

Curriculum Intent Statement for:

'At Kingsway Primary School, we aim to prepare our children for a rapidly changing world where work and leisure activities are increasingly transformed by technology. Through the study of computing and online safety, we want our children to acquire the knowledge and skills that enable them to become creative and autonomous within a digital world that extends beyond our school gates. We will deliver a robust, accessible curriculum from which children use 'computational thinking' to create a range of content and become responsible digital citizens.'

Year		
	Knowledge	Skills
R	<p>Online Safety To know what to do when To know what is appropriate to share when online.</p>	<p>TC taxonomy: Computing Systems/Impact of technology Children can login using a username and password. Children can access an age-appropriate app to develop their learning.</p>
	<p>Using Technology To recognise that a range of technology is used in places such as homes and schools. To name and use a variety of technological hardware. (<i>Chromebooks, Interactive Whiteboard, laptop, computer</i>) To know how to operate simple equipment (eg. Turns on a CD player and uses a remote control). To show an interest in technological toys with buttons or pulleys or real objects such as cameras or mobile phones.</p>	<p>TC taxonomy: Computing Systems/Impact of technology Children can develop skill in using different tools to control technology</p>
	<p>Modelling and Simulations To understand computer representation allows the user to make choices and that different decisions produce different outcomes.</p>	<p>TC Taxonomy: Effective use of Tools Children can use a mouse to access applications on a computer. Children can use swipe/drag gestures when using a touchscreen device.</p>
	<p>Programming and Control To know that they can programme a simple sequence of commands into a programmable robot or toy to send it on a route. To use language to describe position and apply this to hardware (<i>Beebots</i>)</p>	<p>TC Taxonomy: Programming Children can program a Beebot to navigate using step by step commands.</p>
	<p>Communicating and collaborating online To know that messages can be sent electronically over distances.</p>	<p>TC Taxonomy: Effective use of Tools Children can contribute ideas to a class e-mail.</p>
	<p>Creating and Publishing To use technology to combine text with photographs, graphics and drawings.</p>	<p>TC Taxonomy: Effective use of tools Children can navigate and type on a keyboard. Children can select electronic pictures and present these with text.</p>
	<p>Digital Media To know they can explore sound and music using technology. To know that they can record sounds using ICT that can be stored and played back. To know that photographs can be taken for a range of different purposes.</p>	<p>TC Taxonomy: Creating Media Children can create sound using computer programs. Children can choose when to take photographs and/or video for different purposes.</p>

Year 1	Computing Systems and networks – Technology around us To identify a computer and its main parts To know how to locate examples of technology in the classroom To know how technology helps us To know what a keyboard is used for To know how to keep safe and health when using technology in and beyond the home.	TC Taxonomy: Computing Systems/Impact of Technology Children can switch on and log into a computer Children can use a mouse to click and drag Children can click and drag to make objects on a screen Children can type their name on a computer Children can delete letters Children can use arrow keys to move the cursor
	Creating media – Digital painting To know how to draw lines on a screen and explain which tools were used To know how to make marks on a screen and explain which tools were used To know how to choose appropriate shapes To know that different paint tools do different jobs To know the differences between painting on a computer and on paper	TC Taxonomy: Creating Media/Effective use of tools/Design and development Children can make marks with the square and line tools Children use the shape and line tools effectively Children use the shape and line tools to recreate the work of an artist Children can change the colour and brush sizes Children can make dots of colour on the page Children I can use dots of colour to create a picture in the style of an artist on my own
	Programming A – Moving a robot To know what a given command will do To know how to follow an instruction To know how to match a command to an outcome To know how to debug a program To find out more than one solution to a problem	TC Taxonomy: Algorithms/Programming Children can match a command to an outcome Children can predict the outcome of a command on a device Children can run a command on a device Children can give directions Children can recall words that can be acted out Children can plan two programs and can use two different programs to get to the same place
	Data and information – Grouping data To know the label for a group of objects To know how to describe the property of an object To know how to group objects To know how to record and share what I have found	TC Taxonomy: Data and information Children can match objects to groups Children can find objects with similar properties Count how many objects share a property Children can describe groups of objects. Children can compare groups of objects
	Creating media – Digital writing To know how to identify and find keys on a keyboard To know how to open a word processor To identify the toolbar and use bold, italic and underline To know the differences between typing and writing	TC Taxonomy: Creating Media/Effective use of Tools Children can enter text into a computer Children can use backspace to remove text Children can use letter, number, and space keys Children can change the font Children can select all of the text by clicking and dragging Children can select a word by double-clicking Children can use 'undo' to remove changes
	Programming B – An introduction to animation To know the commands to move a sprit To know the how to use a start block in a program To know what happen when a value is changed To know to create an algorithm for multiple sprites	TC Taxonomy: Programming and Design and Development - I can find which commands to move a sprite - I can use commands to move a sprite - I can use more than one block by joining them together - I can add blocks to each of my sprites - I can test the programs I have created
	Computing systems and networks – IT around us To know and identify examples of IT To know the different uses of IT in school To know why we use IT To know how rules can keep me safe	TC Taxonomy: Computing Systems, Networks, Impact of Technology Children can identify that a computer is part of IT Children can sort by where IT is found Children can list different uses of IT Children can identify the choices I make when using IT
Year 2		

