

Kingsway Primary Academy

COMPUTING



Curriculum INTENT

CORE VALUES:

CHILDREN FIRST

RESILIENCE

PIONEERING

Kingsway- **COMPUTING** progression through EYFS Understanding the World: Computing Overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
<ul style="list-style-type: none"> Finding out & exploring Playing with what they know Being willing to 'have a go' 	<ul style="list-style-type: none"> Being involved & concentrating Keep on trying Enjoying achieving what they set out to do 	<ul style="list-style-type: none"> Having their own ideas (creative thinking) Making links (building theories) Working with ideas (critical thinking)

ELG
NO ELG's are represented for this area.

Focus	Electronic Communication Understanding Technologies	Text and Multimedia	Research and E-Safety	Digital images and audio	Algorithms Handling information	Vocabulary- To be used daily.
Nursery Skills	<ul style="list-style-type: none"> Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets 	<ul style="list-style-type: none"> Knows how to operate simple equipment, e.g. turn on CD player, uses a remote control, can navigate touch-capable technology with support tablets 	<ul style="list-style-type: none"> Know how to handle equipment safely Begin to know that they shouldn't use devices without supervision 	<ul style="list-style-type: none"> Knows that information can be retrieved from digital devices and the internet 	<ul style="list-style-type: none"> Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images 	Choices, equipment, buttons, movement, screen, keyboard, count, organise,
Nursery Knowledge	<p style="text-align: center;">Autumn 1 Me and My Family</p> <ul style="list-style-type: none"> Explore different toys in role play such as telephones, cameras, keyboards. Know not to touch the teachers computer without supervision. 	<p style="text-align: center;">Autumn 2 Outside / Autumn</p> <ul style="list-style-type: none"> Can operate a simple CD player by pressing start and stop to play music. 	<p style="text-align: center;">Spring 1 Water</p> <ul style="list-style-type: none"> Understands that we can search for information on 'google' by typing in a word to find out more. 	<p style="text-align: center;">Spring 2 Journeys</p> <ul style="list-style-type: none"> Can use a simple I board touch programme to draw a picture by changing tools and colours using the onscreen options. 	<p style="text-align: center;">Summer 1 Life Cycles</p> <ul style="list-style-type: none"> Can operate simple games on the iPad and know to open and end a programme. 	<p style="text-align: center;">Summer 2 Superheroes</p> <ul style="list-style-type: none"> Can type their name on a keyboard by finding the letters of their name.

Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility.
Role-play areas will be a key area where a range of technologies will be used in play- telephones, microwaves, cookers, keyboards, televisions, CD player. These should be modelled .

Guiding Principle: "To deliver a first class education through partnership, innovation, school improvement and accountability."

CORE VALUES:

CHILDREN FIRST

RESILIENCE

PIONEERING

Kingsway- **COMPUTING** progression through EYFS Understanding the World: Computing Overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
<ul style="list-style-type: none"> Finding out & exploring Playing with what they know Being willing to 'have a go' 	<ul style="list-style-type: none"> Being involved & concentrating Keep on trying Enjoying achieving what they set out to do 	<ul style="list-style-type: none"> Having their own ideas (creative thinking) Making links (building theories) Working with ideas (critical thinking)

ELG
NO ELG's are represented for this area.

Focus	Electronic Communication Understanding Technologies	Text and Multimedia	Research and E-Safety	Digital images and audio	Algorithms Handling information	Vocabulary- To be used daily.
Reception Skills	<ul style="list-style-type: none"> Completes a simple program on electronic devices 	<ul style="list-style-type: none"> Begin to list different IT in their home 	<ul style="list-style-type: none"> Begin to give reasons why we need to stay safe online Can use the internet with adult supervision to find and retrieve information of interest to them 	<ul style="list-style-type: none"> Can create content such as a video recording, stories, and/or draw a picture on screen 	<ul style="list-style-type: none"> Develops digital literacy skills by being able to access, understand and interact with a range of technologies 	Internet, website, mouse, images, paint, technology, share, collect, set, sound, communicate, videos, photos, programme

Reception Knowledge	Autumn 1 People in my community	Autumn 2 Outside	Spring 1 Water	Spring 2 Journeys	Summer 1 Life Cycles	Summer 2 Super Heroes
	<ul style="list-style-type: none"> Can turn on an Ipad, open a programme and follow instructions. Can explain how to stay safe when using the internet. 	<ul style="list-style-type: none"> Can follow teachers' instructions when using an online interactive programme such as paint or draw. 	<ul style="list-style-type: none"> Can write a variety of CVC words using a keyboard. 	<ul style="list-style-type: none"> To collect information about the measurement of plants and see which was the best environment for growing in. 	<ul style="list-style-type: none"> Can use the I Pad and class cameras to take their own images Can send a group class email to a different class and wait for a response. 	<ul style="list-style-type: none"> Can use 'google' to find out more information about super heroes and use the images to support their own representations.

