

COMPUTING AT COLPAI: INTENT, IMPLEMENTATION AND IMPACT

INTENT

Computing at COLPAI intends to develop 'thinkers of the future' through a modern, ambitious and relevant education in Computing. We want to equip pupils to use the computational thinking and creativity that will enable them to become active participants in the digital world. It is important to us that the children understand how to use ever-changing technology to express themselves, as tools for learning and as a means to drive their generation forward into the future.

Whilst ensuring they understand the advantages and disadvantages associated with online experiences, we want children to develop as respectful, responsible and confident users of technology, aware of measures that can be taken to keep themselves and others safe online.

Our aim is to provide a Computing curriculum that is designed to balance acquiring a broad and deep knowledge alongside opportunities to apply skills in various digital contexts. Beyond teaching Computing discreetly, we will give pupils the opportunity to apply and develop what they have learnt across wider learning in the curriculum.

IMPLEMENTATION

At COLPAI, Computing is taught weekly using a variety of digital devices such as Chrome Books, iPads and programmable robots. Our scheme of work for Computing is adapted from the 'Teach Computing' curriculum and covers all aspects of the National Curriculum. This scheme was chosen as it was created by subject experts and is based on the latest pedagogical research. It provides an innovative progression framework of Computing content; concepts, knowledge, skills and objectives.

Coding is taught in KS1 using unplugged activities and programmable robots (BeeBots). Children then move on to using Code.org, which they continue to use in KS2. Code.org increases diversity in computer science by reaching students of all backgrounds, skill-level and in ways that inspire them to keep learning.

The implementation of the Computing curriculum at COLPAI is characterized by the following key features:

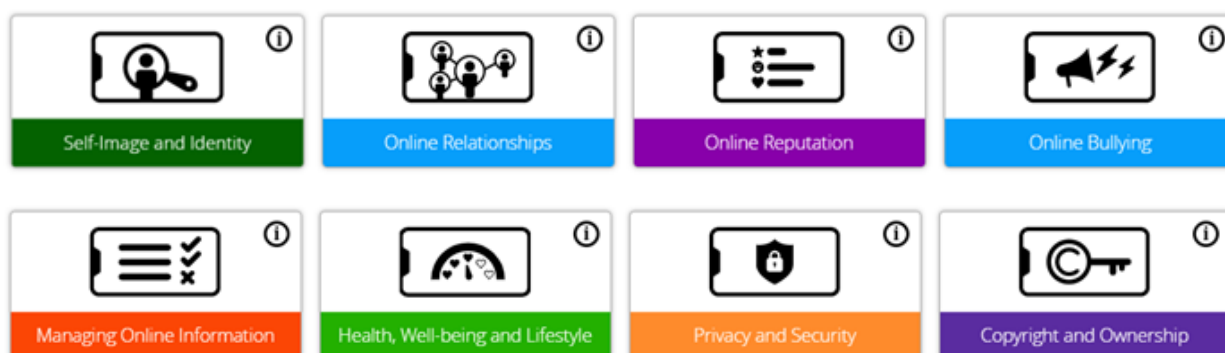
- **Ambitious and well-sequenced curriculum:** The school has a clearly defined and ambitious curriculum that builds upon prior knowledge and provides a progressive development of skills and concepts. It covers the three main areas of the Computing curriculum: computer science, information technology, and digital literacy, ensuring a broad and balanced approach.
- **Skilled and confident teaching:** Teachers are highly skilled, knowledgeable, and confident in delivering the Computing curriculum. They have strong subject knowledge, including an understanding of programming concepts, algorithms, and computational thinking. They use effective pedagogical approaches, such as inquiry-based learning, practical activities, and problem-solving tasks, to engage and challenge pupils.

- **Balanced coverage of curriculum areas:** The school ensures a balanced coverage across the three main areas of the Computing curriculum. Pupils have opportunities to develop their coding skills through programming activities, explore different types of software and hardware, and develop their understanding of digital literacy, including online safety, responsible and ethical use of technology, and effective communication skills.
- **Cross-curricular links:** Computing is not taught in isolation but is integrated into other curriculum areas whenever appropriate. Teachers make explicit links between Computing and other subjects, helping pupils see the relevance and real-life applications of computational thinking in a range of disciplines.
- **High-quality resources and equipment:** The school provides suitable resources, including hardware, software, and networks, that enable pupils to access and use technology effectively. Equipment is regularly updated to keep pace with technological advancements, ensuring that pupils experience a range of contemporary devices and software.

