

Glenmere Community Primary School

Skills and Knowledge Grid: Computing & ICT

Year	Computing system and network skills	Presenting information and creating multimedia skills	Data and information skills	Programming and algorithms skills	
6	Type efficiently using both hands Use a range of keyboard shortcuts Recognise that different devices may have different operating systems Organise files effectively using folders and file names Use the advanced search tools when using a search engine to find specific information and images Explain the basic function of an operating system Recognise common file types and extensions, e.g. jpeg, png, doc, wav	Select, combine and remix a range of media to create original content Consider all steps of the design process when creating content (e.g. identify problem, plan, create, evaluate, share) Identify the most effective tools to present information for a specific purpose Explain the benefits of using technology to collaborate with others Evaluate existing content in terms of effectiveness and design	Recognise what a spreadsheet is and what its used for Explain the difference between physical, mobile and wireless networks Use simple formulae in a spreadsheet to find out information from a set of data Collect data for a purpose and plan out a spreadsheet to present it effectively, using relevant formulae Produce graphs from data in a spreadsheet to answer a question Analyse and evaluate data and information in a spreadsheet, chart or database Recognise that poor quality data leads to unreliable results	Design and program a physical computing system that uses sensors Recognise and use procedures (sub- routines) in a program Plan out a program to detail, including task, algorithm, code and execution level Explain common errors in programs and how to fix them Use nested selection statements in a program or algorithm effectively Combine a variable with relational operators (< = >) to determine when a program changes, e.g. if score > 5 say "Well done" Recognise key concepts (sequence, selection, repetition and variables) in a range of languages and contexts	Understand th "chunked" usi a form of abst variables can b different types game usually o Understand th ownership and Understand ar respectfully. U digital citizen a support. Under
5	Type using fingers on both hands Use common keyboard shortcuts, e.g. ctrl C (copy) ctrl V (paste) Explain what makes a strong password Use folders to organise files Know how to mute and unmute on a computer or tablet Recognise that there is more than one search engine and they may produce different results Use a search engine effectively to find information and images Know how to search for an application on a computer/tablet	Identify and use appropriate hardware and software to fulfil a specific task Remix and edit a range of existing and their own media to create content Consider the audience when designing and creating digital content Recognise the benefits of using technology to collaborate with others Identify success criteria for creating digital content for a given purpose and audience Evaluate their own content against success criteria and make improvements accordingly	Explain the difference between data and information stored in a database, chart or table Appreciate that different programs work with different types of data, e.g. text, number, video, paper database Explain the difference between the Internet and the World Wide Web Know the difference between a search engine and a web browser Explain the basics of how search engines work Perform searches for information using advanced settings in search engines Recognise the benefits and risks of sharing data online Use, create and compare visual databases	Name a range of sensors in physical systems Recognise the different solutions may exist for the same problem Predict what will happen in a program or algorithm when the input changes (e.g. sensor, data or event) Use two-way selection in programs and algorithms, i.e. ifthen else Recognise variables in a program and what they do Create programs including repeat until loops Create and use simple variables, e.g. to keep score Evaluate a program and make improvements to the code or design accordingly Create an algorithm for a physical system containing a sensor	Understand ar programming repetition and to plan out a p task, algorithm (levels of abstr Understand ho stored in the c in real time so collaboratively Understand ho effectively in t Understand ho the different s Understand ho content and b content

Knowledge

hat programs can be ing procedures and that this is traction. Understand that be used to store data of es. E.g. The score within a consists of name and value. hat the content found has d is protected by copyright. nd use the internet safely and Jnderstand how to be a good and where to go for help and erstand data and information.

nd apply the three main constructs, sequence, d selection. Understand how program in detail, including m, code and execution level. craction)

ow files can be created and cloud and shared with others o that they can be worked on y

- ow to communicate
- the digital world
- ow the internet works and services it provides.
- ow to find relevant, reliable be discerning about that



