and recognise key features of layout and design • to plan structure and layout of document/presentation • to improve presentation of a document by laying it out effectively • to select and import graphics from digital cameras and graphics packages • select and import sounds (eg own recording, sound effects bank created by teacher) and video/ visual effects • through peer assessment and self-evaluation, evaluate work both during and after completion, and make suitable improvements • to develop an increasing awareness of intended audience. • to import a photograph and explore the effects which can be created • to select areas and manipulate to give different effects. • to capture video clips to communicate their ideas • to cut and reorganise digital video • to use a timeline to organise frames of video footage • to add text, sound effects and other graphic effects • to use an on-screen animation package or digital camera with stop-frame animation software, to create an animation • to select from your best work to save and share through an e-portfolio (purple mash display board)	• to open/read, and reply to email • to collaborate to create a document, giving thought to its audience and including links/images/embedded media (PPT/Weebley) • to understand that ICT allows us to make improvements to our work quickly and efficiently. • to continue to use technology to create graphs and present data in different ways. • to design and create a basic database • to use a database to answer questions that have been constructed • to explore some real-life examples of branching databases, such as keys for animal identification • to enter data into a spreadsheet • to change data and observe changes in results **E-Safety:**	• to understand that ICT allows for situations to be modelled which it would be impractical to try out in real life • to investigate the effects of changing variables in these simulations • To develop their understanding of how technology works and how computers process instructions and commands • to create a program which can be controlled by external inputs (Scratch/BeeBot Pro) e.g to program their character to navigate their 3D world with an input/move a BeeBot with using control device • To change algorithms/conditional statements and investigate the effect this has e.g use of 'if' and 'then'

	• Edit and top copy literacy work using Word/PPT/Publisher • use spell checker • delete, insert and replace text using mouse or arrow keys	• to use at least two online communication methods in topic work (blogs/emails/padlet/weebley/forms/docs) • to discuss advantages and disadvantages of these communication methods • to start to think about the different styles of language layout and format of online communications sent to different people (eg. when it is appropriate to use "text language"). • to begin to experience forms of online discussion: such as blogs, wikis, quizzes, docs, surveys and google hangouts • start new threads and contribute to others relevant to the topic; consider relevance of contributions	• to know that anyone can write on the internet and sometimes authors can produce content which is offensive, rude and upsetting • to follow school rules if anything is found • to explain ways they can report/block/avoid content that is offensive or inappropriate	• to identify how different web pages are organised e.g graphics/hyperlinks/text • to understand that a website has a unique address • to understand that cloud based tools can allow multiple people to contribute to shared documents and sites
	Greater Depth	***Greater Depth***	***Greater Depth***	***Greater Depth***
YEAR FOUR	• Typing using two hands and more than two fingers at a good pace 20-30 words per minute. • Utilises a range of methods to select and record on screen activity (ctrl+alt+prntscrn, Windows snipping, screenshots etc).	• To select, edit and refine media choices based on evaluations. Basing selections and choices of content and editing upon constructive and critical evaluations. • To independently select and create video, sound and images to support digitally created content or to enhance work collected from other subjects. (Eg: Images/Videos in Science or sound bites/monologues in English or Topic)	• To independently produce work in other curriculum areas using computing elements (researching topic, typing work, recording discussions etc.) • To independently use word processing software to use to create a piece of work (top copy/project/Computing etc). • To show awareness of age appropriate e-safety guidelines during work/play involving ICTs • To begin to support others with following age appropriate e-safety guidelines	• To confidently use variables (*conditional statements* and 'ifs') to affect simple code and outcomes of longer algorithms. • To use scratch to create a program (series of code for varied function) to achieve a specified outcome (I want to make a driving game, I will use scratch etc)

Brooksward School – Computing Skills Progression – 2016/2017

	Key Skills	Information Technology	Digital Literacy	Computer Science
YEAR FIVE/SIX	• to be able to use an online dictionary/thesaurus to search out level specific grammar and vocabulary independently • to use a variety of techniques to save and annotate on screen projects (screenshots/snipping) • to find, save, crop and edit images to suit needs of projects • continue to practice touch typing (touchtype – use several fingers and maintain 25-30 WPM) • to select suitable software to edit and redraft written work • edit and top copy literacy work using Word/PPT/Publisher use spellchecker and grammar checker to ensure consistency throughout work • use a variety of keyboard shortcuts to improve efficiency on computing systems	• To use presentation software and skills to present work or information relating to their learning (once a half term – PPT/slides/keynote/prezi). • to evaluate a range of digital media, appropriate to task e.g website, prezi, blog, pdfs and recognise key features of layout and design and relate to other curriculum areas (Reading/Writing/Topic) • to select software to support structure and layout of document/presentation • to improve presentation of a document by considering its target audience • to select and import graphics from digital cameras, graphics packages and online sources and edit/recolour/or add visual effects • select and import sounds (eg own recording, free online sources) video/visual effects • through peer assessment and self-evaluation, evaluate projects both during and after completion, and make suitable improvements • to develop projects with an awareness of intended audience • to capture video clips to communicate ideas and information to specific audiences • to edit, reorganize and enhance digital video for a specific purpose or audience • to produce a portfolio of written and visual work and projects for sharing with other children inside and out of school • to use online communication methods to support topic work	• Use technology to present their work, showing an increasing degree of skill and using advanced software • to use different filming techniques and camera angles e.g. zoom, panning, wide shot etc. to create different mood/perspective • to plan a video or animation by drawing a storyboard (Storyboard It) • to use a range of sound effects, music and voice-overs to create mood/ atmosphere • to select and edit sounds, text, movie clips and other effects to suit purpose and audience • use a range of sources to check validity and recognise different viewpoints and the impact of incorrect data • save and use pictures, text and sound recognising copyright issues • recognise that the internet may contain material that is irrelevant, bias and inappropriate. • Understand how issues of copyright apply to their own work • Understand the different type of copyright pertaining to digital medias • exchange ideas using electronic communication (Padlet, Google Docs and Forms, Websites) inside the school community • collaborate with other children outside of school **E-Safety** • to revise all elements of e-safety • to practise safe internet use within all lessons, projects and free time • to know how and when to block/report/avoid unsafe, offensive or inappropriate online content • to discuss and identify cyberbullying (SMSC, Assemblies, SIW) • to create e-safety presentations and deliver them to other year groups during e-safety week • To support others with following age appropriate e-safety guidelines, and the guidelines of their specific year group.	• develop understanding of how technology works; how computers process instructions and commands, including the use of coding languages. • To experience a variety of coding environments (Scratch, Code.org, KODU, Python) • begin to understand the history of Computer Science • to design their own game including sprites, backgrounds, scoring and/or timers. • use conditional statements to create unique algorithms • Use variables to add variation to algorithms • to program start and ends to games involving wins, losses and draws • to create variable interaction in quizzes and games using a combination of selection, conditional statements and variables (Data blocks in scratch) • to evaluate the effectiveness of their algorithms • To continually debug code to identify and correct errors, exceptions and exploits • To show an understanding of the history of computing and computer science.