E-Safety	Computer Skills	Promramming	Word Processing skills	Data Collection
----------	-----------------	-------------	------------------------	-----------------

Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility. Role-play areas will be a key area where a range of technologies will be used in play- telephones, microwaves, cookers, keyboards, televisions, CD player. These should be modelled. Explicit teaching will be needed within this area when using Ipads and researching. This should take place in small, guided groups.

CORE VALUES:

CHILDREN FIRST

RESILIENCE

PIONEERING

Year 1: Computing skills progression

<p>KS1: POS</p> <ul style="list-style-type: none"> - understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - create and debug simple programs - use logical reasoning to predict the behaviour of simple programs - use technology purposefully to create, organise, store, manipulate and retrieve digital content - recognise common uses of information technology beyond school - use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. 	<p>Electronic Communication</p> <ul style="list-style-type: none"> - Contribute to a class email to another class/school/teacher etc
<p>Text and Multimedia</p> <ul style="list-style-type: none"> - Work with others and with support to contribute to a digital class resources which includes text, graphic and sound - Open and close windows - Turn a device on - Type using both hands 	<p>Research and E-Safety</p> <ul style="list-style-type: none"> - Explore information from a variety of sources - Save a picture from the internet
<p>Digital Images and audio (photos, paint, animation)</p> <ul style="list-style-type: none"> - Use a range of simple tools to modify a picture/create a picture/use a paint package 	<p>Algorithms (Control)</p> <ul style="list-style-type: none"> - Control simple everyday devices to make them produce different outcomes.
<p>Handling information (databases and graphs)</p> <ul style="list-style-type: none"> - As a class or individually with support, children use a simple pictogram to develop graphical awareness 	<p>Understanding technologies</p> <ul style="list-style-type: none"> - Show an awareness of the range of devices and tools they encounter in everyday life - Show an awareness that why they create one a computer or tablet can be shown to others via another device (e.g. printer, projector, Apple TV)

Year 1 – End points

<p>E-Safety</p>	<ul style="list-style-type: none"> • To develop skills to recognise potential dangers online and act accordingly to keep themselves and others safe. • To begin to understand what information should be kept safe when using the internet.
<p>Computer Skills</p>	<ul style="list-style-type: none"> • To begin to apply mouse and trackpad skills by launching applications, manipulating windows and opening and saving files and folders. • To begin to develop basic computer skills in order to use a desktop or laptop computer.
<p>Programming (with toys and Scratch Jr)</p>	<ul style="list-style-type: none"> • To begin to understand the principles of programming. • To understand an algorithm as a set of step-by-step instructions. • To begin to understand why it is important to be precise when writing an algorithm. • To develop a sense of creating, debugging and logical reasoning.
<p>Word Processing Skills</p>	<ul style="list-style-type: none"> • To begin to develop typing and word processing skills. • To have some knowledge of the location of letters and symbols on the keyboard.
<p>Data Collection</p>	<ul style="list-style-type: none"> • To understand data is information and this can be sorted into groups based on criteria. • To understand data can be represented in different ways.

CORE VALUES:

