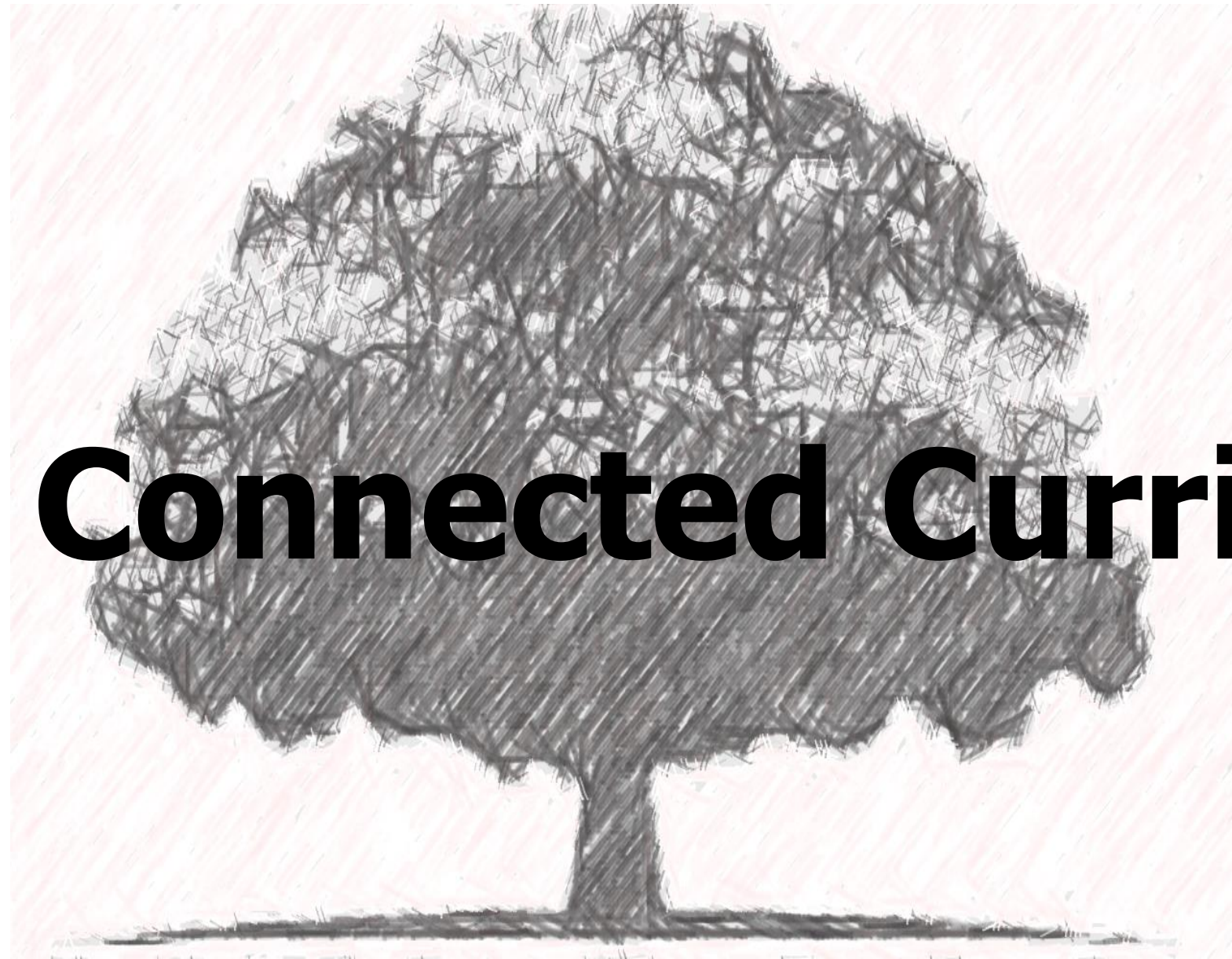# Kelsall Connected Curriculum

'A Love for Learning'

Kelsall Primary & Nursery School

Computing Overview

Kelsall Connected Curriculum

The curriculum at Kelsall Primary School developed over a number of years is firmly rooted in and stems directly from our Vision, Mission and Core Values;

Our Vision – 'A Love for Learning'

Our Mission – 'To inspire the highest quality learning in a creative, collaborative environment'

Our Core Values – Be Curious, Creative & Kind

Intent

As children move to secondary education, we want them to leave with 'A Love for Learning' and a motivating desire to develop as a learner, finding out more about the World they live in and the boundless opportunities that are all around them.

