Computing in the Stanton Bridge Primary Curriculum

Intent

Stanton Bridge Primary School's Curriculum Statement of Intent has been constructed to reflect and incorporate each curriculum subject whilst ensuring that each subsequent content designed meets the intent at every opportunity.

Thus, the context - past, present and future - are factored in. The past - family influences, social experience and how that may contribute to their new experiences. The present – school and expanding social networks, and how this can positively shape their future given the right environmental and social factors. Finally, the future - in search of what awaits them in a fast evolving technological world.

Hence the premise upon which our pupils will grow:

- High ambition.
- Rich in language with a passion for learning.
- Habits of Mind that serves to support achievement across all areas of learning.
- Strong basis for continuous academic growth beyond their primary years.
- Ability to regulate their social, emotional well-being, with knowledge & skills to tap into a bank of resources that enable them to be flexible in their approach to problem-solving.
- Stand shoulder to shoulder and thrive with others in a range of different roles, exhibiting leadership qualities and skills.
- Acknowledge and appreciate their heritage in world where accepting themselves as individuals and celebrating who they are is key in steering a complex and ever-changing environment.
- Having a voice and knowing that they can make a difference to the world in which they live, changing things for the better.
- Positive relationships and social networks from which they can thrive and excel, seeking and working to include others.
- Belonging to the House of Values, focused on developing character, competence and connectedness. (Relationships, Equality, Care, Thinking Flexibly, and Listening)

Character	Our pupil are taught to learning with a sense of honesty, coming to know, acknowledge and appreciate both strengths and areas for further growth learning. They are then taught to respect the learning ahead of them and to appreciate this opportunity to learn where this is not the case for many across the world.
Competence	Pupils will have high aspiration for learning, demonstrate confidence in key concepts learned, use subject specific vocabulary, working both independently and interconnected dependent on task set.
Connectedness	Pupils will work in harmony with others, within familiar and unfamiliar surroundings.
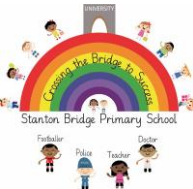
Implementation:

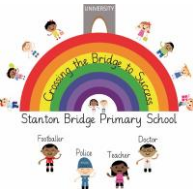Pedagogy: The understanding of how concepts are taught.

Pedagogy is the 'method of teaching'. At Stanton Bridge, we use the Barak Rosenshine's Principles of Instruction to establish Effective Teaching Practice. This is further strengthened by the use of Thinking Frames that support in the development of Metacognition. Our school's approach to Teaching and Learning is rooted in the Science of Learning and as such, all staff members are routinely engaged in school improvement activities to develop pedagogy and specific CPD to ensure subject content is expertly delivered. This of course sits alongside individualised mentoring and coaching to support continuous improvements in practice. Responsive coaching also serves to ensure each adult knows the relevant next steps to maximise learning opportunities for all groups of pupils.

Core concepts

Core Concept in Computing			
Computer Science Pupils are the taught the principles of computational thinking, they will design and build programs and understand how computers and computer systems work	Networks Understand how computers and computer systems work	Information Technology Allows pupils express themselves and develop their ideas through information and communication technology skills.	Online Safety Pupils use technology safely & respectfully.

Computing Delivery:

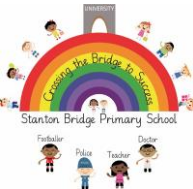| Lesson timings	Type of delivery
Computing is taught weekly for 50 mins per lesson.	The lessons are predominantly discrete to enable focus on the core concepts of computing, although vocabulary is continually developed using sentence stems and tiers universally across the subject areas. Online Safety is a planned and regular session, 1 lesson per half term

Computing Planning:

Lesson Structure

| Lesson Structure	Notes
1. Starter	Key skills focussed.
2. Review	Pupils review prior learning (previous lesson, previous topic, previous year) in the form of low-stake quizzes.
3. Learning Intention Learning Outcomes Vocabulary	Teacher to share learning intention, learning outcomes and key vocabulary including definitions and images.
4. Main Teach	Didactic teaching of the key concepts.
5. Teacher Model	Teacher to verbalise thinking out loud, with no pupil input.
6. Shared Model	Pupil input using directed questions.
7. Independent	White board work and teachers check through questioning and observation.
8. Main Task	Independent/pair/groups – pupils practice and embed new concept/consolidate through scaffolded tasks designed tasks by their teacher. Teacher facilitates learning through teacher live marking and checks on progress throughout the lesson, intervene and question for understanding, furthering knowledge.
9. Plenary/Reflection	Check in at the end or during the lesson, flexible, as and when best suited.

