Kingsley Community Primary & Nursery School

Curriculum Overview Subject: Computing

Computing Curriculum at Kingsley Community Primary and Nursery School

Intent

At Kingsley CP we believe that Computing and the use of ICT are central to the education of all children and key to enabling them to access the ever-growing importance of technology in modern life. The aim of our Computing curriculum is primarily to develop confident digital citizens who understand the power of their own digital worlds.

We aim to give each pupil the opportunity to apply and develop their technological understanding and skills across a wide range of contexts. Pupils are encouraged to adopt a confident and safe approach to Computing and the use of ICT. With the knowledge that Computing and ICT will undoubtedly continue to form a major part in children's lives at home, further education and in places of work, we aim to ensure that their Computing and ICT experiences in primary school result in effective and transferrable life skills.

Online safety is an integral part of our Computing curriculum at Kingsley CP and is taught at an age-appropriate level throughout the school. We are also committed to ensuring that all staff at our school, as well as our pupils' parents, are continually educated about online dangers that exist in order that they can take an active part in safeguarding against them.

Our school's specific aims for Computing are to:

- Provide a broad, balanced, challenging and enjoyable curriculum for all pupils.
- Develop pupils' computational thinking skills that will benefit them throughout their lives.
- Meet the requirements of the EYFS Technology Early Learning Goal and National Curriculum Programmes of Study for Computing at Key Stage 1 and 2 in an exciting and relevant way.
- Respond to new developments in technology.
- Equip pupils with the confidence and skills to use digital tools and technologies throughout their lives.
- Enhance and enrich learning in other areas of the curriculum using ICT and Computing.
- Develop children's understanding of how to use the internet, computers and digital tools safely and responsibly.
- Involve all staff and parents in the role of online safety and safeguarding.

Implementation

Our Computing curriculum runs from Reception through to Key Stage Two. The curriculum fully meets the requirements of the National Curriculum for Computing and the Technology Early Learning Goal, and covers all objectives for Computer Science, Information Technology, Digital Literacy and Online Safety in all year groups. All class teachers follow the planning guidance and sequence in the schemes of work to teach a discrete lesson of Computing per week / every two weeks (or a block of lessons per half term when more appropriate). The implementation of the units in this planning ensures that the children in every year group are taught at an age-appropriate level and are increasingly challenged as they move up the school.

Computing and ICT contributes to teaching and learning in all curriculum areas at Kingsley CP. Wherever possible, teachers will use technology across the curriculum in creative and diverse ways to enrich their lessons and excite their pupils to learn.

Computing also contributes to PSHE and citizenship as children learn to work together in a collaborative manner. They develop a sense of global citizenship by using the Internet and other communications. Through the discussions of moral issues related to electronic communication and Online Safety, children develop a view about the use and misuse of technology. Children will also tackle important issues around safety on the internet and cyber bullying through their learning about keeping safe online.

Our school uses a wide range of resources to ensure staff can effectively deliver the objectives of the National Curriculum and support the use of Information Technology, Computer Science and Digital Literacy across the school.

- A set of 30 laptops (15 for KS1 and 15 for KS2). Laptops are on a portable trolley and can be moved around to different classrooms. A weekly slot is allocated for each class.
- Every classroom has a laptop connected to the school network and an interactive SMART board with sound and DVD facilities.
- Teachers are able to book class sets of laptops and iPads are for use throughout the week. As part of Computing lessons and for cross-curricular use.
- All iPads and laptops are kept in safe-charging cabinets each evening.
- Each class has a 'class iPad' to take pictures and upload work onto the school Twitter feed.
- Additional resources such as Bee-Bots, robots and headphones are available for use in lessons and are locked away securely.
- The school has an ICT technician who is available to address any Computing questions or technical issues.

Impact

Teachers regularly assess their pupils' Computing progress through observations and evidence of their work in online portfolios (Google Classroom). EYFS computing learning is evidenced through children's Learning Journeys. Key objectives are taken directly from the National Curriculum to assess computing attainment. Our school also uses the 'I can' assessment grid documented in the schemes of work as additional guide for assessment.

The impact of children's Computing learning is monitored by the subject leader through the scrutiny of online portfolios, data analysis, pupil voice, lesson observations and the moderation of teacher judgements.

The overall impact of the Computing curriculum at Kingsley CP can be seen more clearly through the pupils themselves. They continuously develop and build on the Computer Science, Digital Literacy and Information Technology skills they are taught each year. They also adopt an increasingly safe and responsible attitude towards Online Safety and technology as they progress through the school. Kingsley CP Computing curriculum ensures that our pupils leave year six as responsible, digitally literate and technologically skilful young people who are able to use, express themselves and develop their ideas through a wide range of technology.

