Computing – Subject on a page

Why we teach it

"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." **National Curriculum**

"The national curriculum for computing aims to ensure that all pupils:
• can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
• can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
• can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
• are responsible, competent, confident and creative users of information and communication technology"
National Curriculum

At St William of Perth we teach Computing to fulfill the requirements of the National Curriculum and to meet the following:
• Children are provided with guidance and support to develop their understanding of how to stay safe online in the digital world and be able to minimize risk to themselves and others.
• For children to understand and follow the SMART E-Safety rules, understand the E-Safety messages can keep them safe online and know who to contact if they have concerns.
• For children to be responsible, respectful, competent, confident and creative users of information and communication technology.
• For children to have the skills required to flourish in Computing so that they can be 'computer savvy'.
• Allow children to be digitally literate and ready for the next stage in their lives.
• Provide opportunity for children to discover an interest and potential unique talents in computing, build confidence and nurture well-being.
• Enable children to use computational thinking and creativity to further understand our world.
• Children can analyse problems in computational terms, and have repeated practical experience writing computer programs in order to solve such problems.
• Children can communicate ideas well by utilising appliances and devices throughout all areas of the curriculum.
• Encourage children to apply their learning in a range of contexts, e.g. at school and at home.
• Widen children's vocabulary both in terms of technical language but also descriptive language through their experiences in computing.
• Ensure children have a 'can do' attitude when engaging with technology and its associated resources.

INTENT - What we are teaching

We are following the 'Teach Computing Curriculum' for Key Stages 1 and 2. Each year group has one 'Computer systems and networks' unit, two 'Creating media' units, one 'Data and information' unit and two 'Programming' units. In some year groups these units include 'physical' computing. Links to online safety are made in each unit when appropriate and discrete teaching of online safety also takes place across the school. Year R follow the curiosity approach and integrate computing into their teaching as and when appropriate with links to the EYFS framework.

IMPLEMENTATION - How we teach it

• Children in KS1 and KS2 have one discrete lesson of Computing a week.
• Children to learn to use a range of electronical and practical resources, such as; iPads, Chromebooks, BeeBots, Crumbles and Micro:bits
• High quality teaching that is appropriately pitched to individuals.
• Follow a clearly sequenced and progressive program of study based on the National Curriculum.
• Teachers plan using the 'Teach Computing Curriculum', which highlights the knowledge, skills and vocabulary for each year group and is progressive from year to year.
• Children are taught one Computing unit a term.

• Technological vocabulary shared with the children for each Computing unit.
• Children given opportunity to develop a range of computing skills.
• E-safety lessons are explicitly taught to develop children's knowledge and understanding of being safe online, for example, on Safer Internet Day.
• Cross-curricular links used to allow children to experience how computing can fit into the wider world.

IMPACT - What is working

• Teachers are happy with the 'Teach Computing' resources that we are using and have given positive verbal feedback about the lessons and the learning taking place.
• Pupils have been positive about Computing lessons and the Teach Computing lessons.
• The use of the chromebooks has had a very positive impact and has enabled whole class teaching of Computing to take place.
• The loan of physical computing equipment (micro:bits and crumbles) from a secondary school has been very successful

On the scale below rate where you believe this subject currently stands in terms of your overall curriculum offer:

Developing **Secure** **Embedded**

Computing leader actions and impact

Previous Improvement Actions and Impact	Current Improvement Actions	Future Improvement Actions
. To implement a new Computing Curriculum: the 'Teach Computing Curriculum'. This has ensured that we are meeting the requirements of the National Curriculum and has also increased staff confidence in teaching Computing. . Set up a mobile Computing Suite with two trolleys of 15 Chromebooks. This has allowed whole class lessons of Computing to take place in classrooms (previously the school only had access to a Computer Suite with 15 computers). . The loan of physical computing equipment (Crumbles and Micro:bits). This was very successful and we are looking to repeat this when possible. . Set up a bank of cameras that can be used to deliver some of the 'Creating Media' units in KS1 and KS2. We now have a set of cameras that are being used successfully in Computing lessons. . Set up physical pupil 'Computing' folders where work can be stored. Each child now has their own folder. . Set up and begin using pupil Google accounts to access the Chromebooks and save work online to their own personal drives. Accounts have been set up for all pupils and are being used across the school to access the Chromebooks. In Key Stage 2, some classes are also using Google Classroom and Google Drive in lessons.	. To re-establish 'digital leaders'. . To set up and run a 'Coding Club'. . To register for the 'BBC micro:bit next gen' project in order to be eligible to receive a school set of 30 micro:bits.	. To assess children's achievements in Computing using a robust assessment system. . Carry out Staff Voice and Pupil Voice surveys to get feedback on the subject of Computing. . To purchase a set of headsets that can be used with the Chromebooks so that microphones and headphones can be used when needed in lessons.