Annual Organisation

	Autumn	Spring	Summer
Nursery		**Core Concept:** IT Unit: Everyone Can Create Early Learners	**Core Concept:** Computer Science Unit: 1)Bee-Bots Tinkering Unit: 2)Bee-Bot Play **Core Concept:** IT Unit: Everyone Can Create Early Learners
Reception		**Core Concept:** Computer Science Unit:1)Bee-Bot Basics Unit:2) Bee-Bot 1,2,3 **Core Concept:** IT Unit: Everyone Can Create Early Learners	**Core Concept:** Computer Science Unit: Get Started With Code 1 & 2 **Core Concept:** IT Unit: Everyone Can Create Early Learners
Year 1	**Core Concept:** Computer Science Unit:Bee Bots **Core Concept:** IT Creating Media – Digital Drawing and Painting.	**Core Concept:** Computer Science Scratch Junior Animations **Core Concept:** IT Word Processing	**Core Concept:** Networks Unit: Technology Around Us IT Unit: Collecting Data
Year 2	**Core Concept:** Computer Science Unit: Algorithms and Debugging **Core Concept:** Networks Unit: Networks – IT around us.	**Core Concept:** Networks Unit: Networks Around Us **Core Concept:** Computer Science Unit: ECC Early Learners Functions **Core Concept:** IT Unit: Creating Media - Photography	**Core Concept:** Computer Science Unit: Programming Quizzes **Core Concept:** IT Unit: Creating Media – Digital Music
Year 3	**Core Concept:** Computer Science Unit: Scratch **Core Concept:** IT Unit: Surveys	**Core Concept:** Computer Science Unit: ECC Early Learners Loops (Pg22-28) **Core Concept:** Networks Unit: Connecting Computers	**Core Concept:** Computer Science Unit: Events and Actions in Programs **Core Concept:** Networks Unit: Stop Animation
Year 4	**Core Concept:** Computer Science Unit: Scratch – Further Skills **Core Concept:** IT Unit: HTML	**Core Concept:** Networks Unit: The Internet **Core Concept:** IT Unit: Data Logging	**Core Concept:** Computer Science Unit: ECC Early Learners Variables (Pg29-35) **Core Concept:** IT Unit: CC: Music: Recording an interview
Year 5	**Core Concept:** Networks Unit: Sharing Information **Core Concept:** Computer Science Scratch Tessellations	**Core Concept:** Computer Science Unit: Scratch: Quizzes **Core Concept:** IT Unit: Creating Media – Video Production	**Core Concept:** Computer Science Physical Computing – Intro to. **Core Concept:** IT Unit: Fact-File Databases
Year 6	**Core Concept:** Networks Unit: Communication **Core Concept:** IT Unit: App Development	**Core Concept:** Networks Physical Computing – Microbits **Core Concept:** IT Unit: Egyptian Project To include: Music from GarageBand, Nao Bots, Video creation	**Core Concept:** Computer Science Sending Movement **Core Concept:** IT Spreadsheets

Online Safety

We follow Project Evolve for our online safety with one lesson per half term. Each year group focusses on the same strand each term. Online safety is also taught through our PSHE lessons and assemblies.

| Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Online Relationships	Self-Image and Identity	Managing Online Information	Copyright and Ownership	Health and Wellbeing	Online Bullying
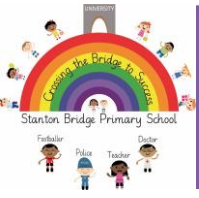
Impact

The ultimate test of the impact of the curriculum is in whether the students know what you want them to know, and what you think they should know. This has been carefully mapped against the core concepts for computing in the tables on the following pages. To determine this, we check and monitor children's learning, providing teachers and students with information about progress and analysis of deliberate retrieval practice. We need to be able to fluidly use 'checking for understanding' techniques in the moment as well as being able to know what has been learnt and retained over time and the depth of that learning:

■ We use checking for understanding techniques through quizzes and questions to ensure we are aware of all students learning during the lesson and adapt the pace as necessary.

