Member of Staff Responsible: P Feely Policy Written: November 2022 Approved by governors: December 2022 Date for renewal: December 2025



Computing Foundation Subject Policy

Intent

"Coding is today's language of creativity. All our children deserve a chance to become creators instead consumers of computer science."

Maria Klawe

Canadian Computer scientist & advocate for women in STEM

A high-quality computing education equips pupils to use computational thinking and 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. 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. Building 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.

WE CAN provide teaching that develops knowledge and skills so children can learn and progress effectively

Throughout Key Stage 1 and Key Stage 2, children at Grendon experience hands-on learning which meets the requirements of the Computing National Curriculum. Computing is represented in the chocolate chip programme with planned opportunities to share Computing learning with parents.

WE CAN offer enriching activities, events and experiences

Computing skills are often used during our Whole School Days or Junior Leaders Days either as the focus for learning or as a tool to enable children to learn about new ideas or information.

WE CAN work together to remove barriers and ensure equality

The children who are most confident in using technology may be asked to share their expertise and support a less confident peer in computing lessons. For those children who find accessing computing lessons more challenging due to their individual needs, additional support or modified tasks and apparatus may be used.

WE CAN build independent and resilient learners who are able to communicate confidently

We promote opportunities for children to work as independent learners in Computing lessons. In Computer Science, children are regularly required to debug or fix code that doesn't work. This process helps to develop resilient learners with a WE CAN attitude. Children are reminded to learn from their mistakes, use their growth mindset and to keep trying. In Information Technology, pupils use communication skills to generate, present and share their ideas.

WE CAN listen to and treat each other and all members of the community with respect, tolerance and concern

Digital Literacy helps to promote the British values of respect and tolerance by exploring the links between the real and online and the idea of Digital Citizenship. Children learn that you must act online as you would in the real world. All year groups learn that positive communication and respect are as important online as in the real world.

WE CAN recognise ability, maximise potential and prepare children well for their future and life in modern Britain

The Computing curriculum prepares our children for their future by teaching essential life skills. The ability to research and present information will be essential for children as they move on to secondary, further education and into the world of work.

Implementation

Roles and Responsibilities

- The Class teacher is responsible for delivering Computing learning as outlined in the curriculum
- The Computing subject leader is responsible for
 - Updating unit plans in response to annual evaluations
 - o ensuring all resources for teaching are available and well organised,
 - \circ offering support with Computing teaching and learning,
 - \circ maintaining an oversight of assessment outcomes,
 - monitoring the quality of teaching and learning,
 - keeping up to date with the latest best practice Computing teaching.
- The Curriculum Manager is responsible for supporting the Computing subject leader in their role.
- The Academic Lead is responsible for ensuring progression and continuity across the school.
- The Headteacher is responsible for overall academic provision and performance.

Organisation

Computing teaching is blocked. 3 units are taught each year; one Computer Science unit, one Information Technology, and one Digital Literacy. In the EYFS Computing children are exposed to different technologies. The units are outlined as unit plans in the Curriculum Document.

Computing is included in the annual cycle of homework projects. This allows children to engage in project-based design work at home with their families.

Teaching and Learning

Best practice is for Computing lessons to include practical, hands-on tasks and activities using a range of technology and to be set in a real-life context addressing a particular problem or need. Once this knowledge is secure it can be applied in other contexts across the curriculum. Modelling:

Models, examples and images should be used to demonstrate how to use technology. Modelling of how to complete tasks should form part of the teaching process. This can include identifying improvements.

Scaffolding:

To enable all children to develop from their starting points, scaffolding strategies should be used to enable children to complete an increasingly challenging standard of work with increased independance. Differentiation:

Children of all ability levels should be supported to access Computing work and to record their ideas in an appropriate way. Modifications to practical tasks including the use of different apparatus or additional adult or peer support may be appropriate.

Lower ability children may be asked to share their ideas verbally or have a simpler proforma for recording.

To extend the most able children, tasks may be modified to require additional explanation or alternatives.

Skills:

Children will have opportunities to develop team work skills and resilience as well as communication skills when presenting their work.

Cross Curricular Opportunities:

Opportunities for cross curricular maths, writing or reading and for the use of technology should be embedded in learning regularly.

<u>Planning Process</u>

Unit Plans:

A unit plan showing content and progression is provided to staff in Curriculum folders.

Vertical links allow Computing learning to build progressively between year groups.

Horizontal links allow children to link their Computing learning to other subjects in their year band. Diagonal links allow children to link their Computing learning back to other subjects covered in earlier year groups.

Mapping:

Teachers delivering the unit will map out the content across the number of lessons available. The Computing subject leader is available to offer advice on Medium Term Planning.

At this point, class teachers must identify which resources will be required, check what is available and make a request to the Computing subject leader for any additional resources required. Lesson Planning:

Teachers then plan individual lessons to deliver the required content.

Lesson plans should contain differentiation as appropriate to the children. The focus for lessons should be on the Computing knowledge and skills.

Resources

Laptops are stored in the locked laptop trolley in the IT Suite. Ipads are kept in the locked trolley in the PPA Room.

The IT Suite holds resources such as Bee-bots, headphones, microphones, and cameras.

Please keep the resources tidy and in the correct trolley or labelled box. If any of the resources are broken or not working, please let the Computing lead know as soon as possible. Our school technician is able to add apps to Ipads. Please make a request with sufficient time before you need it for your lessons.

Health and Safety

Some lessons in Computing will include an element of e-safety risk. All children are required to sign the school e-safety agreement annually. Class teachers should identify the best ways to mitigate any risks e.g. by setting clear expectations or increasing the level of adult support. Teachers must discuss any health and safety concerns with a Senior Leader and make reference to any risk in planning on Smart boards.

Equality and Inclusion

Computing teaching will be accessible to all children and challenge them appropriately. Where children need additional support this may be provided through scaffolding or adult support as part of universal provision.

Recording

Children from Year 1-6 have a network folder which is used to save documents. The Gallery section of Espresso Coding is also used to save work from Computer Science (coding) units.

Class teachers may choose to have a class working wall display during the course of a unit.

<u>Impact</u>

By the end of their time at Grendon Primary School children will have been exposed to a wide range of Computing projects. They will understand key topics related to Information Technology, Computer Science and Digital Literacy. Children may be inspired through their Computing lessons to pursue a future career in Cyber Security, App Development or Network Management.

<u>Assessment</u>

Assessments are made at the end of each unit. Class teachers refer to the assessment criteria referenced on unit plans and make a judgement on which children are meeting the expected standard, below the expected standard or exceeding the expected standard.

The Computing lead will analyse the data and identify strengths, weaknesses and any area where additional support is needed.