		• to consider language, layout and format when communicating with different people online • to engage in a range of online activities including; publishing and sharing work for evaluation and evaluating the work of others.		
	Greater Depth	***Greater Depth***	***Greater Depth***	***Greater Depth***
YEAR FIVE	• To independently utilise a range of skills and techniques to organise, type, edit and improve a piece of written work digitally for Top Copy.	• To use presentation software to enhance the delivery of content and information (Clear visuals, which are appropriately sized. Smooth and confident transitions. Use of digital notes if available. Inclusion of embedded media.) • To independently select, edit and refine media choices based on evaluations and audience consideration.	• To suggest software to produce work in other curriculum areas using computing elements (researching topic, typing work, recording discussions etc.) • To select and independently use word processing software to use to create a piece of work (top copy/project/Computing etc) based on the requirements of the piece. • To show awareness of age appropriate e-safety guidelines during work/play involving ICTs • To support others with following age appropriate e-safety guidelines	• To confidently use a variety of variables (Data/unique operators, *conditional statements* and 'ifs') to affect a variety of code in various ways (input/output/variation) • To be confident in a variety of coding environments (Scratch, Code.org, KODU). • To select and environment to create program (games/animations/stories) to achieve a specific goal.
YEAR SIX	• To independently utilise a range of skills and techniques to organise, type, edit and improve a piece of written work digitally for Top Copy, across a variety of software *(Word, PPT, Publisher, Docs, PurpleMash, Keynote, Polaris)*	• To use presentation software to enhance the delivery of content and information, across a variety of software. (Clear visuals, which are appropriately sized. Smooth and confident transitions. Use of digital notes if available. Inclusion of embedded media) • To continue to independently select, edit and refine media choices based on evaluations and audience consideration.	• To select software to independently produce work in other curriculum areas using computing elements (researching topic, typing work, recording discussions etc.) • To select and independently use word processing software to use to create a piece of work (top copy/project/Computing etc) utilising specific features to enhance the outcome. • To show awareness of age appropriate e-safety guidelines at all times. • To support and guide others with age appropriate e-safety guidelines	• To confidently use a variety of variables (Data/unique operators, *conditional statements* and 'ifs') to affect a variety of code in various ways (input/output/variation) • To be confident in using Python to create an outcome based on a specific goal. • *To show an understanding of how the history of computing and computer science has contributed to modern standards in computing.*

Computing skills

Digital literacy

- To use QR codes.
- To know how to read URLs.
- To understand how to search effectively.
- To explore a virtual map.
- To know how to communicate online.
- To know how to stay safe when using the Internet

Information technology

- To type quickly and correctly.
- To type and design a printable document.
- To present text using fancy effects.
- To create a word collage.
- To create a photo collage.
- To create a mind map.
- To paint a picture.
- To create a picture using drawing tools.
- To create music.
- To create an audio recording.
- To edit a digital photo.
- To create an animated GIF.
- To create a stop motion animation.
- To produce a multimedia video.
- To create a multimedia e-book.
- To create an interactive activity.
- To create an on-screen presentation.
- To create a website.
- To handle data.
- To create a spreadsheet.

Computer science - theory

- To identify computer components.
- To understand how a computer stores data.
- To understand how digital images are displayed.
- To describe uses of technology.
- To understand how simulations are used.
- To understand how robots are used.
- To describe the impact of technology.
- To understand how the Internet works.
- To describe Internet services.
- To understand how an intranet works.
- To understand how binary numbers work.
- To find out about the history of computing.

Computer science - programming

- To explain what computer programming is.
- To explain how an algorithm works.
- To control an object to move along a route.
- To sequence commands to animate pictures.
- To use conditional events in a program.
- To use a variable in a program.
- To use repeat events in a program.
- To program actions using numbers.
- To use random numbers in a program.
- To program a complex game.
- To detect and correct errors in programs.
- To design and create a computer program.
- To program using a text-based language.