Broadway Junior School

Subject: Computing Topic: Logo Year: 4 Term: Summer 1

NC Purpose of Study
A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Intent	Implementation	Impact
Our vision at Broadway Junior School is that all pupils should enjoy Computing and become confident, passionate and responsible users of technology both inside and outside of school. Through interesting, relevant and inclusive lessons, they will be able to leave Year 6 with a good understanding of how computers and the Internet work, along with being able to complete tasks on them creatively, independently and reflectively for a range of purposes and audiences. The Computing curriculum at Broadway is designed to enable pupils to embrace and utilise new technologies through the application of essential knowledge, principles and concepts. Technology is everywhere and will play a pivotal part in students' lives, therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators, not just consumers of content and our broad curriculum encompassing 'Coding & Computational Thinking', 'Information Technology', 'Computing Systems & Networks' and 'Online Safety' reflects this. We recognise that the best prevention for a lot of issues we currently see with technology and social media is through education.	Computing skills are taught explicitly at Broadway with every pupil receiving dedicated Computing lessons throughout each half-term. Each half-term has a focus on either Information Technology, Coding & Computational Thinking or Computing Systems & Networks with Online Safety lessons also included throughout each half-term. The skills acquired are then embedded throughout the curriculum. Learning is sequenced to build knowledge, skills and vocabulary. Throughout units of work teachers encourage children to make links between past learning and new content. We recognise prior learning and build on it with memorable learning experiences and provide targeted support where necessary. The units address the requirements of the National Curriculum and are broken down to cover all elements of the different strands of Computing. The progression of knowledge and skills statements build year on year to deepen and challenge our learners. We use Purple Mash as the core of our curriculum tied with Teach Computing and activities from Project Evolve to create a comprehensive curriculum providing full curriculum coverage and a variety of skills for our children.	The impact of our Computing curriculum is that we provide pupils with a set of skills to embed a lifelong love of learning and that they build on the knowledge and skills from previous learning. We ensure that every child can become a confident user of technology, while being able to use it to accomplish a wide variety of goals, both at home and in school. Children will have a secure and comprehensive knowledge of how technology works in the world around them and will develop their understanding of how to deal with online situations safely. Children will become confident global citizens. The knowledge organisers outline what we want the children to know within each unit. By nature Computing is going to be practical and hands on. We give the children the opportunity to record individually their responses to key questions. Teachers ensure that children understand and apply the correct vocabulary linked to different elements of the curriculum and this is also recorded within the floor books. Prior and future learning links are also included, so that there is a clear sequence in relation to the progression of skills and activities.

Key Vocabulary
Debugging, Grid, Logo, Logo Commands, Multi Line Mode, Pen Down, Pen Up, Prediction, Procedure, Repeat, Run Speed, SETPC, SETPS.

Knowledge	Skills
• To learn the structure of the coding language of Logo. • To input simple instructions in Logo. • Using 2Logo to create letter shapes. • To use the Repeat function in Logo to create shapes. • To use and build procedures in Logo.	• Children know what the common instructions are in 2Logo and how to type them. • Children can follow simple 2Logo instructions to create shapes on paper. • Children can follow simple instructions to create shapes in 2Logo. • Children can create 2Logo instructions to draw patterns of increasing complexity. • Children understand the pu and pd commands. • Children can write 2Logo instructions for a word of four letters. • Children can follow 2Logo code to predict the outcome. • Children can create shapes using the Repeat command. • Children can find the most efficient way to draw shapes. • Children can use the Procedure feature. • Children can create 'flowers' or 'crystals' using 2Logo.

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	Learning Objectives/End Points		
To know key commands and input simple instructions. Lesson 1	To use a variety of commands to create shapes using multi-line mode. Lesson 2	To use the Repeat command. To change the line thickness and colour. Lesson 3	To use procedures to write instructions. Lesson 4

Careers	
Linking Curriculum Learning to Careers Discuss how the skills developed in this unit are used in a range of careers, including: Computer Programmer – Creates computer programs and apps. Game Designer – Designs and develops video games. Web Developer – Builds and maintains websites. Graphic Designer – Uses computers to create images, logos, and designs. Robotics Engineer – Designs and programs robots. Cybersecurity Specialist – Helps protect computers and networks from hackers. App Developer – Creates apps for phones and tablets. Animator – Uses computer software to create animations and visual effects. Data Scientist – Uses computers to study and understand data. IT Support Specialist – Helps people solve computer and technology problems. Transferable skills Logical thinking: sequencing commands in the correct order to achieve a desired outcome. Problem-solving: identifying errors and debugging instructions when shapes do not appear as predicted. Creativity: designing letters, patterns, flowers and crystals using Logo commands. Mathematical reasoning: applying knowledge of shapes, angles, grids, direction and repetition. Perseverance and resilience: testing instructions, learning from mistakes and refining code. Planning and prediction: anticipating the outcome of a sequence of commands before running the program. Efficiency: using the Repeat command and procedures to reduce unnecessary instructions. Digital literacy: understanding how programming languages communicate instructions to a computer.	**Learning from career and labour market information** Children explore how programming is used in modern workplaces, including software development, engineering and digital design, and begin to understand why these skills are valuable in a technology-driven world. **Addressing the needs of each pupil** Children access appropriately scaffolded Logo activities, with opportunities to practise commands, predict outcomes, debug errors and develop increasingly complex patterns. Tasks allow pupils to build confidence and demonstrate their strengths in different ways. **Linking curriculum learning to careers** Children apply mathematical understanding of shapes, angles, grids and patterns alongside programming skills. They use commands, repetition and procedures to create designs, linking their learning to careers such as software developer, architect, engineer and digital designer. **Encounters with employers and employees** Children consider how programmers and technology professionals use instructions, procedures and debugging in their everyday work. This can be developed through a guest speaker, video or career case study featuring someone working in computing or digital design. **Experiences of workplaces** Children experience a simplified version of programming tasks undertaken in the workplace by writing, testing and refining code. They develop an understanding of how professionals create efficient instructions, identify errors and improve digital products. **Encounters with further and higher education** Children begin to recognise that computing, programming, mathematics and design are subjects that can lead to further study in computer science, software engineering, architecture and related fields.