		Children can use IT for different types of activities.
	Creating media – Digital photography To know what devices can be used to take photographs To know how to make a good photograph To know what is wrong with a photograph To know how photographs can be improve	TC taxonomy: Creating Media, Effective use of Tools Children can take photos in both landscape and portrait format Children can improve a photo by retaking it Children can explore the effect that light has on a photo Children can use a tool to a desired effect Children can apply a range of photography skills to capture a photo
	Programming A – Robot algorithms To know a series of words that can be enacted as a sequence To know what happens when we change the order of instructions To know what my algorithm should achieve To know how to put together the different parts of my program To know how to test and debug part of the program	TC taxonomy: Algorithms, Programming, Design and Development Children can give clear and unambiguous instructions Children can use an algorithm to program a sequence on a floor robot Children can follow a sequence Children can identify different routes around a mat Children can create an algorithm to meet a goal.
	Data and information – Pictograms To know how to represent a tally count as a total To know how use a computer to view data in a different format To know how to use a tally chart to create a pictogram To know simple examples of why information should not be shared	TC taxonomy: Effective use of Tools, Data and Information Children can record data in a tally chart Children can represent a tally count as a total Children can enter data into a computer Children can answer more than/less than and most/least questions about an attribute Children can create a pictogram and draw conclusions from it Children can use a computer program to present information in a variety of ways
	Creating media – Making music To know how to use a computer to create a musical pattern using three notes To know how to reopen my work on the computer	TC taxonomy: Creating Media, Data and Information, Effective use of tools Children can identify that music is a sequence of notes Children can refine my musical pattern on a computer Children can describe an animal using sounds Children can explain my choices Children can save my work
	Programming B – An introduction to quizzes To know how to identify the start a sequence To know how to change the outcome of a sequence of commands To know how to create a program based on a design To know how to build sequences of blocks to match a design	TC taxonomy: Design and development, Programming Children can predict the outcome of a sequence of commands Children can choose character for the design Children can work out the actions of a sprite in an algorithm Children can compare their project to a design Children can improve their project by adding features
Year 3	Computing systems and networks – Connecting computers To know that digital devices accept inputs and produce outputs To know similarities and differences between digital and non-digital tools To know that a computer network is made up of a number of devices To know how devices in a network are connected together	TC taxonomy: Computing Systems, Networks Children can classify input and output devices Children can design a digital device Children can describe a simple process Children can demonstrate how information can be passed between devices
	Creating media – Animation To know how and animation/flipbook works To know how to make an animation better To know how to use onion skinning to make small images between frames To know how to add other media to an animation	TC taxonomy: Creating Media, Design and Development, Effective Use of Tools Children can draw a sequence of pictures Children can create an effective stop-frame animation Children can break down a story into settings, characters and events Children create a story board.
	Programming A – Sequence in music To know that objects in Scratch have attributes. To know that commands in Scratch are represented as blocks To know that each sprite is controlled by the commands I choose	TC taxonomy: Programming Children can create a program following a design Children can start a program in different ways Children can order notes into a sequence