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4	Recognise that you can organise files using folders Explain what a good file name would look like Delete and move files Use key parts of a keyboard effectively (e.g. shift, arrows keys, delete) Know how to copy/paste text into a document Crop an image and apply simple filters Use a search engine to find specific information Recognise that school computers are connected on a network	Collect, organise and present information using a range of media Design and create digital content for a specific purpose, e.g. poster, animation Edit digital content to improve it according to feedback Identify the features of a good piece of digital content and apply these in own design Explain the benefit of using technology to present information Know where to find copyright-free content, e.g. creative commons images Collaborate with peers using online tools e.g. blogs, Google Drive, Office365,	Draw conclusions from information stored in a database, chart or table Design a questionnaire and collect a range of data on a theme Choose appropriate formats to present data to convey information Recognise that data can be collected on digital devices and sensors automatically Use a computer program to sort data by attributes Present the same data in a graph and in a chart Know that you use a web browser to access information stored on the internet Appreciate that you need to use specific software to work with video, images, audio, etc.	Create a program using a range of events/inputs to control what happens Recognise that we can decompose a problem into smaller parts to help solve it Explain when to use forever loops and count-controlled loops, and use them in programs Recognise selection in a program or algorithm Use selection in algorithms in programs to alter what happens when a condition changes e.g. if then Design a program for a purpose Recognise common mistakes in programs and how to correct them	Understan programm Understan actions). Understan programs Understan present in Understan create mu

lerstand sequence and repetition gramming constructs.

- lerstand that algorithms are
- lemented as code and must be precise. lerstand input and output (events and

lerstand how to debug algorithms and

lerstand how to use digital devices to sent information and data purposefully. lerstand how to use multiple apps to ate multimedia content for a purpose



