Intent

All pupils at Naunton Park Primary School have the right to have rich, deep learning experiences that balance all the aspects of computing. With technology playing such a significant role in society today, we believe 'Computational thinking' is a skill children must be taught if they are to be able to participate effectively and safely in this digital world. A high-quality computing education equips pupils to use 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. At this school, the core of computing is Computer Science in which pupils are introduced to a wide range of technology, including laptops, iPads and interactive whiteboards, allowing them to continually practice and improve the skills they learn. This ensures they become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology. Through teaching Computing, we equip children to participate in a rapidly changing world where work and leisure activities are increasingly transformed by technology. It is our intention to enable children to find, explore, analyse, exchange and present information. We also focus on developing the skills necessary for children to be able to use information in a discriminating and effective way. We want children to know more, remember more and understand more in computing so that they leave primary school computer literate. Computing skills are a major factor in enabling children to be confident, creative and independent learners and it is our intention that children have every opportunity available to allow them to achieve this.

The intent of our Computing is to:

➢ understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
➢ analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
➢ evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
➢ be responsible, competent, confident and creative users of information and communication technology.

By the end of Key Stage 1 our children will learn to

1. understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
2. create and debug simple programs
3. use logical reasoning to predict the behaviour of simple programs
4. use technology purposefully to create, organise, store, manipulate and retrieve digital content
5. recognise common uses of information technology beyond school
6. use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

By the end of Key Stage 2 our children will learn to

1. design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
2. use sequence, selection, and repetition in programs; work with variables and various forms of input and output
3. use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
4. 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
5. use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

6. select, use and combine a variety of software (including internet services) 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
7. use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Implementation

Year Group	Key Objectives/Units (whatever is applicable)
Year 1	Online Safety To start to add pictures and text to work. To learn how to open, save and print. Grouping and Handling Data To sort items using a range of criteria To use a pictogram to record the results of an experiment. Programming To follow and create simple instructions on the computer. To consider how the order of instructions affects the result. Animated Stories To add animation to a story. To add sound to a story, including voice recording and music the children have composed. To work on a more complex story, including adding backgrounds and copying and pasting. Coding To understand what coding means. To use code blocks of code to make algorithms.
Year 2	Creating Pictures To learn the functions of a Picture tool to recreate different styles of art work and different techniques. Coding To design algorithms and then code them. To use the repeat and timer command. To know what debugging is and debug programs. E-Safety To know how to refine searches using the Search tool. To understand how we should talk to others in an online situation. To identify the steps that can be taken to keep personal data and hardware secure. Questioning & Databases To learn about data handling tools that can give more information than pictograms. To construct a binary tree to identify items. To use a database to answer more complex search questions. Making Music To make music digitally. To edit and refine composed music. To upload a sound from a bank of sounds. Effective Searching To gain a better understanding of searching on the Internet.
Year 3	E-Safety To know what makes a safe password. To consider the truth of the content of websites. To learn about the meaning of age restrictions symbols on digital media and devices. Word Processing Data bases To sort objects using just 'yes' or 'no' questions.

	To complete a branching database To create a branching database of the children's choice.
Year 4	<u>Animation</u> To add backgrounds and sounds to animations. To be introduced to 'stop motion' animation. <u>Programming</u> To use selection in coding with the 'if/else' command. To understand and use variables. To use flowcharts for design of algorithms including selection. To use the 'repeat until' with variables to determine the repeat. To learn about and use computational thinking terms decomposition and abstraction. <u>Data Handling</u> Formatting cells as currency, percentage, decimal to different decimal places or fraction. Using the formula wizard to calculate averages. Combining tools to make spreadsheet activities such as timed times tables tests. Using a spreadsheet to model a real-life situation. To add a formula to a cell to automatically make a calculation in that cell.
Year 5	<u>E-Safety</u> To gain a greater understanding of the impact that sharing digital content can have. To understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information.
Year 6	<u>E-Safety</u> Identify benefits and risks of mobile devices broadcasting the location of the user/device. Identify secure sites by looking for privacy seals of approval. Identify the benefits and risks of giving personal information. To review the meaning of a digital footprint. To have a clear idea of appropriate online behaviour. <u>Multi-media</u> <u>Coding</u> To use the program design process, including flowcharts, to develop algorithms for more complex programs using and understanding of abstraction and decomposition to define the important aspects of the program. To code, test and debug from these designs. <u>Data Handling</u>

The teaching of this subject will be adapted as required to enable children with SEND to access this area of the curriculum, in line with their individual needs and through liaison with the school SENDCo.

Impact

The impact of children's progress and attainment in Computing will be measured through:

- Pupil Conferencing – pupils' enjoyment, interest, participation, confidence, preferences, opinions about lessons, resources and opportunities;
- Observations – teaching skills, pupils' learning, curriculum coverage, curriculum progression, teachers' skills audit;
- Planning scrutiny – curriculum coverage and progression, adaptation to pupils' needs;
- To what extent is Computing used to support learning in other subject areas;
- Audit and use of resources available to children for lessons other than Computing.