	To know how to relate a task description to a design	Children can build a sequence of commands Children can implement an algorithm as code
	Data and information – Branching database To know how to group objects using my own yes/no questions To know how to arrange objects into a tree structure To know that questions needs to be ordered carefully to split objects into similarly sized groups. To know what a branching database tells me	TC taxonomy: Data and Information, Effective use of tools Children can create two groups of objects separated by one attribute Children can make up yes/know questions about a collection of objects Children can select objects to arrange in a branching database Children can compare two branching database structures Children can use a data base to answer questions
	Creating media – Desktop publishing To know the advantages and disadvantages of using text and images To know that text can be changed to communicate more clearly To know that what ‘page orientation’ means To know how desktop publishing can be used in the real world	TC taxonomy: Creating Media, Effective use of tools Children can change font style Children can change font style, size, and colours for a given purpose Children can edit text Children can match a layout to its purpose Children can compare work made on desktop publishing to work created by hand.
	Programming B – Events and actions To know which keys to use for actions and explain choices To know how to improve a program To know how to choose suitable keys to turn on additional features To know how to modify a program to turn on additional features	TC taxonomy: Programming Children can program movement Children can choose a suitable size for a character in a maze Children can build more sequences of commands to make my design work Children can use a programming extension Children can match a piece of code to an outcome
Year 4	Computing Systems and networks – The internet To know how information is shared across the internet To know why a network needs protecting To know that the internet is used to provide many services To know that websites and their content are created by people To know that some information that is found online may not be honest, accurate or legal	TC taxonomy: Networks Children can add content to the WWW Children can suggest who owns the content on websites
	Creating media – Audio editing To know that digital devices can record sounds and play it back To know that inputs and outputs are required to play audio and record sound To know why it is useful to be able to save digital recordings To know how to improve digital recordings	TC taxonomy: Creating Media, Effective use of tools Children can plan and write the content for a podcast Children can use a device to record audio and play back sound Children can edit sections of an audio recording Children can use editing tools to arrange sections of audio
	Programming A – Repetition in shapes To know how to use a count-controlled loop to produce a given outcome To know how to identify the effect of changing the number of times a task is repeated To know that a computer can repeatedly call a procedure To know how to develop a program by debugging it	TC taxonomy: Programming, algorithms Children can create a code snippet for a given purpose Children can write and test and algorithm to produce a given outcome Children can choose which values to change in a loop Children can use a procedure in a program
	Data and information – Data logging To know that data can gathered over time To know that sensors are input devices To know that data from sensors can be recorded To know the benefits of using a data logger	TC taxonomy: Data and information, Effective use of tools Children can use data from a sensor to answer a given question Children can identify a suitable place to collect data Children can import a data set Children can use a computer program to sort and view data in different ways Children can plan how to collect data using a data logger
	Creating media – Photo editing To know how images can be changed in real life To know why someone might want to change the composition of an image To know the positive and negative effects that retouching can have on an image To know what a fake image is	TC taxonomy: Creating Media, Effective use of tools Children can change the composition of an image by selecting parts of it Children can choose effects to make my image fit a scenario Children can consider the effect of adding other elements to their work Children can sort images in to ‘real’ or ‘fake’

