"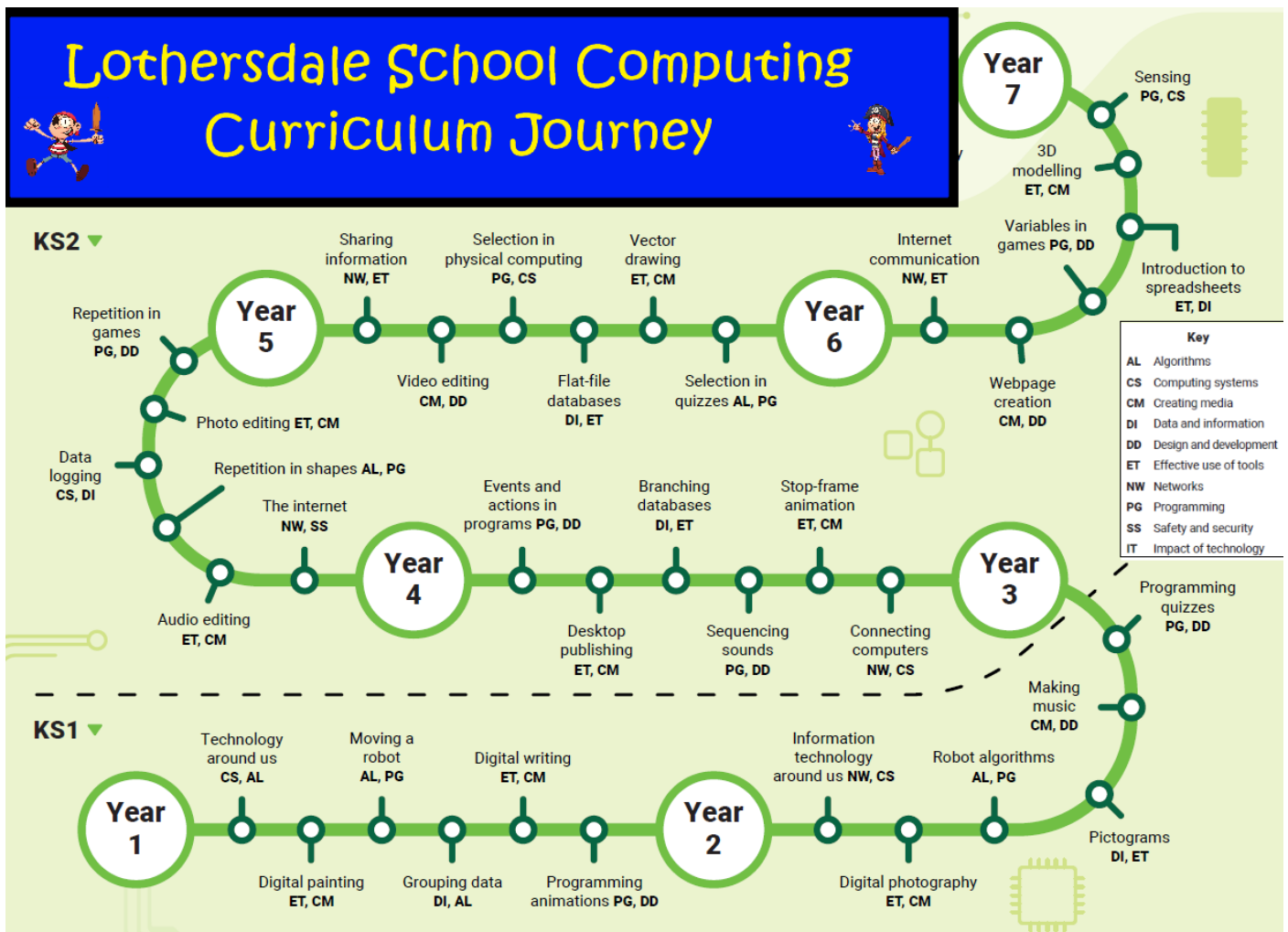A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Buildings 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." (National Curriculum, 2013)

At Lothersdale School, we follow the **Teach Computing** planned curriculum, as outlined below. Carefully chosen units of work ensure full curriculum coverage as well as ensuring progression of key skills within and between classes.

