



# Computing

Next review: Spring 2022

## **Aims**

Through Computing we aim to equip the children of St Wilfrid's with high quality digital literacy and creative thinking to succeed in the areas of information and communication technology. We enable them to link computational thinking with other subjects and provide insight and experience into the principles of computer science, such as information, programming, problem solving, research, the safe exchanging of information and data representation. Our goal is to guide children to become confident, responsible and creative users of digital technology.

## **eSafety**

eSafety is of paramount importance at our school. Children are taught how to use technology safely and respectfully, keep personal information private and raise concerns about content or contacts online. Our eSafety policy closely adheres Local Authority guidelines. The school also raises eSafety awareness by participating in the annual 'Safer Internet Day' with whole-school and class activities.

## **Health and Safety**

The school is aware of the health and safety issues involved in children's use of technology. All electrical appliances in school are regularly tested. It is advised that staff should not bring their own electrical equipment in to school but if this is necessary, then the equipment must be PAT tested before being used in school. This also applies to any equipment brought in to school from external providers.

## **Security**

- The ICT and computing technician will be responsible for regularly updating school software and the upkeep of equipment.
- All pupils and parents will be aware of the school rules for responsible use of ICT and computing and the internet and will understand the consequence of any misuse.
- The agreed rules for safe and responsible use of computing are displayed in all areas children use provided equipment.
- Access to the internet is monitored by the computing technician and the Smoothwall firewall program provides a filter that protects children from accessing inappropriate websites.

## **Teaching and Learning**

As the aims of computing are to equip children with the skills necessary and digital literacy to use technology to become independent learners, the teaching style that we adopt is active and practical. Children are given direct instructions on how to use hardware or software in discrete lessons but we also seek out opportunities for cross curricular learning across all subjects. For example, children might research a history topic by using online resources. Science lessons might use a tablet or data logger to model a problem or to analyse data. We encourage the children to explore ways in which the use of computing can improve their results, for example,

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how a piece of writing can be edited in word processing software or how the presentation of a piece of work can be improved.

Our Microsoft's Office suite license enables children to use the software to edit and improve their work; they learn how to develop their digital creations. The use of video, editing apps, voice recorders and multimedia products allow children to produce presentations that improve their speaking and listening skills.

Computing can build upon the mathematical skills of the children. Children collect data, make predictions, analyse results and present information graphically. They also acquire measuring techniques involving positive and negative numbers, and including decimal places. Use of the interactive screens in class has made the consolidation and repetition of some mathematical concepts more accessible. Data handling software assists the construction of graphs, charts, etc. and their analysis and interpretation.

Computing forms part of our school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Its use impacts on the quality of work that children produce and increases their confidence and motivation. When planning work, we can take into account children's next steps. Computing can help children in achieving their targets and progress in their learning.

Inclusion is a key part of our school ethos and we recognise the differing needs and accessibility each pupil has. We provide suitable learning opportunities for all children.

### **Curriculum**

#### ***Early Years***

Pupils are taught the following targets from the EYFS Curriculum:

- Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.

This statement permeates the three areas for learning development of Communication and Language, Physical Development and Personal, Social and Emotional Development.

It is important in the Foundation Stage to give children a broad, play-based experience of computing in a range of contexts, including outdoor play. Computing is not just about computers. Early Years learning environments should feature computing scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities to 'paint' on the whiteboard or program a toy. Recording devices can support children to develop their communication skills. This is particularly useful with children who have English as an additional language.

#### ***Key Stage 1***

Pupils are taught the following targets from the National Curriculum:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs

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- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

### **Key Stage 2**

Pupils are taught the following targets from the National Curriculum:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

### **Planning**

The school uses the National Curriculum, Scholastic Computing and Rising Stars 'Switched on Computing' scheme of work to inform the planning, making adaptations as appropriate.

The school produces long and medium term planning which covers age related expectations for the each year group. The Scholastic scheme of work in KS1 focuses on opportunities for cross-curricular learning in other subjects, such as English and History. Rising Stars' 'Switched on Computing' provides teachers with planning and resources that sets targets within each year group and supports the statement in the DfE Computing Programme of Study '*A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world.*'

### **Resources**

There is a high level of ICT provision in school. The school has invested in a range of equipment that supports teaching and learning for all. Each classroom has a large interactive touch screen connected to a staff laptop. Children. The current list of hardware devices include:

- 32 pupil laptops
- 39 iPads, docking station and iMac. (8 staff use)
- Large interactive screen and laptop for use in the hall or meeting room.
- 4 Flip cameras
- 1 Digital SLR camera
- 2 USB microphones

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- 1 Digital movie camera
- 4 Data Loggers
- Beebot programmable toy
- All laptops have access to the online software Microsoft Office 365, as well as a range of products designed to enhance various aspects of the curriculum. The school has subscriptions to other online services such as, Splash Phonics, Spelling Shed, Times Tables Rock Stars and Education City that provide current materials for staff and pupils to use.

### **Record Keeping and Assessment**

We aim for children to know, apply and understand the targets set out in their year group's programme of study. Children are assessed using formative and summative assessments that track their progress during a unit of work. Effective feedback is given throughout and children also self-assess their progress.

Below, is an example of the curriculum ladder assessment tool that is used by the school for assessment in discrete Computing lessons and cross-curricular opportunities.

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<b>Key Objective</b>	<b>WTS</b>	<b>GDS</b>	<b>%EXS+</b>
<ul style="list-style-type: none"> <li>▪ Have a clear understanding of algorithms as sequences of instructions.</li> <li>▪ Convert simple algorithms to programs.</li> <li>▪ Predict what a simple program will do.</li> <li>▪ Spot and fix (debug) errors in their programs.</li> </ul>			
<ul style="list-style-type: none"> <li>▪ Describe carefully what happens in computer games.</li> <li>▪ Use logical reasoning to make predictions of what a program will do.</li> <li>▪ Test these predictions.</li> <li>▪ Think critically about computer games and their use.</li> <li>▪ Be aware of how to use games safely and in balance with other activities.</li> </ul>			
<ul style="list-style-type: none"> <li>▪ Consider the technical and artistic merits of photographs.</li> <li>▪ Use a digital camera or camera app.</li> <li>▪ Take digital photographs.</li> <li>▪ Review and reject or rate the images they take.</li> <li>▪ Edit and enhance their photographs.</li> <li>▪ Select their best images to include in a shared portfolio.</li> </ul>			
<ul style="list-style-type: none"> <li>▪ Develop collaboration skills through working as part of a group.</li> <li>▪ Develop research skills through searching for information on the internet.</li> <li>▪ Improve note-taking skills through the use of mind mapping.</li> <li>▪ Develop presentation skills through creating and delivering a short multimedia presentation.</li> </ul>			
<ul style="list-style-type: none"> <li>▪ Understand that email can be used to communicate.</li> <li>▪ Develop skills in opening, composing and sending emails.</li> <li>▪ Gain skills in opening and listening to audio files on the computer.</li> <li>▪ Use appropriate language in emails.</li> <li>▪ Develop skills in editing and formatting text in emails.</li> <li>▪ Be aware of online safety issues when using email.</li> </ul>			
<ul style="list-style-type: none"> <li>▪ Sort and classify a group of items by answering questions.</li> <li>▪ Collect data using tick charts or tally charts.</li> <li>▪ Use simple charting software to produce pictograms and other basic charts.</li> <li>▪ Take, edit and enhance photographs.</li> <li>▪ Record information on a digital map.</li> </ul>			