	<p>Programming B – Repetition in games To know that some programming languages enable more than one process To know what the outcome of a repeated action should be To know which parts of a loop can be changed To know how to refine an algorithm in my design</p>	<p>TC taxonomy: Digital Design, Programming Children can modify a snippet of code to create a given outcome Children can modify infinite loops to produce a given outcome Children can re-use existing code snippets on new sprites Children can design and create a project that includes repetition</p>
Year 5	<p>Computing systems and networks – Sharing information To know that computers can be connected together to form systems To know the role of computer systems in our lives To know how information is transferred over the internet To know how sharing information online lets people in different places work together</p>	<p>TC taxonomy: Networks Children can describe that a computer system features inputs, processes and outputs Children can identify tasks that are managed by computer systems Children can send information over the internet in different ways Children can compare working online with working offline</p>
	<p>Creating media – Video editing To know what makes a video effective To know the different features of videos To know that video is a visual media format To know how to improve a video by reshooting and editing To know that choices when making a video will impact on the quality of the final outcome</p>	<p>TC taxonomy: Creating Media Children can compare features in different videos Children can make use of a microphone Children can capture video using a range of filming techniques Children can outline the scenes of a video Children select the correct tools to make edits to a video and improve the final outcome</p>
	<p>Programming A – Selection in physical computing To know how to control a simple circuit connected to computer To know how to write a program that includes count-controlled loops To know that a loop can be used to repeatedly check whether a condition had been met To know that a physical project can contain selection</p>	<p>TC taxonomy: Programming, Computing Systems Children can program a microcontroller to make an LED switch on Children can connect more than one output component to a microcontroller Children can use a count controlled loop to control outputs Children can design a conditional loop Children can program a microcontroller to respond to an input Children can test and debug a project</p>
	<p>Data and information – Flat-file databases To know how to use a form to record information To know the difference between paper and computer-based databases To know how grouping and sorting data allows us to answer questions To know that computer programs can be used to compare data visually</p>	<p>TC taxonomy: Data and Information, Effective use of tools Children can order, sort and group data cards Children can navigate a flat-file database to compare different views of information Children can combine grouping and sorting to answer more specific questions Children can outline how ‘AND’ and ‘OR’ can be used to refine data selection Children can select and refine a chart using a particular filter</p>
	<p>Creating media – Vector drawing To know how a vector drawing is different from paper-based drawings To know that vector drawings are made using shapes To know that each element added to a vector drawing is an object To know that vector drawings consist of layers</p>	<p>TC taxonomy: Creating Media, Effective use of tools Children can move, resize, and rotate objects that have been duplicated Children can modify objects to create different effects Children can use the zoom tool to help add detail to a drawing Children change the order of layers in a vector drawing Children can copy a part of a drawing by duplicating several objects</p>
	<p>Programming B – Selection in quizzes To know how selection is used in computer programs To know that a conditional statement connects a condition to an outcome To know how selection directs the flow of a program To know how to design and create a program which uses selection</p>	<p>TC taxonomy: Programming, Algorithms, Digital Design Children can modify a condition in a program Children can create a program with different outcome using selection Children can use selection on an infinite loop to check a condition Children can identify the outcome or user input in an algorithm Children can identify the setup code needed in a program</p>
Year 6	<p>Computing systems and networks – Communication To know how to use a search engine To know how search engines select results To know how search results are ranked To know why the order of results is important and to whom</p>	<p>TC taxonomy: Effective use of tools, Networks Children can compare results from different search engines Children can complete a web search to find specific information Children can relate a search term to the search engine’s index Children can describe some of the ways that search results can be influenced</p>

	To know how to communicate using technology	Children can compare different methods of communicating on the internet
	Creating media – Web page creation To know that websites are written in HTML To know the different types of media used on websites To know the common features of a website To know the ownership and use of images (copyright) To know the need for a navigation path To know the implications of linking to content owned by other people	TC taxonomy: Creating Media, Digital Design Children can draw a webpage layout that suits a purpose Children can find copyright-free images Children can add content to their own website Children can make multiples web pages and link them using hyperlinks Children can create hyperlinks to link to other people’s work
	Programming A – Variables in games To know that a variable is something that is changeable To know why a variable is used in a program To know how to improve a game using variables To know how to design and implement a project that builds on a given example	TC taxonomy: Digital Design, Programming Children can explain that a variable has a name and a value Children can recognise that the value of a variable can be changed Children can decide where in a program to change a variable Children can create algorithms for a project Children can extent a game further by using more variables
	Data and information – Spreadsheets To know that objects can be described using data To know that formulas can be used to produce calculated data To know how to apply formulas to data, including duplicating To know suitable ways to present data	TC taxonomy: Data and information, Effective use of tools Children can apply an appropriate number format to a cell Children can build a data set in a spreadsheet application Children can construct formula in a spreadsheet Children apply a formula to multiple cells by duplicating Children can create a formula that includes a range of cells
	Creating media – 3D Modelling To know how to use a computer to create and manipulate three dimensional digital objects To know how to work digitally with 2D and 3D graphics To know how to construct a digital 3D model of a physical object To know that physical objects can be broken down into a collection of 3D shapes	TC taxonomy: Creating Media, Effective use of tools Children can identify the similarities and differences between 2D and 3D shapes Children can select, move and delete a digital 3D shape Children can change the colour of a 3D object Children can resize and rotate a 3D object Children can create digital 3D objects of an appropriate size Children can modify multiple 3D objects
	Programming B – Sensing To know how to create a program to run on a controllable device To know that selection can control the flow of a program To know how to update a variable with a user input TO know how to use a conditional statement to compare a variable to a value	TC taxonomy: Computing Systems, Programming Children can test a program on an emulator Children can transfer a program to a controllable device Children can use a variable in an if, then, else statement to select the flow of the program Children can experiment with different physical inputs Children can use an operand (eg. <=>) in an if, then statement Children can use a range of approaches to find and fix bugs