Computing Curriculum Statement

"Computers are like bicycles for the mind"

Steve Jobs

Intent – What we are trying to achieve?

Computing at Orchard Primary School intends to develop 'thinkers of the future' through a modern, ambitious and relevant education in computing.

Our intent, when teaching Computing, is to inspire children about technology and its role in the world; to promote the children's interest and understanding of digital systems, programming, and the impact of technology on society. We want our children to develop their digital literacy, problem-solving, critical thinking, and creative abilities through hands-on experiences and high-quality teaching, building on their knowledge, skills, and interests. It is also vital that we encourage in our pupils, responsible digital citizenship and ethical use of technology in order to prepare them for an ever-changing world.

Implementation – How do we translate our vision into practice?

- At Orchard, computing is taught using a blocked curriculum approach, following the NCCE Teach Computing curriculum scheme. This ensures children are able to develop breadth and depth in their knowledge, through key concepts and skills development.

- Our Teach Computing scheme encompasses 12 key pedagogical principles:
  1. **Lead with concepts** – acquisition of knowledge, terms, vocabulary, shared understanding
  2. **Unplug, unpack, repack** – unpack complex terms/ideas, explore unfamiliar contexts, then repack original concept with new learning to secure understanding
  3. **Work together** – we encourage collaboration such as peer programming, instruction and tasks which stimulates classroom dialogue and articulation of concepts
  4. **Get hands on** – the use of physical computing/activities offers tactile and sensory experiences to enhance learning. Combining electronics with arts/crafts provides a creative and engaging context
  5. **Model everything** – scaffolding is key for effective teaching and learning (and can be gradually taken away)
  6. **Create projects** – rich opportunities to apply and consolidate learning; design, make, evaluate
  7. **Add variety** – lessons are adaptive, structured and provide exploratory tasks. Children develop independence.
  8. **Foster program comprehension** – regular comprehension activities secure understanding and build connections with new knowledge
  9. **Challenge misconceptions** – Formative questioning is a tool used to uncover misconceptions, which are identified as early as possible.
  10. **Make concrete** – abstract concepts are brought to life with real-world contextual examples; this is achieved by unplugged activities, proposing analogies, storytelling around concepts and links to concepts in pupils' lives
  11. **Read and explore code first** – code is taught by reading it first, before writing. Research shows that reading, tracing and explaining code augments pupils' ability to write code
  12. **Structure lessons** – supportive frameworks, such as PRIMM (predict, run, investigate, modify and make) and Use-Modify-Create, ensure differentiation is built in to suit the needs of all pupils.

- Formative and summative assessment tools (such as end of unit quizzes and rubrics) are used to gauge understanding, application of skills and vitally, next steps for learning
- Employing cross-curricular links motivates pupils and supports them to make connections and remember the steps they have been taught
- Children have access to the hardware that is needed to support the scheme of work including; laptops, iPads, chrome books, interactive white boards and remote-controlled devices
- Teachers are trained regularly in latest technologies and relevant E-safety information
- Ensure teachers happy and confident in delivering all areas of curriculum and upskill where needed
- Parents are regularly updated about the Computing curriculum and E-safety information via the school communications and events for parents run by the school

Impact – What is the impact of our curriculum on the students?

- Our children are confident and independent learners, who are able to use a wide range of hardware and software
- Pupils take online safety very seriously; they know how to keep themselves safe and respect others' privacy
- Our approach to the creative curriculum results in a fun, engaging, and high-quality computing education (across discreet lessons and in all other areas of the curriculum)
- Pupils show an eagerness to learn, an increasing technical ability and creative flair across a range of digital tasks. They are continually recapping and building on concepts and skills learned which enables them to consolidate learning
- Pupils can use technology to help them learn in a range of contexts and can display their learning using a wide range of digital formats
- Proficient and supportive Digital Leaders are able to assist others within high quality Computing sessions
- All of our subject-specific knowledge developed in our Computing lessons equips pupils with experiences which will benefit them in secondary school, further education and future workplaces
- Our children will become more independent throughout their school-life and develop key life skills such as problem-solving, logical thinking and self-evaluation will become second nature