CHILDREN FIRST

RESILIENCE

PIONEERING

Year 2: Computing skills progression

<p>KS1: POS</p> <ul style="list-style-type: none"> - understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - create and debug simple programs - use logical reasoning to predict the behaviour of simple programs - use technology purposefully to create, organise, store, manipulate and retrieve digital content - recognise common uses of information technology beyond school - use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. 	<p>Electronic Communication</p> <ul style="list-style-type: none"> - Work collaboratively by email to share and request information of another class or story character
<p>Text and Multimedia</p> <ul style="list-style-type: none"> - Generate their own work combining in text, graphics and sound. - Save, retrieve and edit work 	<p>Research and E-Safety</p> <ul style="list-style-type: none"> - Use a search engine to find specific and relevant information to use in a topic - Use key words to search for specific information
<p>Digital Images and audio (photos, paint, animation)</p> <ul style="list-style-type: none"> - Use a range of tools and software to create or modify a picture to communicate an idea - Create a simple animation to tell a story 	<p>Algorithms (Control)</p> <ul style="list-style-type: none"> - Control a device, on and off screen, making predictions about the effect their programming will have
<p>Handling information (databases and graphs)</p> <ul style="list-style-type: none"> - Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions - Enter information into a simple branching database and use it to answer questions - Save, retrieve and edit work 	<p>Understanding technologies</p> <ul style="list-style-type: none"> - Show an awareness of a range of inputs to a computer (Interactive whiteboard, mouse, touch screen, keyboard) - Begin to show an awareness that computers can be linked to shared resources

Year 2 – End points

<p>E-Safety</p>	<ul style="list-style-type: none"> • Identify where to go for help and support when they have concerns about content or contact • To recognise a range of search engines, including Google, Bing and Yahoo
<p>Algorithms</p>	<ul style="list-style-type: none"> • To be able to create, test and debug algorithms • To begin to use directional language (forwards, backwards, quarter turn)
<p>Programming using Conditionals</p>	<ul style="list-style-type: none"> • To use conditional statements ('if' statements) when programming • To predict the outcome of a sequence in Scratch JR • To identify 'bugs' in an algorithm and 'debug' them accordingly

Guiding Principle: "To deliver a first class education through partnership, innovation, school improvement and accountability."

Presentation Skills	<ul style="list-style-type: none"> To be able to make a simple presentation using learnt skills To know how to save files in a folder
Data Collection	<ul style="list-style-type: none"> To understand the ways in which data can be collected To have the ability to create tally charts, bar charts and pictograms
Creating using technology	<ul style="list-style-type: none"> To demonstrate basic IT skills to create sprite or picture To create digital content using an app

CORE VALUES:

CHILDREN FIRST

RESILIENCE

PIONEERING

Year 3: Computing skills progression

<p><u>KS2: POS</u></p> <ul style="list-style-type: none"> - design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, 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. 	<p><u>Electronic Communication</u></p> <ul style="list-style-type: none"> - Show good understanding and awareness of the need to abide by school e-safety rules
<p><u>Text and Multimedia</u></p> <ul style="list-style-type: none"> - Record and present information integrating a range of appropriate media combining text and graphics in printable form 	<p><u>Research and E-Safety</u></p> <ul style="list-style-type: none"> - Using another curriculum area as a starting point, children ask their own question then use ICT sources to find answers, making use of search engines - Children talk about using ICT to find information/resources showing an emerging understanding of internet safety
<p><u>Digital Images and audio (photos, paint, animation)</u></p> <ul style="list-style-type: none"> - Manipulate digital images using a range of tools in appropriate software to convey a specific mood or idea 	<p><u>Algorithms (Control)</u></p> <ul style="list-style-type: none"> - Able to type a short sequence of instructions and to plan ahead when programming devices on and off screen
<p><u>Handling information (databases and graphs)</u></p> <ul style="list-style-type: none"> - Use a simple database (the structure of which has been set up for the) to enter and save information on a given subject - Follow straight forward lines of enquiry to search data 	<p><u>Understanding technologies</u></p> <ul style="list-style-type: none"> - Begin to show discernment in their use of computing devices and tools for a particular purpose and explain why their choice was made - Show an understanding that their password is the key to accessing a personalised set of resources and files - Show an awareness of where passwords are critical in everyday use (parents accessing bank details)

Guiding Principle: "To deliver a first class education through partnership, innovation, school improvement and accountability."

E-Safety	<ul style="list-style-type: none">• To support and use each other when using the internet and all digital media, in a safe and secure way.• To behave in a manner that will reduce risk and enable them to experience all the positive opportunities which are available to them online.• To discuss and begin to form opinions about some of the issues raised by the use of ICT and internet safety.
Programming and Algorithms	<ul style="list-style-type: none">• To know that algorithms are a sequenced structure of instructions that can be changed.• To break down problems into smaller parts (decomposing).
Programming using Scratch	<ul style="list-style-type: none">• To understand the benefit of being able to identify problems in an algorithm and being able to 'debug' them.• To know that algorithms are used in everyday life.
Internet	<ul style="list-style-type: none">• To understand the importance of word order when searching.• To begin to distinguish between a reliable and unreliable website or webpage.
Presentation Skills	<ul style="list-style-type: none">• To know that media processing programs can be used to present information.• To know the different ways presentations can be edited on media processing programs.• To understand how to use video and audio in presentations.