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3Recognise what a computer is (input>process>output) Explain the difference between input/output devices on a computer Know where to save and open files (e.g. in shared folder)Present information using a suitable chart present information using a suitable chart based program (Scratch, discover Y coding) Design and create simple digital content to text text light and double-click on the mouse Add an image to a document from the internet. Resize and move an image in a document Use a search engine to find simple information Recognise that school computers are connectedPresent information present information using a suitable chart present information in a digntithm containing corate charts and database, e.g. recare field, eserch Name some benefits of using a computer to create charts and databases fromation in databases fromation in databases and branching databases to pictogramsPredict the outcome of a block or text- based program (Scratch, discover Y coding) Modify an existing pregram e.g. change to create charts and databases e.g. recare field using the computer sing a suitable chart present information in a documentPresent information a document to help pin out a program or algorithm leantly there the present information in a documentPr		Skills and knowledge ond. computing & let				
(input>processoutput)combining media independently, e.g. text, imagesdatabases and why we use them Present information using a suitable chart present information using a suitable chart informationbased program (Scratch, discover Y coding) Modify an existing program e.g. change background, number of times thing happenhelp plSave files with appropriate names Use a keyboard effectively to type in text Use left, right and ouble-click on the mouseIdentify the features of a good pice of media to convey information, e.g. text, image, audio, videodatabases of a database, e.g. record, field, search Add an image to a document from the informationbackground, number of times thing happenhodger to controlled loopshodger treat to media to convey information, e.g. text, image, audio, videohodger texthodger texthodger texthodger texthodger textUse a carch engine to find simple informatione.g. exit, mage, audio, videoreact charts and databases to creat charts and databases connectedCreate questions using yes or no Name some benefits of using a computer to create charts and databases connectedName the key parts of a databases compare databases and branching databases to pictogramsIdentify terce tox text-based program or algorithmhodger tercet them to databases to control al databasehodger tercet them to databases to control al programhodger tercet them to control al programhodger tercet them tercet them to control al programhodger tercet them to control al programhodger tercet them tercet them to control al programhodger tercet them to	3	Recognise what a computer is	Present ideas and information by	Recognise charts, pictograms, branching	Predict the outcome of a block or text-	Understar
Explain the difference between input/output devices on a computer to where to save and open files (e.g. in shared folder)images Design and create simple digital content to a purpose/audience, e.g. poster Edit digital content to improve it, e.g. resize textPresent information using a suitable chart Explore a record card database to find out informationModify an existing program e.g. change background, number of times things happenUnders creatin them a Use filters in a database to find specific informationModify an existing program e.g. change background, number of times things happenUnders creatin them a Use filters in a database to find out information use a keyboard effectively to type in text Use left, right and double-click on the mouseModify an existing program e.g. change Unders Unders Create purpose/audience, e.g. poster Edit digital content to improve it, e.g. resize textPresent information information use filters in a database to find out information in a database. Count controlled loops to make a program more efficient to reate charts and databases Recognise that school computers are connectedModify an existing program e.g. change UndersUnders create information a database compare databases to find out information in a database. Compare databases and branching databases to pictogramsModify an existing program e.g. change UndersUnders createInternet. Resize and move an image in a document Use a search engine to find simple information informationInternet. Resize and move an image information databases Compare databases and branching databases to pictogramsModify an existing program e.g. change UndersUnders the		(input>process>output)	combining media independently, e.g. text,	databases and why we use them	based program (Scratch, discover Y coding)	help plan
input/output devices on a computer Know where to save and open files (e.g. in shared folder)Design and create simple digital content for a purpose/audience, e.g. poster Edit digital content to improve it, e.g. resize textExplore a record card database to find out informationbackground, number of times things happenrecrain them a locationSave files with appropriate names Use left, right and double-click on the mouse Add an image to a document from the Internet. Resize and move an image in a documentUse filters of a good piece of atabase.Use filters of a database, e.g. record, field, search Andwa nimage to a document from the Internet. Resize and move an image in a documentRecognise why we use different types of media to convey information, e.g. text, image, audio, videoAnswer questions using yes or no Name some benefits of using a computer normation in databases Recognise that school computers are connectedDesign and create simple digital content for adatabase.Besign and create simple digital content for information in database.Design and create simple digital content for adatabase.Besign and create simple digital content for adatabase.Design and create simple digital content for adatabase.Create questions using yes or no Name some benefits of using a computer information in databases to pictogramsDesign and create different types for adatabase.Recognise that search engines store information in databases.Becognise that search engines store information in databases.Design and create them Recognise that different inputs can be used to control a programDesign and create single them a UndersUse filterInternet.Design and cr		Explain the difference between	images	Present information using a suitable chart	Modify an existing program e.g. change	Understa
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Use a search engine to find simple to create charts and databases Recognise that search engines store program or algorithm Recognise that school computers are connected Compare databases and branching databases to pictograms Program and correct them Recognise that different inputs can be used to control a program Program Recognise that different inputs can be used		document		Name some benefits of using a computer	to help plan out a program	
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connected Compare databases and branching databases to pictograms program and correct them Recognise that different inputs can be used to control a program control a program		Recognise that school computers are		information in databases	Identify errors in a block or text-based	
databases to pictograms Recognise that different inputs can be used to control a program		connected		Compare databases and branching	program and correct them	
to control a program				databases to pictograms	Recognise that different inputs can be used	
					to control a program	

- and that we create algorithms to and design a program and the processes involved in algorithms and then implementing
- a program.
- and decomposition and and use digital devices to
- and store content.
- and how text and images can be

and that information is data that processed.