Lothersdale School Computing Curriculum Journey

Key

AL	Algorithms
CS	Computing systems
CM	Creating media
DI	Data and information
DD	Design and development
ET	Effective use of tools
NW	Networks
PG	Programming
SS	Safety and security
IT	Impact of technology

EYFS

In order to help ensure our Reception children's 'school readiness' and 'give them a broad range of knowledge and skills' that provide the right foundation for future learning, we introduce the term Computational Thinking in Class 1. Using curriculum resources created by **Barefoot Computing**, we use a range of activities to introduce Computational Thinking in EYFS. These include a wide assortment of familiar activities such as water play, outdoor play, role-play ideas, games and challenges.

Intent
- A well-planned, sequenced and progressive computing curriculum at Lothersdale Primary School enables the children to develop their understanding and use of technology through practical and exploratory opportunities.   - As they move through school, the children develop an understanding of how technology and digital systems work. Sequenced learning opportunities, coupled with identified endpoints in learning for each unit of work provide a structured and progressive curriculum for all.   - Children develop their digital literacy, showing that they know how to use technology respectfully and safely.   - Children engage and develop a deep understanding of computer science, knowing how to develop and create programs for a range of purposes.   - The computing curriculum aims to develop children as computational thinkers to enable them to solve problems across the whole curriculum and on into life in general.

Implementation
- The children are taught a balanced curriculum, following the Teach Computing Curriculum, which is sequenced appropriately across the four key areas of computing: **Computing Systems and Networks**   **Creating Media**   **Data and Information**   **Programming**   - Discreet computing is taught in blocked units, following an adapted mixed-age class programme of study, based on a 2-year cycle.   - Children develop fluency in using technology for a range of purposes.   - Staying safe online is integrated into all areas of the curriculum. It is taught specifically in computing and within PSHE.   - Computing lessons focus on collaboration and creativity by providing extended periods of time to work independently and with others to solve problems and develop the knowledge and skills required to be computational thinkers.

Impact: to be reviewed at the end of each year

Substantive and disciplinary knowledge in computing

Substantive Knowledge

The key substantive knowledge in computing is understanding *how to use* technology, how to be safe and knowing how to program. This is developed through deliberate practice and by children applying their knowledge of how to be computational thinkers.

Computational thinking lies at the heart of our curriculum. It includes the key building blocks for success in computing such as how to decompose problems into smaller chunks. As computational thinking skills develop children become more adept at applying logic, spotting patterns, planning algorithms and evaluating computer programs.

Disciplinary knowledge

Disciplinary knowledge in computing is the use and interpretation of substantive knowledge in order to develop original digital content and programs.

Creativity

Computing is an area of the curriculum that has many opportunities for children to demonstrate creativity through developing their own programs, systems and digital content whilst applying their developing computational thinking. Computing has opportunities for natural cross-curricular learning; examples include presenting data in tables, researching in History or writing instructions in English.

Assessment

Assessment in computing consists of prior-knowledge, low-stakes quizzes (ARRRGHs!) which enable children to demonstrate connected knowledge held in the long term memory as well as new knowledge. The initial Arrrgh! helps to identify any misconceptions that need to be addressed. On occasion, work is created on digital devices and as such is not always recorded in a book. However, some learning activities are 'unplugged' and do involve written work in books. Work in books is marked for accuracy, and feedback is given verbally to children in order to support them to progress within and across lessons. Children recall their knowledge at regular intervals to ensure an alteration to long term memory. Any forgotten or gaps in knowledge are addressed immediately. ARRRGHS! are repeated at intervals of approximately 2, 6 and 12 weeks after a unit of work to help secure learning in the children's long-term memory.

Reviewed October 2022 - CG