Kingsley Community Primary & Nursery School

Curriculum Overview Subject: Computing

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Curriculum Objectives/Knowledge	**Early Learning Goal:** Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. **A unique child:** -Completes a simple program on a computer. -Uses ICT hardware to interact with age-appropriate computer software.	-Understand what algorithms are and that programs execute by following precise and unambiguous instructions. -Create and debug simply programs. -Use technology purposefully to create, store, manipulate and retrieve digital content -Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns	-Understand what algorithms are and how they are implemented as programs on digital devices. -Create and debug simple programs. -Use logical reasoning to predict the behaviour of simple programs. Use technology purposefully to create, 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 sup	-Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact -Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content -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	-Select, use and combine a variety of software, 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 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

Kingsley Community Primary & Nursery School

Curriculum Overview Subject: Computing

Subject Skills Digital Literacy	**Understanding the World: Technology** **30-50 months:** • Knows how to operate simple equipment, e.g. turns on CD player and uses remote control. • Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones • Shows skills in making toys work by pressing parts of lifting flaps to achieve effects such as sound, movement or new images. • Shows skill in making toys work by pressing parts or lifting flap. **40-60 months**: • Completes a simple program on a computer. • Uses ICT hardware to interact with age-appropriate computer software. **ELG:** Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	**I can statement:** Uses technology safely Keeps personal information private Recognises common uses of information technology beyond school **Learning Objectives:** • To agree to the Think Before You Click pledge & E-safety assembly • To use the internet safely • To search the internet for suitable pictures • To keep my information private • To describe how to take ownership of work online • To discuss how to stay safe online • To discuss how computers, make our lives easier • To discuss staying safe on and offline • To safely use a device, video • To safely use a device, sharing • To describe what an illustration is • To plan an illustration	**I can statement:** Uses technology respectfully Identifies where to go for help and support when they have concerns about content or contact on the internet or other online technologies **Learning Objectives:** • To agree to the Think Before You Click pledge & E-safety assembly • To discuss how to stay safe on the internet • To use technology safely • To describe the rules for staying safe online • To use the rules to discuss a story • To describe positive behaviour on the internet • To make safe choices when using the internet • To discuss which websites are appropriate for my age • To describe my digital footprint • To treat others with respect online • To use search engines effectively • To rate my favourite websites • To safely use a device, video • To safely use a device, sharing • To describe what makes a good photo	**I can statement:** Uses technology responsibly Identifies a range of ways to report concerns about contact **Learning Objectives:** • To agree to the Be Internet Awesome pledge & E-safety assembly • To discuss what information should be kept private • To identify ways information can be found online about people • To create a positive online presence • To discuss different levels of privacy • To put my learning into practice • To create a safe password • To describe how the internet connects people • To discuss how products are sold online • To describe differences between on/offline communication • To communicate safely and effectively online	**I can statement:** Understands the opportunities computer networks offer for communication Identifies a range of ways to report concerns about content Recognises acceptable/unacceptable behaviour **Learning Objectives:** • To agree to the Be Internet Awesome pledge & E-safety assembly • To recognize ways people, steal personal information • To recognize when someone is trying to steal personal info • To analyse how computer 'bots' can impact on daily life • To put my learning into practice • To assess the credibility of source on the internet • To assess the credibility of source on the internet	**I can statement:** Understands the opportunities computer networks offer for collaboration Is discerning in evaluating digital content **Learning Objectives:** • To agree to the Be Internet Awesome pledge & E-safety assembly • To create a strong password • To customize privacy settings • To put my learning into practice • To create docs and collaborate using Google Drive	**I can statement:** Understands the opportunities computer networks offer for collaboration Is discerning in evaluating digital content **Learning Objectives:** • To agree to the Be Internet Awesome pledge & E-safety assembly • To respond to bullying online • To discuss different ways to respond to bullying • To turn negative interactions not positive ones • To interpret emotions behind texts and messages • To model behaviour to others • To put my learning into practice • To test the credibility of sources on the internet • To create and share a Google Document