CORE VALUES:

CHILDREN FIRST

RESILIENCE

PIONEERING

Year 4 : Computing skills progression

<p>KS2: POS</p> <ul style="list-style-type: none"> - understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - create and debug simple programs - use logical reasoning to predict the behaviour of simple programs - use technology purposefully to create, organise, store, manipulate and retrieve digital content - recognise common uses of information technology beyond school - use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. 	<p>Electronic Communication</p> <ul style="list-style-type: none"> - Share work that has been done electronically (email) - Seek and respond to feedback
<p>Text and Multimedia</p> <ul style="list-style-type: none"> - Include sound and video for on-screen presentations which include hyperlinks Show an awareness of audience - Seek feedback 	<p>Research and E-Safety</p> <ul style="list-style-type: none"> - Make use of copy and paste becoming aware and showing an understanding of plagiarism - Understand not all information on the internet is accurate - Develop a growing awareness of how to stay safe when using the internet (in school and at home) - Understand the school's internet policies
<p>Digital Images and audio (photos, paint, animation)</p> <ul style="list-style-type: none"> - Make a short film/animation from images (still and/or moving) that has been sourced, captured or created 	<p>Algorithms (Control)</p> <ul style="list-style-type: none"> - Use control software devices or simulate this on screen (Scratch) - Predict, test and refine programming
<p>Handling information (databases and graphs)</p> <ul style="list-style-type: none"> - Work as a class or group to create a data collection sheet and use it to set up a simple database - Enter information and interrogate it (by searching, sorting and graphing etc) 	<p>Understanding technologies</p> <ul style="list-style-type: none"> - Make choices about devices and tools used for specific purpose and explain in relation to context - Begin to show an awareness of specific tools used in working life - Show an awareness of the need for accuracy in spelling and syntax to search effectively

Year 4 – End points

E-Safety	<ul style="list-style-type: none"> • To continue to support and use each other when using the internet and all digital media, in a safe and secure way. • To continue to behave in a manner that will reduce risk and enable them to experience all the positive opportunities which are available to them online.
Word Processing Skills	<ul style="list-style-type: none"> • To understand that word processing documents are used to organise information. • To be able to utilise a number of features on a word processing program. • To use word processing and media processing programs to display information.
Presentation Skills	<ul style="list-style-type: none"> • To create presentations using slide transitions and animations • To consider layout using text boxes, columns, tables and borders.
Programming	<ul style="list-style-type: none"> • To use logical reasoning to explain how some simple algorithms work. • To understand that prediction, trial and error are important when controlling devices to achieve a specific outcome.
Animation (and project)	<ul style="list-style-type: none"> • To understand that animation is a sequence of pictures that are manipulated to appear as moving images. • Be able to discuss a minimum of two different styles of animation and compare and contrast the good and bad points. • To use and apply skills learnt previously in a project that involves designing, creating and evaluating a character.

Year 5: Computing skills progression

<p><u>KS2: POS</u></p> <ul style="list-style-type: none"> - understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - create and debug simple programs - use logical reasoning to predict the behaviour of simple programs - use technology purposefully to create, organise, store, manipulate and retrieve digital content - recognise common uses of information technology beyond school - use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. 	<p><u>Electronic Communication</u></p> <ul style="list-style-type: none"> - Recognise binary code - Write basic HTML - Understand webpages as a form of communication
<p><u>Text and Multimedia</u></p> <ul style="list-style-type: none"> - Use advanced tools in word processing such as text formatting, line spacing etc 	<p><u>Research and E-Safety</u></p> <ul style="list-style-type: none"> - Understand the purpose of copyright regulations and the need to repurpose information for a particular purpose - Independently and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic
<p><u>Digital Images and audio (photos, paint, animation)</u></p> <ul style="list-style-type: none"> - Use images created or captured as part of a bigger project - Create multiple track compositions that contain a variety of sounds 	<p><u>Algorithms (Control)</u></p> <ul style="list-style-type: none"> - Create command sequences to control devices in response to sending (i.e. uses inputs as well as outputs)
<p><u>Handling information (databases and graphs)</u></p> <ul style="list-style-type: none"> - Set up and use a spreadsheet model to explore patterns and relationships - Know how to enter simple formulae to assist this process (SUM, AVERAGE, MIN & MAX) 	<p><u>Understanding technologies</u></p> <ul style="list-style-type: none"> - Show an understanding of the school network and how it links computers in school and beyond - Compare this with other known networks that may be encountered at home or in the wider world (e.g. banks, hospitals)

