

Grimsdyke School

Knowledge and Skill Progression Map

Subject: Computing

Year Group	Knowledge (Know)	Skills (Do)	Concepts (Understand)
Reception	<ul style="list-style-type: none"> • Know where the computing room is in my school • Know the name of key accessories which make up a computer. • Know the difference between computers, laptop and tablets and how these are all part of technology • Know that a range of technology is used in places such as homes and schools. • Know that technology is used for particular purposes • Know where the on/off button is located on the tower and on the screen • Know that a keyboard allows us to make letters and word on the computer screen • Know how to use a mouse to navigate around a desktop • Log into the computer using their personal log in and password • Know where to find their logins for the school's online platform and to recognise the logo i.e. Google work space • Know that a keyboard has every letter in the alphabet • Know that the internet is not always safe • Know that there are things you can do if you feel unsafe on a computer • Know to keep my username, passwords and personal information confidential. • To know how to answer basic questions about information displayed in images e.g. more or less. • To know how to follow simple instructions to control a digital device and how to input a short sequence of instructions to control a device. 	<ul style="list-style-type: none"> • Independently turn on the computer using the on/off switch on the tower • Control the curser on the screen and use left click when selecting a tool • Use the cursor to select a simple programme (e.g. 2paint) • Use a simple programme with the mouse (drawing on 2paint) • Use the keyboard to write simple words using touch type related to one of their traditional stories • Become familiar with Google Workspace and practise logging in using their username and password – knowing this should be kept confidential • Creating simple codes using beebots. • Controlling remote toys (e.g. remote control cars) and understanding the left, right, forward and back buttons will move the toy in those directions. • Select and use technology for particular purposes • Be able to log on and log off the computer using their simplified usernames and passwords • Use the curser to select a simple program and use correct movement • Input left, right, forward, backward controls by using the button on a beebot. • Use single finger touch type to create basic words using the keyboard • Log in to school's online platform using their username and password 	<ul style="list-style-type: none"> • Technology • Curser • Controls • Username and password • Log on/off • Internet Safety • Hardware • Mouse • Monitor • Screen • Keyboard

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Year 1	<ul style="list-style-type: none"> • Know how to login using their school's online platform username and password • Know that there are different forms of communication (email) • Know you should only open email from a known source. • Know in what ways the internet can be unsafe • Know and recognise common uses of information technology beyond school • Know where to find their homework and spellings using Google Workspace • To know where the letters are on the keyboard and begin typing their name • To know how to use 2simple programme to type words and sentences using the keyboard. • To know that when a computer is doing something, it is following instructions called 'code' • Know how to input left, right forward, backward controls into a beebot • To know that we control computers by giving them instructions • To know that the order of instructions in an algorithm is important. • To know how to debug an error in a simple algorithm or program. • Know how to input left, right forward, backward controls into a beebot • Know who to tell if concerned about content or contact online. • To know how to open key applications independently and know how to save some work. 	<ul style="list-style-type: none"> • Show an awareness of a range of devices and tools that encounter on a daily basis • To use a range of simple tools in a paint package • To control a beebot using left and right • To put 2 instructions together to control a beebot • To begin to plan and test a beebot journey • To use the spacebar, backspace, enter and arrow keys on a keyboard • To be able to word process ideas using a keyboard • To begin to observe different forms of information • To login using their school's online platform username and password • To send emails to their peers on school's online platform • Be able to access their Google Workspace using the log in and password • Begin to use Google Workspace and become familiar with their virtual classroom. • To independently control the mouse to select desired programmes. • To use 2simple to draw a picture of their house. • Show an awareness of different forms of information 	<ul style="list-style-type: none"> • Understand the keyboard is not in alphabetical order. • Software tools • Function of a keyboard • Range of information – newspaper, internet etc. • Email • Virtual stranger danger • Saving work