Kingsley Community Primary & Nursery School

Curriculum Overview Subject: Computing

Subject Skills ICT		**I can statement:** Uses technology purposefully to create digital content Uses technology purposefully to store digital content Uses technology purposefully to retrieve digital content **Learning Objectives:** • To identify computers in everyday lives • To follow the rules when using computers • To safely use a device, logging on/off • To use Google search to find images • To save images from the internet • To move files • To create and rename folders • To rename files • To present my image gallery • To create an eBook • To create and save an illustration • To edit an illustration • To add illustrations to an eBook	**I can statement:** Uses technology purposefully to organise digital content Uses technology purposefully to manipulate digital content **Learning Objectives:** • To identify computer icons • To describe how the internet works • To discuss the different uses of computers • To create a flipbook animation • To film a short video • To take a good photo • To save and organise photos • To edit a photo • To present my photos	**I can statement:** Uses search technologies effectively Uses a variety of software to accomplish given goals Collects information Designs and creates content Presents information **Learning Objectives:** • To create an animation • To describe the features of a fake news article • To conduct a google search and record information • To use Google Docs to write an article • To use Google Docs to write an article • To discuss the effectiveness of my article	**I can statement:** Selects a variety of software to accomplish given goals Selects, uses and combines internet services Analyses and evaluates information Collects and presents data **Learning Objectives:** • To research and record information • To write and execute a program • To show an HTML formatted message • To share and evaluate articles • To plan a storyboard • To write a script • To create props • To record a video • To edit a video	**I can statement:** Combines a variety of software to accomplish given goals Selects, uses and combines software on a range of digital devices Analyses and evaluates data Designs and creates systems **Learning Objectives:** • To create and edit a Google Sheet • To use Google Drawings to create an image • To create an advert using Google Docs • To create a basic website in Google Sites • To reflect and evaluate learning • To discuss the video competition and the theme • To plan a storyboard • To write a script • To create props • To record a video • To edit a video	**I can statement:** Combines a variety of software to accomplish given goals Selects, uses and combines software on a range of digital devices Analyses and evaluates data Designs and creates systems **Learning Objectives:** • To conduct an internet search • Use Google Docs to record information • To write a research based article • To discuss the video competition and the theme • To plan a storyboard • To write a script • To create props • To record a video • To edit a video

Kingsley Community Primary & Nursery School

Curriculum Overview Subject: Computing

Subject Skills Computer Science			**I can statement:** Understands what algorithms are Creates simple programs **Learning Objectives:** • To understand that a • computer follows precise commands and will respond • to those commands • consistently • To be able to predict the behaviour of simple programs • To be able to use logical reasoning to predict the behaviour of simple programs • To plan, test and debug simple programs. • To be able to plan and • combine a sequence of commands to achieve a specific goal • To write an algorithm and program a sprite • To add sprites • To make a sprite move • To change the background • To make my program repeat • To use speech in a program • To use sequencing in a program		**I can statement:** Understands that algorithms are implemented as programs on digital devices Understands that programs execute by following precise and unambiguous instructions Debugs simple programs Uses logical reasoning to predict the behaviour of simple programs **Learning Objectives:** • To describe and use instructions to program a character • To program a character to grow and shrink. • To use instructions to make characters move at different speeds and distance. • To use a repeat instruction to make a sequence of instructions run more than once and predict the behaviour. • To create programs that play a recorded sound. • To create programs with a sequence of linked instructions • To animate a sprite • To make sprites appear and disappear • To use a repeat block • To control a sprite's actions • To change the size of a sprite • To use messaging to control a sprite • To create a game		**I can statement:** Writes programs that accomplish specific goals Uses sequence in programs Works with various forms of input Works with various forms of output **Learning Objectives:** • To create a Scratch project • To animate a Scratch sprite • To use repetition • To edit a sprite • To change the size of a sprite • To test and debug • To change the backdrop in a Project • To add sound to a sprite • To change the sound of a sprite • To change a sprite's costume • To create an animation with sound • To plan an interactive game or animation • To create an interactive game or animation • To create an interactive game or animation • To create an interactive game or animation • To create an interactive game or animation		**I can statement:** Designs programs that accomplish specific goals Designs and creates programs Debugs programs that accomplish specific goals Uses repetition in programs Controls or simulates physical systems Uses logical reasoning to detect and correct errors in programs Understands how computer networks can provide multiple services, such as the World Wide Web **Learning Objectives:** • To create an animation in Scratch • To plan and design a Chatbot • To create and use a variable • To ask a question in Scratch • To use selection • To test and debug a program • To trace code and understand what it does • To use repetition and selection • To use a variable to create a timer • To introduce challenge to a game • To introduce challenge to a game • To add extra functionality • To plan an interactive game or animation • To create an interactive game or animation		**I can statement:** Solves problems by decomposing them into smaller parts Uses selection in programs Works with variables Uses logical reasoning to explain how some simple algorithms work Uses logical reasoning to detect and correct errors in algorithms Understands computer networks, including the internet Appreciates how search results are ranked **Learning Objectives:** • To create an animation in Scratch • To discuss how a game works • To control a sprite using input • To use collision detection • To add a timer to a game • To add 2 player functionality • To create a sprite • To clone a sprite • To add difficulty to a game • To add a high score to a game • To make the game more enjoyable • To add an interface to a game • To plan an interactive game or animation • To create an interactive game or animation		**I can statement:** Solves problems by decomposing them into smaller parts Uses selection in programs Works with variables Uses logical reasoning to explain how some simple algorithms work Uses logical reasoning to detect and correct errors in algorithms Understands computer networks, including the internet Appreciates how search results are ranked **Learning Objectives:** • To create an animation in Scratch • To change the value of a variable • To switch a sprites costumes using a variable • To use broadcast to send notifications • To use input to change the output • To record the output • To plan an interactive game • To create a list • To add items to a list • To use broadcast as a notification • To create and use a variable to track scores • To create and use a variable to track a high score • To plan an interactive game or animation • To create an interactive game or animation	
Vocabulary	Program Robot Internet	Technology Computer Internet Mouse Keyboard e-safety	Instruction Code Debug Robot Monitor Internet	Technology Computer Internet Mouse Keyboard e-safety	Algorithm Navigate Program Save Open Folder Input / Output	Website e-safety Code	Scratch Programming Coding Debugging Algorithm Sequences Loops	Variable Testing Sensor Search engine Cloud Data Software	Scratch Programming Coding Debugging Algorithm Sequences Loops	Variable Testing Sensor Search engine Cloud Data and database Software	Software Hardware Component Network Sharing File management	Systems Digital Device Virus Security Input / output	Software Hardware Component Network Sharing File management	Systems Digital Device Virus Security Hard Input / output