IMPLEMENTATION OF E-SAFETY

A key part of implementing our Computing curriculum is to ensure that safety of our pupils is paramount. We take online safety very seriously and we aim to give children the necessary skills to keep themselves safe online. Children have a right to enjoy childhood online, to access safe online spaces and to benefit from all the opportunities that a connected world can bring them, appropriate to their age and stage.

An element of E- Safety is covered during every Computing lesson. Children build online resilience through the use of the ‘Project Evolve – Education for a Connected World’ framework. The framework aims to support and broaden the provision of online safety education, so that it is empowering, builds resilience and effects positive cultural change. The objectives promote the development of safe and appropriate long-term behaviours, and support educators in shaping the culture within their setting and beyond.



Within each year group, topics include:

- **Self-Image and Identity.** This strand explores the differences between online and offline identity beginning with self-awareness, shaping online identities and media influence in propagating

stereotypes. It identifies effective routes for reporting and support and explores the impact of online technologies on self-image and behaviour.

- Online Relationships. This strand explores how technology shapes communication styles and identifies strategies for positive relationships in online communities. It offers opportunities to discuss relationships, respecting, giving and denying consent and behaviours that may lead to harm and how positive online interaction can empower and amplify voice.
- Online Reputation. This strand explores the concept of reputation and how others may use online information to make judgements. It offers opportunities to develop strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles.
- Online Bullying. This strand explores bullying and other online aggression and how technology impacts those issues. It offers strategies for effective reporting and intervention and considers how bullying and other aggressive behaviour relates to legislation.
- Managing Online Information. This strand explores how online information is found, viewed and interpreted. It offers strategies for effective searching, critical evaluation of data, the recognition of risks and the management of online threats and challenges. It explores how online threats can pose risks to our physical safety as well as online safety. It also covers learning relevant to ethical publishing.
- Health Well-Being and Lifestyle. This strand explores the impact that technology has on health, well-being and lifestyle e.g. mood, sleep, body health and relationships. It also includes understanding negative behaviours and issues amplified and sustained by online technologies and the strategies for dealing with them.
- Privacy and Security. This strand explores how personal online information can be used, stored, processed and shared. It offers both behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise.
- Copyright and Ownership. This strand explores the concept of ownership of online content. It explores strategies for protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.

IMPACT

At COLPAI, the impact of the Computing curriculum is evident in the following ways:

- Pupils are highly engaged in their learning and demonstrate enthusiasm for Computing. They make strong progress in acquiring and applying computational thinking skills, including problem-solving, logical reasoning, and algorithmic thinking. Pupil work provides clear evidence of their learning and achievements.
- Pupils acquire a broad and deep understanding of the key concepts, processes, and skills within the

Computing curriculum. They can demonstrate their knowledge of computer systems, programming, data handling, and e-safety through their work and discussions.

- Pupils develop effective communication and collaboration skills, both through their interactions with technology and in working collaboratively with their peers. They can effectively express their ideas, work together to solve problems, and provide constructive feedback to others.
- Pupils demonstrate a high level of digital literacy, understanding the safe and responsible use of technology. They can critically evaluate online information, protect their privacy, and engage positively in online communities. They have a good awareness of the potential risks associated with technology and know how to mitigate them.
- Pupils are inspired to consider careers in the field of Computing. They develop aspirations and confidence to pursue further study or work in areas such as programming, software development, data analysis, or other related roles. They see the relevance of Computing in their everyday lives and the wider society.

Finding the right balance with technology is key to an effective education and a healthy lifestyle. The way we implement Computing helps children realise the need for the right balance and one they can continue to build on in their next stage of education and beyond. We encourage regular discussions between staff and pupils to best embed and understand this. The way pupils share, celebrate and publish their work will best show the impact of our curriculum. We also look for evidence through reviewing pupil's knowledge and skills digitally through tools like Google Drive and observing learning regularly. Progress of our Computing curriculum is demonstrated through outcomes and the record of coverage in the process of achieving these outcomes.