Implementation

At Kelsall, our Connected Curriculum is planned around the development of Knowledge, Skills and Understanding. Our teachers have the freedom to develop innovative and effective approaches to teaching in order to create a curriculum that is tailored to their class and the children's very specific needs. We ensure a curriculum that nurtures fascination and imagination and promotes an appreciation of creativity & individuality. One that also works in strong partnership with parents and carers to ensure high standards, engendering a strong sense of community, where all children and families are key to the delivery of a challenging, inspirational and innovative curriculum. Core knowledge and skills are at the heart of the learning process with the children exploring a wide range of topics, to prepare them for life. There is a strong focus on English, Maths and IT. This includes emphasis on encouraging children to develop their spoken English well and to apply their skills to everyday life.

As a school we encourage personal development – to help children grow up happy and healthy. This develops children's confidence, enhancing their ability to learn, and helping them to grow up to become responsible adults.

Impact

The impact of our connected curriculum is evident through the monitoring and evaluation cycle, where leaders, in particular subject leads take a holistic view. They reflect on current practice and seek to develop innovative and creative approaches to further enhance the curriculum offer for all children.
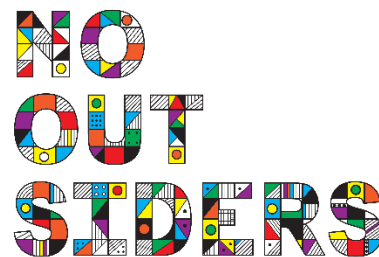
NO OUTSIDERS
EVERYONE IS WELCOME IN OUR SCHOOL.
No one is the same, but everyone is equal.

KELSALL
PRIMARY AND
NURSERY SCHOOL
A LOVE FOR LEARNING

Computing Curriculum at Kelsall Primary School

Intent

At Kelsall, we use and adapt the The National Centre for Computing Education (NCCE) computing curriculum, which aims to provide comprehensive and high-quality computing education. The NCCE curriculum was created by a number of experts in the field and is funded by the Department for Education. The curriculum equips students with the necessary knowledge, skills, and understanding to thrive in the digital age and to inspire them to pursue further studies and careers in the field of computing. It emphasizes the development of computational thinking, problem-solving abilities, digital literacy, and creativity, with a focus on fostering a deep understanding of computing concepts.

Implementation

The NCCE computing curriculum will be implemented through a structured and progressive approach, catering to the diverse needs and abilities of students. It will incorporate a combination of theoretical knowledge and practical application to ensure a well-rounded computing education. Teachers will have access to guidance on effective teaching methodologies, lesson plans, and assessments, ensuring consistency and quality in computing education. Hands-on learning experiences will be used at every opportunity, using a range of resources, software tools, and programming languages to facilitate students' engagement and understanding. Professional development opportunities for teachers will be provided to enhance their subject knowledge and pedagogical skills, ensuring they are well-equipped to deliver the curriculum effectively.

Impact

The NCCE computing curriculum is expected to have a transformative impact on students, educators and the quality of computing education. By focusing on computational thinking and problem-solving, students will develop analytical and logical reasoning abilities, essential for success in various academic disciplines and future careers. Students will be empowered to become confident digital citizens, equipped with critical digital literacy skills to navigate the rapidly evolving digital landscape. Through practical application and project-based learning, students will develop creativity, collaboration, and communication skills, fostering innovation and perseverance. The curriculum's implementation should also lead to an increase in the number of students pursuing further studies and careers in computing. Additionally, by providing professional development opportunities for educators, the overall quality of computing education will be enhanced and lead to continuous improvement in teaching practices. Ultimately, the impact of the computing curriculum at Kelsall will be evident in the form of a technologically proficient and future-ready generation, capable of making meaningful contributions to society and driving digital innovation.

Inclusive Practice

When we are getting things right for our learners with SEND, we are getting it right for all learners. Inclusive Practice means we use approaches that are effective for learners with SEND. This will provide all learners with opportunities to learn in small steps and carefully build upon their prior knowledge. This is done through a range of approaches including:

-creating a language rich environment which is vital to closing the gap between learners with SEND and their peers and enabling future attainment.
-demonstrating what we want learners to do and show them what we mean.
-using physical resources to help abstract concepts become more accessible and meaningful and recognise the value of Dual Coding.
-reducing Cognitive Load and activate children's prior knowledge/schema through a connected curriculum that builds of prior learning, knowledge and skills and provides regular opportunities for learners to practise recalling what they have learnt, to help them easily access this information when it is needed.