Kingsley Community Primary & Nursery School

Curriculum Overview Subject: Computing

Enhancements/activities	**Positive Relationships:** -Encourage children to speculate on the reasons why things happen or how things work. -Support children to coordinate actions to use technology, for example, call a telephone number. -Teach and encourage children to click on different icons to cause things to happen in a computer program. **Enabling environments:** -Provide a range of materials and objects to play with that work in different ways for different purposes, for example, egg whisk, torch, other household implements, pulleys, construction kits and tape recorder. -Provide a range of programmable toys, as well as equipment involving ICT, such as computers.	-Unplugged programming – directions and movement -Following instructions to reach an end task. -Using simple game type programs -Creating visual and auditory content with ICT. -E – safety **Possible Activities:** -Guiding robots round mazes -Using bee bots to program routes and follow lines.	-Unplugged programming – directions and movement -Following instructions to reach an end task. -Using varied game type programs, such as Alex and Scratch Jr to create simple programs involving movement and a single form of interaction. -Creating visual and auditory content with ICT. -E – safety **Possible Activities:** -Guiding robots round mazes -Using bee bots to program routes and follow lines. -Debugging problems within unplugged and simple programmed applications.	-Creating visual and auditory content with ICT. -E – safety -Use Scratch Jr to create more complex software involving multiple characters and interaction types. -Debug these programs in practise and theory. **Possible Activities:** -Design and work with robotic systems to meet an end goal or carry out a task. -Cross curricular links to display data / findings using ICT.	-Creating visual and auditory content with ICT. -E – safety -Migrate to full version of Scratch to create more complex software involving multiple characters and interaction types. -Debug these programs in practise and theory. -Use the internet and search for things effective and safely. -Save and retrieve things from a computer network. **Possible Activities:** -Design and work with robotic systems to meet an end goal or carry out a task. -Cross curricular links to display data / findings using ICT.	-Creating visual and auditory content with ICT. -E – safety -Migrate to full version of Scratch to create more complex software involving multiple characters and interaction types. -Debug these programs in practise and theory. -Use the internet and search for things effective and safely. -Save and retrieve things from a computer network. -Analyse data using software such as Excel to automate tasks and present data using basic formula **Possible Activities:** -Design and work with robotic systems to meet an end goal or carry out a task. -Cross curricular links to display data / findings using ICT. -Basic design and packaging to send to web.	-Creating visual and auditory content with ICT. -E – safety -Migrate to full version of Scratch to create more complex software involving multiple characters and interaction types. -Debug these programs in practise and theory. -Use the internet and search for things effective and safely. -Save and retrieve things from a computer network. -Analyse data using software such as Excel to automate tasks and present data using basic formula **Possible Activities:** -Design and work with robotic systems to meet an end goal or carry out a task. -Cross curricular links to display data / findings using ICT. -Basic design and packaging to send to web.