■ Retrieval practice is built in where most impactful to interrupt the forgetting curve and secure constructs in long term memory.

■ Depth of knowledge is then assessed through end of unit assessment quizzes, teacher discussion and observation and pupil portfolios on Showbie. Pupils are assessed against core concepts, which is recorded on DC Pro.
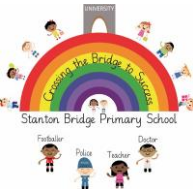
Computing Specific Impact Measures

In Computing, quizzing is used as a method of assessing pupils, understanding at the end of a core concept to analyse the extent to which knowledge has been consolidated into long-term memory. Retrieval practice tasks throughout the lessons also interrupt the forgetting curve to enable faster access to prior learning.

Progression Points against the Core Concepts.

Core Concept	KS1	LKS2	UKS2
Computer Science	Write algorithms for everyday tasks Use logical reasoning to predict the outcome of algorithms Understand decomposition is breaking objects/processes down Implement simple algorithms on digital devices. Debug algorithms	Create algorithms for use when programming. Decompose tasks (such as animations) into separate steps to create an algorithm. Understand and use abstraction. Write increasingly more precise algorithms for use when programming. Use simple selection in algorithms Use logical reasoning to detect and correct errors in programs	Solve problems by decomposing them into smaller parts. Use selection in algorithms. Recognise the need for conditions in repetition within algorithms. Use logical reasoning to explain how a variety of algorithms work. Use logical reasoning to detect and correct errors in algorithms. Write precise algorithms for use when programming. Identify variables needed and their use in selection and repetition. Decompose code into sections for effective debugging. Evaluate my work and identify errors I can recognise, and make use, of patterns across programming projects
Networks	Build knowledge of parts of a computer and develop the basic skills needed to effectively use a computer keyboard and mouse. Recognise different types of computers used in school. Recognise information technology beyond school.	Understand and identify digital and non-digital devices. Identify input and output and describe a simple process. Understand that devices can be connected to form a network. Identify network devices around me. Understand that the internet is a network of networks. Understand how information is shared across the internet. Understand what the World Wide Web and give examples of how content can be shared. Explain why a network needs protecting.	Explain how computer systems communicate with other devices. Understand how a search engine works and how they rank results. Understand what an IP address and DNS is. Understand how data is transferred over networks in packets. Understand how we communicate using internet-based communication. Understand that communication on the internet may not be private.
Information Technology	Use a range of applications and devices in order to communicate ideas, work and messages. Use simple databases to record information in areas across the curriculum.	Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. Devise and construct databases using applications designed for this purpose in areas across the curriculum.	Choose the most suitable applications and devices for the purposes of communication. Use many of the advanced features in order to create high quality, professional or efficient communications. Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.
Online Safety	Understand what personal information is, who it should be shared with and how to protect themselves online. Understand the term digital footprint and give examples. Understand that information online may not always be reliable. Understand what cyber-bulling is and give examples. Understand and explain what phishing.	Give examples of how you can identify a phishing scam. Understand how to develop safe habits online. Understand how to find help if something feels unsafe online. Demonstrate ways to build positive and healthy online relationships and friendships. Describe strategies they can use to respond to hurtful online behaviour, in ways that keep them safe and healthy. Identify sources of support that can help friends	Have a deep understanding of online safety, giving examples Understand the dis- and misinformation online and explain the different between them. Understand biased media, including social medial, and how it can shape people's opinions and perception of events. Examine conscious and unconscious bias.
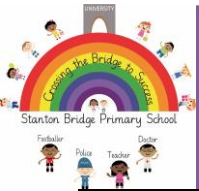
		and peers if they are experiencing hurtful behaviour online.	