'With reference to *'Embedding Inclusive Practice'*, **NASEN**

By the time they leave, pupils will:
Use computers for functional purposes, e.g., collecting and presenting information, or using search technology.

Understand how computers and networks work and basic computer programming.

Make safe and responsible use of technology, including recognising its advantages for collaboration or communication.

EYFS Links
In September 2021, the ELG in technology was removed from the EYFS statutory framework. It has previously stated "children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes."

Despite its exclusion from the framework, clearly technology has an important role in early years classrooms, in order to prepare children for the National Curriculum and in the context of a continuously advancing technological society. Nevertheless, below are links that will support children in achieving the ELGs in early years classrooms at Kelsall Primary School.

Understanding of the World
I can explore how things work.
The Natural World ELG
I can name some sources of IT from home and school.
I know that typing using a keyboard is another way of writing information.
I know that digital devices can be used to create pictures.
I know that things can be similar or different in lots of ways and can talk about some of these similarities and differences.
People, Culture and Communities ELG
I am confident to try new activities and I can show independence, resilience and perseverance in the face of challenge.
I can explain the reasons for rules, know right from wrong and try to behave accordingly.

Kelsall Primary & Nursery School Curriculum Road Map –Computing Endpoints

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn					
Digital Literacy: networks. Describe common uses of information technology beyond school	Digital Literacy: networks Describe common uses of information technology beyond school	Digital Literacy: networks Understand the opportunities computer networks offer for communication	Digital Literacy: networks Understand how computer networks can provide multiple services, such as the world wide web	Digital Literacy: networks Understand the opportunities computer networks offer for collaboration	Digital Literacy: networks Understands the basic. workings of computer networks including internet
Spring					
Computer Science: write and debug programs. Create a simple program	Computer Science: algorithms and logical reasoning Use logical reasoning to predict the behaviour of simple programs Understand what algorithms are and that they are implemented as programs on devices	Computer Science: algorithms and logical reasoning Use logical reasoning to detect errors in programs	Computer Science: write and debug programs Use repetition in programs	Computer Science: algorithms and logical reasoning Use logical reasoning to explain how algorithms work and detect and correct errors in them	Computer Science: write and debug programs Work with variables
Summer					
Information Technology: create digital content. Use technology purposefully to create digital content	Information Technology: Create digital content Use technology to manipulate digital content	Information Technology: create digital content Can choose from a variety of software and internet services to accomplish given goals	Information Technology: create digital content Can choose from a variety of software and internet services to accomplish given goals	Information Technology: create digital content Design and create systems to accomplish a given goal	Information Technology: create digital content. Combine a variety of software to accomplish given goals on a range of digital devices

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing	Curriculum Objectives	**Information Technology**	Computing Systems and Networks – Technology Around Us Children will be able: • To identify technology • To identify a computer and its main parts • To use a mouse in different ways • To use a keyboard to type • To use the keyboard to edit text • To create rules for using technology responsibly	Computing Systems and Networks – IT Around Us Children will be able: • To use a digital device to take a photograph • To make choices when taking a photograph • To describe what makes a good photograph • To decide how photographs can be improved • To use tools to change an image • To recongise that photos can be changed. • To identify that some images are not real (fake) • To use a digital device to take a photograph	Computing Systems and Networks – Connecting Computers Children will be able: • To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way we work • To explain how a computer network can be used to share information • To explore how digital devices can be connected • To recognise the physical components of a network	Computing Systems and Networks – The Internet Children will be able: • To describe how networks physically connect to other networks • To recognise how networked devices make up the internet • To outline how websites can be shared via the World Wide Web • To describe how content can be added and accessed on the World Wide Web • To recognise how the content of the WWW is created by people • To evaluate the consequences of unreliable content	Computing Systems and Networks – Sharing information Children will be able: • To explain that computers can be connected together to form systems • To recognise the role of computer systems in our lives • To recognise how information is transferred over the internet • To explain how sharing information online lets people in different places work together • To contribute to a shared project online • To evaluate different ways of working together online	Computing Systems and Networks – Communication Children will be able: • To identify how to use a search engine • To describe how search engines select results • To explain how search results are ranked • To recognise why the order of results is important, and to whom • To recognise how we communicate using technology • To evaluate different methods of online communication
		Computing Science	Programming A – Moving a Robot Children will be able: • To explain what a given command will do • To act out a given word • To combine forwards and backwards commands to make a sequence • To combine four direction commands to make sequences • To plan a simple program • To find more than one solution to a problem	Programming A – Robot Algorithms Children will be able: • To describe a series of instructions as a sequence • To explain what happens when we change the order of instructions • To use logical reasoning to predict the outcome of a program (series of commands) • To explain that programming projects can have code and artwork • To design an algorithm	Programming B – Events and actions in programs Children will be able: • To explain how a sprite moves in an existing project • To create a program to move a sprite in four directions • To adapt a program to a new context • To develop my program by adding features • To identify and fix bugs in a program • To design and create a maze-based challenge	Programming B – Repetition in games Children will be able: • To develop the use of count-controlled loops in a different programming environment • To explain that in programming there are infinite loops and count-controlled loops • To develop a design that includes two or more loops which run at the same time • To modify an infinite loop in a given program • To design a project that includes repetition • To create a project that includes repetition	Programming B – Selection in quizzes Children will be able: • To explain how selection is used in computer programs • To relate that a conditional statement connects a condition to an outcome • To explain how selection directs the flow of a program • To design a program which uses selection • To create a program which uses selection • To evaluate my program	Programming A – Variables in games Children will be able: • To define a 'variable' as something that is changeable • To explain why a variable is used in a program • To choose how to improve a game by using variables • To design a project that builds on a given example • To use my design to create a project • To evaluate my project

