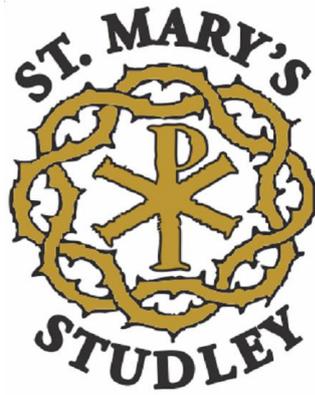# ST. MARY'S CATHOLIC PRIMARY SCHOOL, STUDLEY

Computing Policy

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Computing Policy

1 Aims and objectives

1.1 Computing has become part of the way in which we all work and entertain ourselves. Almost everything we do at school now involves the use of computing:

- online lesson research, teaching plans and resource materials;
- lesson delivery via either an interactive whiteboard, visualiser or iPads
- communication by e-mail and fax;
- document distribution and storage;
- assessment information analysis;
- production and editing of reports.

Thus, through teaching Computing, we equip children to participate in a world of rapidly changing technology. We enable them to find, explore, analyse, exchange and present information. We also help them to develop the necessary skills for using information in a discriminating and effective way. This is a major part of enabling children to be confident, creative and independent learners.

1.2 Our objectives in the teaching of Computing are:

- to develop logical thinking and reasoning
- to facilitate the finding, selection and use of information;
- to teach the use of Computing for effective and appropriate communication;
- to enable the monitoring and control of events, both real and imaginary;
- to teach the application of Computing to children's learning across the curriculum;
- to explore the value of Computing, both to children and to society in general;
- to develop an understanding of issues of security, personal safety, confidentiality and accuracy;
- to develop the cross-curricular use of Computing in all subjects.

2 Teaching and learning style

2.1 As an objective of teaching of Computing is to equip children with the technological skill to become independent learners, the teaching style that we adopt is as active and practical as possible. While, at times, we do give children direct instruction on how to use hardware or software, the main emphasis of our teaching in Computing is for individuals or groups of children to use computers to help them to progress in whatever they are studying. So, for example, children might research a history topic by using role-play software that engages them in a highly visual way, or they might place themselves in a historical setting by manipulating a digital photograph, or they might investigate a particular issue on the Internet.

2.2 We recognise that all classes have children with a wide range of Computing abilities. This is especially true when some children have access to Computing equipment at home, while others do not. We provide suitable learning opportunities for all children by matching the challenge of the task to the ability and experience of the child. We achieve this in a variety of ways:

- setting tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (not all children complete all tasks);
- sometimes grouping children by ability in the room, and setting different tasks for each ability group;
- providing resources of different complexity that are matched to the ability of the child;
- using classroom assistants to support the work of individual children or groups of children.

3　Computing curriculum planning

3.1　The school uses the Scholastic scheme of work for Computing as the basis for its curriculum planning. This fits with the new curriculum expectations and provides continuity.

3.2　We carry out the curriculum planning in Computing in three phases (long-term, medium-term and short-term). The long-term plan maps the Computing topics that the children study in each term during each key stage. The Computing subject leader devises this in conjunction with teaching colleagues in each year group, and the children often study Computing as part of their work in other subject areas.

Our long-term Computing plan shows how teaching units are distributed across the year groups, and how these fit together to ensure progression within the curriculum plan.

3.3　Our medium-term plans, which we have adopted from the Scholastic scheme of work, give details of each unit of work for each term. They identify the key learning objectives for each unit of work, and stipulate the curriculum time that we devote to it. The Computing subject leader is responsible for keeping and reviewing these plans.

3.4　The class teacher is responsible for writing the short-term plans with the Computing component of each lesson. These daily plans list the specific learning objectives and expected outcomes for each lesson. The class teacher adapts individual plans and s/he and the Computing subject leader discuss them on an informal basis, to match the ability in each class.

3.5　The topics studied in Computing are planned to build on prior learning. While we offer opportunities for children of all abilities to develop their skills and knowledge in each unit, we also plan progression into the scheme of work, so that the children are increasingly challenged as they move up through the school.

