Broadway Junior School

Subject: Computing Topic: Branching Databases Year: 3 Term: Autumn 2

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
Binary Tree, Branching Database, Data, Database, Debugging.

Knowledge	Skills
• To sort objects using just 'yes' or 'no' questions. • To complete a branching database using 2Question. • To create a branching database of the children's choice.	• Children understand how YES/NO questions are structured and answered. • Children have used YES/NO questioning to play a simple game with a friend. • Children can explain why they choose a particular question to split their database. • Extension: Children can begin to use 'or more' and 'or less' in their questioning. • Children have contributed to a class branching database about fruit. • Children have completed a branching database about vegetables. • Extension: Children can edit and adapt a branching database to accommodate new entries. • Children can choose a suitable topic for a branching database. • Children can select and save appropriate images. • Children can create a branching database. • Children know how to use and debug their own and others branching databases.

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Learning Objectives/End Points			
To understand the concept of using 'Yes' or 'No' questions to sort objects. Lesson 1	To understand and use a branching database effectively. Lesson 2	To plan and create a branching database. Lesson 3	To test and debug branching databases to correct errors. Lesson 4

Prior and Future Learning Links:
Use of 2Calculate to collect data and produce a graph. (Spreadsheets): Inputting and examining data, Presenting data through line graphs.

Careers	
Linking Curriculum Learning to Careers Discuss how the skills developed in this unit are used in a range of careers, including: Database administrator – manages and organises databases and their structures. Software developer – designs applications that use databases to store and retrieve information. Data analyst – uses databases to investigate and organise large amounts of data. Systems analyst – designs and improves systems that may use branching or hierarchical databases. Web developer – builds websites and applications that store and retrieve information from databases. Transferable skills Logical thinking: Using yes/no questions to sort and classify objects. Problem-solving: Planning branching databases and debugging errors. Data handling: Organising information into clear, structured categories. Decision-making: Choosing effective questions to divide information accurately. Creativity: Selecting a topic and designing a branching database. Resilience: Testing, reviewing and improving digital work. Collaboration: Sharing ideas and testing databases with peers.	**Learning from career and labour market information** Introduce examples of careers that use data and databases, such as data analysts, scientists, librarians and software developers. **Addressing the needs of each pupil** Provide inclusive opportunities for pupils to develop logical thinking, questioning and problem-solving skills, with appropriate scaffolding and challenge to support individual needs. **Linking curriculum learning to careers** Link sorting objects, creating branching databases, selecting relevant questions and debugging errors to the work of programmers, database designers, researchers and data analysts. **Encounters with employers and employees** Where possible, invite a member of staff, parent or visitor who uses data or digital systems at work to explain how they organise information and make decisions. **Experiences of workplaces** Explore how databases are used in real workplaces, such as libraries to organise books, hospitals to manage information and shops to track products. **Encounters with further and higher education** Introduce the idea that pupils can continue to develop computing, data-handling and problem-solving skills through future education, college, university and technical training.