Year 5 – End points

<p>E-Safety</p>	<ul style="list-style-type: none"> • To understand the concept of copyright and what that means when using the internet. • To understand that plagiarism is the act of using someone else's work and pretending it is your own. • Understand how to make a positive contribution to online communities.
<p>Presentations</p>	<ul style="list-style-type: none"> • Ability to use a range of multimedia and word processing packages (word and PowerPoint). • Understand that a hyperlink links one page to another using a highlighted word or image.
<p>Programming</p>	<ul style="list-style-type: none"> • To have the ability to spot errors in an algorithm and debug it. • Use a range of tools to improve programs and games.

Guiding Principle: "To deliver a first class education through partnership, innovation, school improvement and accountability."

Webpages	<ul style="list-style-type: none"> To be able to discuss the different features of a webpage and understand that webpages are another form of communication. To be able to write basic HTML. Recognise binary code.
Audio and Sound	<ul style="list-style-type: none"> Explain and evaluate what features makes good quality audio content.
Data	<ul style="list-style-type: none"> To begin to understand the basic functions involved in creating spreadsheets. To be able to explain the purpose of a spreadsheet and how they are useful.

CORE VALUES: CHILDREN FIRST RESILIENCE PIONEERING

Year 6: Computing skills progression

<p>KS2: POS</p> <ul style="list-style-type: none"> understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. 	<p>Electronic Communication</p> <ul style="list-style-type: none"> Share work electronically Understand networks as part of the World Wide Web
<p>Text and Multimedia</p> <ul style="list-style-type: none"> Use effects to convey meaning rather than to impress 	<p>Research and E-Safety</p> <ul style="list-style-type: none"> Check websites for security features Understand the effects of cyberbullying and stereotyping Use appropriate methods to validate information and check for bias and accuracy
<p>Digital Images and audio (photos, paint, animation)</p> <ul style="list-style-type: none"> Use images created, manipulated or captured as part of a bigger project 	<p>Algorithms (Control)</p> <ul style="list-style-type: none"> Design, build, test, evaluate and modify a system; ensuring that it is fit for intended purpose
<p>Handling information (databases and graphs)</p> <ul style="list-style-type: none"> Set up and use own spreadsheet containing formulae to investigate Ask 'What If' questions and change variables in their model Check for mistakes in formulae regularly 	<p>Understanding technologies</p> <ul style="list-style-type: none"> Show an understanding of how filtering and monitoring tools affect their use of the school network and internet

Year 6 – End points

E-Safety	<ul style="list-style-type: none"> To be able to discuss the consequences of cyberbullying. Learning to support and use each other when using the internet and all digital media, in a safe and secure way. Empower children to behave in a manner that will reduce risk and enable them to experience all the positive opportunities which are available to them online. Consider the effects of technology on health, wellbeing and lifestyle and be able to make steps to manage this.
-----------------	---

Guiding Principle: "To deliver a first class education through partnership, innovation, school improvement and accountability."

Presentation Skills	<ul style="list-style-type: none">• Be able to effectively evaluate own and others' work.• Be able to discuss the purpose and audience of a presentation/piece of work.• Create a document/presentation based on a particular purpose and audience. .
Networks	<ul style="list-style-type: none">• Understanding of how devices are connected to the internet and web.
Programming	<ul style="list-style-type: none">• To be able to write commands using simple coding language.• To ensure a sequence is present when coding and understand the importance of this in relation to the desired outcome.
Databases	<ul style="list-style-type: none">• To understand that different searches can be carried out on a database to refine your search.• To be able to distinguish the difference between AND & OR searches on a database.
Movies	<ul style="list-style-type: none">• To understand some of the different aspects that go into making movies (locations, props, camera, sound etc)• To be able to use video editing software to create a short film• To be able to critically evaluate own and others' work suggesting ways in which it can be improved/edited

CORE VALUES:

CHILDREN FIRST

RESILIENCE

PIONEERING