Glenmere Community Primary School Skills and Knowledge Grid: Computing & ICT

	Skills did knowledge ond: computing d let					
2	Recognise what a computer is	Create simple digital content for a purpose,	Recognise tally charts, pictograms,	Explain that computers have no	Understand that algorithms and programs	
	(input>process>output)	e.g. digital art, poster	branching databases, and why we use them	intelligence and we have to program them	are different	
	Recognise that a range of digital devices	Recognise that we can use technology to	Explain information shown in a simple	to do things	Understand that when an algorithm is	
	contain computers, e.g. laptop, tablet,	record and playback audio or take and view	chart or pictogram	Create a program with multiple steps, e.g	inputted into a computer it's called a	
	phone, games console, smart speaker	photographs	Identify the key features of a chart or	to control a floor robot	program.	
	Explain what the basic parts of a computer	Apply edits to digital content to achieve a	pictogram	Predict the outcome of an algorithm or	Understand that programs execute by	
	are used for	particular effect, e.g. emphasise part of a	Collect data on a topic (eye colour, pets,	program with multiple steps	following precise and unambiguous	
	Identify and use input devices, e.g. muse,	text	etc.) and present in a pictogram or chart	Recognise that the instructions in an	instructions	
	keyboard and output devices, e.g.	Present ideas and information by	Modify simple charts/pictograms, e.g. add	algorithm need to be clear and	Use logical reasoning to predict the	
	speakers, screen	combining media, e.g. text and images	title, item, or labels	unambiguous	outcome of a program or an algorithm. E.g	
	Save and open files to/from a given folder	Explain that you can search for information		Identify and correct errors in each	Where will the programmable toy or on-	
	Resize an image in a document, highlight	on the Internet		algorithm or program and recognise the	screen sprite end up?	
	text and use arrow keys	Plan out digital content, e.g. a simple		term debugging	Understand that computing devices can be	
	Capture media independently (e.g. take a	sketch or storyboard		Explain what an algorithm is, and that	used for creating different media	
	photo, record audio)	Identify the common features of digital		when inputted on a computer it is called a	Understand that computing devices have a	
		content, e.g. title/images		program	memory and can store the media that is	
		Recognise that we can use different types		Plan out a program by creating an	created.	
		of media to convey information, e.g. text,		algorithm and evaluate its success	Understand that computing devices can be	
		image, audio, video		Ŭ	used to store and process data and	
					information.	
					Understand that IT is everywhere and plays	
					a role in all our lives.	
					Understand that there are many different	
					types of computers	
					Understand that many everyday devices	
					and toys have computers or are controlled	
					by computers	



Glenmere Community Primary School

Skills and Knowledge Grid: Computing & ICT

1	Name a range of digital devices, e.g. laptop, tablet, phone, games console Log onto the school computer, unlock the school tablet with support Identify the basic parts of a computer e.g. mouse, screen, keyboard Use a suitable access device (mouse, keyboard, touchscreen, switch) to access and control an activity on a computer Open key applications independently Save and open files with support Add an image to a document from a given folder/source with support	Create digital content, e.g. digital art Choose media from a selection (e.g. images, video, sound) to present information on a topic Recognise that you can find out information from a website Recognise that you can edit digital content, e.g. filter on an image/font/size of paintbrush Combine media with support to present information, e.g. text and images	Recognise different digital forms of content. i.e, text, image, video, audio Collect simple data, (e.g. likes/dislikes) on a topic Present simple data using images, e.g. number of animals Recognise tally charts and pictograms and why we use them	Recognise that computers don't have a brain Explain that we control computers by giving them instructions Create a simple program, e.g. to control a floor robot, - create a simple algorithm Predict the outcome of a simple algorithm or program Explain what an algorithm is – a sequence of instructions to make something happen Recognise that the order of instructions in an algorithm is important Debug an error in a simple algorithm or program, e.g. a floor robot	Understand that an algorithm are precise step by step set of instructions to do something Understand the programming construct of sequence Understand the term debug and how to do simple debugging e.g for a bee-bot Understand input Understand that controls can be different depending on the device we are using. Understand that there is a range of computing devices Understand that many everyday devices and toys have computers or are controlled by computers
EYFS	Recognise and use different digital devices Recognise that you can access content on a digital device Use a mouse, touchscreen or appropriate access device to target and select options on a screen Recognise the basic parts of a computer e.g. mouse, screen, keyboard Select a digital device to fulfil a specific task, e.g. to take a photo	Use technology to explore and access digital content Operate a digital device with support to fulfil a task, e.g. marking making on a tablet Create simple digital content, e.g. art/patterns Choose media to convey information, e.g. image for a poster	Access content in a range of formats. E.g. image, video audio Answer basic questions about information displayed in images	Explore technology Repeat an action with technology to trigger a specific reaction Recognise the success or failure of an action Follow simple instructions to control a digital device Recognise that we control computers Input a short sequence of instructions to control a device	Understand that a keyboard and mouse is used to control a computer Understand that there is a range of computing devices Understand how to access computing devices Understand how to use basic tools of a simple program Understand how to sort objects (data sorting Understand that programming is a set of instructions