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Year 2	<ul style="list-style-type: none"> • Know the difference between email and communication systems such as blogs and wikis. • Know that the computers can be linked to share resources • Know what an algorithm is and to be able to predict the outcome of a simple programme • Know to keep personal information private (E-safety) and know who to tell if a problem occurs • Know that some people can hide their identity on the internet and they might not be trustworthy • Know how to recognise advertising on websites and learn to ignore it. • Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies • Know what information technology is in a context and where have we seen it in the real world • Know how technology improves our world • Using IT responsibly when researching a topic • Know I can extract information from the internet • To know what makes a good photograph • Know how to use a tool to achieve a desired effect • To know that when a computer is doing something, it is following instructions called 'code' • Know and recognise which photos have been changed • To know that there are different forms of digital content, i.e. text, image, video and audio • To know that we can use different types of media to convey information, e.g. text, image, audio, video • To know how to capture media with support (e.g. take photos, record audio). 	<ul style="list-style-type: none"> • Controlling a mouse, keyboard and touchscreen device • Show an awareness of a range of inputs to a computer (IWB, mouse, touchscreen, microphone and keyboard) • Manipulate content by editing files, renaming etc. • Use technology purposefully to create, organise, store, manipulate and retrieve digital content • To be able to experiment with text, pictures and animation to make a simple slide show • To use the shape tools to draw. • Organise content when storing and saving • To begin to retrieve and save digital content • To make decisions to give precise instructions to a beebot using left, right, forward and backwards • To write a simple program, debug and test it. • To be able to use logical reasoning to predict what the outcome of a simple program will be. • To predict the outcome of the instructions they have given to a beebot • Keep their school's online platform passwords safe and to tell their teacher if a problem occurs • Use technology safely and respectfully, keeping personal information private • Demonstrate safe usage of IT and know who to contact if a problem arises • Independently program a bee bot with instructions to move as desired • Identify their errors in a code and debug these successfully using trial and error • To use a digital device to take a photograph • Explore the effect that light has on a photo 	<ul style="list-style-type: none"> • Storing, saving and retrieving work • Giving precise instructions • Algorithms, • Logic, • Debug, • Programme, • Devices • Respect • Kindness

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Year 3	<ul style="list-style-type: none"> • Know that we can retrieve information from online sources • Know why people may publish content that is not accurate • Know that some websites and/or pop-ups have commercial interests that may affect the way the information is presented. • Know that some internet content is inappropriate/illegal/unsafe and if viewed, should be reported to an adult • Know that it is unsafe to arrange to meet unknown people online. • Know that any communication received on the internet which makes you feel uncomfortable in any way must be reported to a trusted adult • Know what debugging means • Know how to print a document • Know how to change text formatting such as font, size, colour, bold, italics and underlined • Know how to manipulate text so it corresponds visually with what it says • Know where the shift key is and how to capitalise letters and type symbols on a document • Know where to find Office programmes • Know why we have strong passwords and manage them so that they remain confidential • Know that they must follow a set of instructions accurately for a code to be successful • Know that users can develop their own programs, and can demonstrate this by creating a simple program in an environment that does not rely on text 	<ul style="list-style-type: none"> • Position their hands on the keyboard correctly and where the space bar, shift and caps-lock keys are and how to use them • Typing with uppercase and lowercase using all aspects of the keyboard • To use the mouse and highlight correctly • Saving their work regularly in an appropriate folder • Retrieve relevant images and information from online sources • Observe safe and unsafe websites and report unsafe sites to an adult • Understand the need to be critical evaluators of content • To draw a square, rectangle and other regular shapes on screen, using commands. To be able to write more complex programs. • Create simple sequences and debug them successfully • Create strong passwords and manage or change them so that they remain strong. • To make objects perform different actions when keys are pressed on the keyboard • To know how to write a code that makes objects move around the screen when keys are pressed • Debug their codes independently when an error arises • Be able to place their hands correctly on a QWERTY keyboard using the home keys • Be able to touch type to increase their speed 	<ul style="list-style-type: none"> • Typing efficiency • URLs • Appropriate use of the internet • Debugging • Sequencing • Password protection

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Year 4	<ul style="list-style-type: none"> • Know that some people on the internet may behave maliciously (including cyber bullying) • Know how to recognise malicious behaviour • Know how to respond to malicious behaviour on the internet by reporting to an adult, website, IS provider, police, childline, CEOP • Know which websites are safe to do searches on • Know how to make graphic models • Know how to use algorithms for coding and programming • Know how to develop databases and sort the data according to different criteria. • Know and identify a range of programmes on the desktop and choose the appropriate one during a lesson • Know how to use the internet safely and securely by keeping their personal details confidential and reporting any suspicious online activity • To know that anything I share online will stay there to be seen and used by others • To know and give examples of inputs used • To know and give examples of outputs used • To know there is a difference between the Internet and the World Wide Web • To begin to know how to check who owns photos, text and clipart. • To know what an app or application is • To know some examples of search technology • To know how to design and create digital content for a specific purpose, e.g. poster, animation. • To know how to edit digital content to improve it 	<ul style="list-style-type: none"> • Organise information on a document differently depending on their audience. • Manipulate and make changes to text such as fonts and colour. • Retrieve reliable images and information from online sources. • To download images from the camera into files on the computer. To be able to copy graphics from a range of sources and paste into a desktop publishing program. • Differentiate between safe and unsafe websites. • Report unsafe sites or content to an adult. • Search using Google safely (using 'for kids') • Copy from a range of sources and paste into a publishing program • Repeat instructions to draw regular shapes on screen. • Write and create programs/algorithms and predict their outcome. • Input data into databases and sort them according to different criteria. • Save documents regularly throughout the time they are working on them. • Save documents independently and successfully, being able to reopen and edit the document at a later date • Print completed work. • Access home learning and complete work given remotely • Touch type effectively to ensure faster and more accurate typing 	<ul style="list-style-type: none"> • Malicious behaviour • Cyber bullying • Adapting content to an audience • Search engine • Sorting data