			Creating Media – Digital Painting	Creating Media – Digital Photography	Creating Media – Animation	Creating Media – Audio editing	Creating Media – Video Editing	Creating Media – Web page creation
	Digital Literacy		Children will be able: • To describe what different freehand tools do • To use the shape tool and the line tools • To make careful choices when painting a digital picture • To explain why I chose the tools I used • To use a computer on my own to paint a picture • To compare painting a picture on a computer and on paper	Children will be able: • To use a digital device to take a photograph • To make choices when taking a photograph • To describe what makes a good photograph • To decide how photographs can be improved • To use tools to change an image • To recognise that photos can be changed • To identify that some images are not real (fake)	Children will be able: • To explain that animation is a sequence of drawings or photographs • To relate animated movement with a sequence of images • To plan an animation • To identify the need to work consistently and carefully • To review and improve an animation • To evaluate the impact of adding other media to an animation	Children will be able: • To identify that sound can be digitally recorded. • To use a digital device to record sound. • To explain that a digital recording is stored as a file • To explain that audio can be changed through editing • To show that different types of audio can be combined and played together • To evaluate editing choices made	Children will be able: • To recognise video as moving pictures, which can include audio • To identify digital devices that can record video • To capture video using a digital device • To recognise the features of an effective video • To identify that video can be improved through reshooting and editing • To consider the impact of the choices made when making and sharing a video	Children will be able: • To review an existing website and consider its structure • To plan the features of a web page • To consider the ownership and use of images (copyright) • To recognise the need to preview pages • To outline the need for a navigation path • To recognise the implications of linking to content owned by other people
		Vocabulary	**Algorithm** **Command** **Code** **Computer** **Debugging** **Information** **Information Technology** **Object** **Program** **Run** **Technology**	**Algorithm** **Attribute** **Command** **Code** **Computer** **Data** **Debugging** **Execute** **Information** **Information Technology** **Object** **Program** **Property** **Run** **Technology**	**Computer network** **Computer system** **Debugging** **Execute** **Information** **Input** **Input device** **Internet** **Loop** **Object** **Output** **Output device** **Process** **Run**	**Algorithm** **Browser** **Code** **Command** **Computer** **Condition** **Debugging** **Information** **Internet** **Loop** **Loop (infinite)** **Repetition** **URL (Uniform Resource Locator)** **Web** **World Wide Web**	**Algorithm** **Browser** **Code** **Code snippet** **Command** **Computer** **Computer network** **Computer system** **Condition** **Condition controlled loop** **Execute** **Run** **Network** **Program** **Property** **Router** **Selection** **Server** **Software** **Switch** **Variable**	**Algorithm** **Browser** **Code** **Code snippet** **Command** **Computer** **Computer network** **Computer system** **Condition** **Condition controlled loop** **Execute** **Run** **Program** **Property** **Selection** **Switch** **Variable** **HTML (Hypertext Markup Language)** **Hyperlink** **URL** **Wireless Access Point**