# Ted Wragg Trust Curriculum Map: Computer Science

#### What do we do?

Achieving success in Computer Science for all pupils involves implementing effective teaching strategies, fostering a supportive learning environment, and providing access to resources. We believe that all our pupils should develop a strong understanding of problem solving, and through hard work all pupils can achieve success.

## How does Computer Science equip students with powerful knowledge?

Computer Science equips students with powerful knowledge by providing them with a deep understanding of computational thinking, problem-solving skills, and the ability to harness technology for innovation. Through coding and algorithmic reasoning, students learn to break down complex problems into manageable components and develop systematic solutions. This discipline cultivates a mindset that encourages logical reasoning, creativity, and precision, essential attributes in today's technology-driven world. Additionally, Computer Science fosters adaptability, as students become adept at learning new programming languages and technologies, preparing them for the everevolving landscape of the digital era. The knowledge gained in Computer Science empowers students to not only navigate the intricacies of technology but also to contribute meaningfully to fields ranging from artificial intelligence to cybersecurity, unlocking a world of opportunities for personal and professional growth.

#### What skills and cultural capital do students gain in Computer Science?

In Computer Science, students acquire a valuable set of skills including critical thinking, problem-solving, and logical reasoning. These skills are essential in various aspects of life and work, empowering individuals to approach challenges systematically. Additionally, students gain cultural capital by becoming proficient in the language of technology, allowing them to participate actively in the digital society. This cultural capital extends to understanding the ethical implications of technology, fostering a well-rounded perspective that contributes to responsible and informed decision-making in an increasingly interconnected world.

### How do we support literacy in Computer Science?

Supporting literacy in Computer Science involves integrating clear and concise communication within coding practices, encouraging students to articulate their problem-solving processes and solutions, fostering a language-rich environment that enhances both written and verbal expression of computational concepts.

### How is the Computer Science curriculum designed?

The Computer Science curriculum is designed to provide a structured and comprehensive framework that introduces foundational concepts, programming languages, and problem-solving techniques, often progressing from fundamental principles to advanced topics, ensuring a cohesive and accessible learning experience for pupil.

## How do you sequence the curriculum so that new knowledge and skills builds on what has been taught before?

The curriculum is carefully sequenced to ensure a progressive learning journey, where each new concept builds upon previously taught knowledge and skills, allowing students to develop a solid foundation and advance in a logical and scaffolded manner.

#### Web Developer Games Developer/Designer App Developer Mathematician **Graphics Designer** Computer Programmer Teacher Hardware Designer CYCLE 3 Penetration Engineer • **Database Engineer Revision and GCSE** exams Component 2 mock paper CYCLE 3 CYCLE 2 2.5 – Programming Official March Languages & 11 2.3 -Mock Integrated Producing Development Robust Languages. **November Mock** Programs. 2.4 – Boolean Logic. CYCLE 1 CYCLE 3 CYCLE 2 2.1 – Algorithms. • 1.5 – System **Programming** • 1.3 – 10 using Python. Software. 2.2 – Programming Computer **Fundamentals** networks, 1.6 – Impacts of **Programming** connections technology. using Python. & protocols. 1.4 – Network Component 1 mock paper CYCLE 1 Security. • 1.1 – System 9 Architecture. 1.2 – Memory & Storage.

# **Key concepts**





















Development Significance

Problem Solving

breadth

diversity

Exposure to Historical Scholarship and recall

interpretations

continuity

**Potential Future careers in Computer Science**