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Year 5	<ul style="list-style-type: none"> • Know that there are other ways to search for information (ex: search engines) and retrieve information from these • Know what a spreadsheet is and how to create one using Excel • Know that spreadsheets require formulas that ends in a result which can be transferred to a graph • Know that complex algorithms can have multiple errors that need debugging • To know how to read a complex program • To know how a particular algorithm works • To know how to detect (using logical reasoning) a bug and debug that problem in a program • To know a range of inputs and outputs that control or simulates control of a physical system • To know some of the other services besides the web provided by the Internet • To begin to know how search results are ranked • To begin to know which resources on the Internet I can download and use • know the Be Smart e-safety rules • know things I can share and things I should not share and explain the reasons • know the risks about who and who not to contact online • To know how to take a picture and video for a purpose. • To know the success criteria for creating digital content for a given purpose and audience. • To know how to edit a range of existing and their own media to create content. • To know how to evaluate their own content against success criteria and make improvements accordingly 	<ul style="list-style-type: none"> • Use a variety of multimedia software to present information e.g. word, PowerPoint, moviemaker • To be able to combine sequences of instructions and procedures to turn devices on or off. • To understand input and output. • To be able to use an ICT program to control an external device that is electrical and/or mechanical. • To use ICT to measure sound or light or temperate using sensors. • To be able to produce and upload a podcast • Create effective posters, booklets or PowerPoints that are appropriate for the age related audience • Use key words and phrases when searching information on a search engine • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • Begin to input data and formulas into a spreadsheet • Detect and correct errors in complex algorithms 	<ul style="list-style-type: none"> • Visual presenting techniques • Key word searches • Formula

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Year 6	<ul style="list-style-type: none"> • Know the most effective way to present information depending on the topic (data, fact file) • Know that search engines can provide us with efficient information in order of relevance • Know and understand what a computer network is including the internet – how they provide services and opportunities for communication and collaboration • Know that the internet provides engaging ways to revise topics in other areas of the curriculum • Know how their digital footprint can be shown on social media (podcasts, YouTube, WhatsApp) • Know that managing settings on social media apps can help with privacy and keep you safe • Know a range of ways to report concerns online or on social media • To know not to publish other people’s pictures or tag them on the internet without permission. • To know how to design and create a more complex algorithm (including with pencil and paper) • To begin to know how data travels across networks in packets • To know how data is broken up into packets and reconstructed when we receive it • To know that websites can use my data to make money and target their advertising • Know how to help my friends to protect themselves and make good choices online, including reporting any concerns to a trusted adult • To know about different types of online scams people our age may experience, including ‘phishing’. 	<ul style="list-style-type: none"> • Create a sophisticated multimedia presentation • To present a film for a specific audience and then adapt same film for a different audience. • Use logical reasoning to explain how a simple algorithm works and detect/correct errors in algorithms and programs • Detect algorithms in the outside world (traffic lights) • To use an ICT program to control a number of events for an external device. • To be able to use ICT to measure sound, light or temperature using sensors and interpret the data. • Design, write and debug programmes that accomplish specific goals including controlling or simulating physical systems • To write programs that have sequences and repetitions. • Use sequence, selection and repetition in programmes • Work with variables and various forms of input and output • To check and refine a series of instructions. • Detect, correct and justify errors in complex algorithms • Solve problems in programs by breaking them down into smaller parts • Use search technologies effectively, appreciate how results are selected and ranked being discerning in evaluating digital content • Select, use and combine a variety of software, including internet based services, to design and create programs, systems or content to accomplish a given goal • To be able to create their own database and present information from it. 	<ul style="list-style-type: none"> • Understanding how to use technology safely, respectfully and responsibly- recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content or contact Problems around complex algorithm • Digital footprint • Phishing, scams and target advertising

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	<ul style="list-style-type: none">• <i>To know the design process when creating content (e.g. identify problem, plan, create, evaluate, share)</i>• <i>To know what a spreadsheet is and what it is used for.</i>• <i>To know how to collect data for a purpose and plan out a spreadsheet to present it effectively</i>• <i>To know how to select and combine a range of media to create content.</i>		
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