4　The Foundation Stage

4.1　We teach Computing in reception classes as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the Computing aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. The children have the opportunity to use the computers, a digital camera, a floor robot and iPads. Then, during the year, they gain confidence and start using the computer to find out information and to communicate in a variety of ways.

5   The contribution of Computing to teaching in other curriculum areas

5.1   The teaching of Computing contributes to teaching and learning in all curriculum areas. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. For example, graphics work links in closely with work in art, and work using databases supports work in mathematics, while role-play simulations and the Internet prove very useful for research in humanities subjects. Computing enables children to present their information and conclusions in the most appropriate way. Much of the software we use is generic and can therefore be used in several curriculum areas.

5.2   **English**

Computing is a major contributor to the teaching of English. Children's reading development is supported through talking stories. As the children develop mouse and keyboard skills, they learn how to edit and revise text on a computer. They have the opportunity to develop their writing skills by communicating with people via e-mail, and they are able to join in discussions with other children throughout the world through the medium of video conferencing. They also learn how to improve the presentation of their work by using desktop publishing software. There is in addition a variety of software which targets specific reading, grammar and spelling skills.

5.3   **Mathematics**

Children can use Computing in mathematics to collect data, make predictions, analyse results, and present information graphically. Screen robots allow pupils to give exact instructions for a particular route, or to use their knowledge of angles to draw a range of polygons. We use an increasing range of Apps and software in class learning.

5.4   **Science**

Software is used to animate and model scientific concepts, and to allow children to investigate processes which it would be impracticable to do directly in the classroom.

5.5   **Personal, social and health education (PSHE) and citizenship**

Computing makes a contribution to the teaching of PSHE and citizenship in that children in Computing classes learn to work together in a collaborative manner. They also develop a sense of global citizenship by using the Internet and e-mail. Through discussion of e-safety and other issues related to electronic communication, the children develop their own view about the use and misuse of Computing, and they also gain an insight into the interdependence of Computing users around the world. We work during whole school e-safety week and take part in Safer Internet Day (SID)

6   Computing and inclusion

6.1   At our school, we teach Computing to all children, whatever their ability and individual needs. Computing forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our Computing teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take

all reasonable steps to achieve this. For further details, see separate policies: Special Educational Needs; Disability Discrimination; Gifted and Talented Children; English as an Additional Language (EAL).

6.2   When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively (e.g. a lot of software can be differently configured for different ability ranges). Assessing progress against the National Curriculum levels of expectation allows us to evaluate each child's progress against expected levels. This ensures that our teaching is matched to the child's needs.

6.3   Intervention through School Action and School Action Plus will lead to the creation of an Individual Education Plan (IEP) for children with special educational needs. The IEP may include, as appropriate, specific targets relating to Computing. In some instances, the use of Computing has a considerable impact on the quality of work that children produce, by increasing their confidence and motivation.

6.4   We enable pupils to have access to the full range of activities involved in learning Computing. We have a range of software which is designed to include all learners, e.g. grid clicking. Our hardware can accept a range of input devices catering to pupils with specific difficulties. Where children are to participate in activities outside the classroom, e.g. a visit to an Computing exhibition, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils. Children who are gifted and talented in Computing are added to the G & T register and a note of their particular abilities made. Children with particular talents are encouraged to display their talents to the highest level and are encouraged to access a wider range of learning materials and experiences. These include virtual environments, research data and various enrichment activities. A separate appendix is attached to this policy to help teachers recognise the characteristics of G & T pupils in Computing and strategies employed to aid curriculum delivery.

7   Assessment for learning

7.1   Teachers will assess children's work in Computing by making informal judgements during lessons. On completion of a piece of work, the teacher assesses the work, and uses this assessment to plan for future learning. Written or verbal feedback is given to the child to help guide his/her progress. Older children are encouraged to make judgements about how they can improve their own work, particularly through self/peer evaluation.

7.2   The subject leader keeps samples of the children's work in a portfolio. This demonstrates the expected level of achievement in Computing for each age group in the school.

8   Resources

8.1   Our school has the appropriate computer-to-pupil ratio, and Internet access. Most software is already installed on PCs. Some software is installed only on the class PC.

8.2   We employ a technician to keep our equipment in good working order. Members of staff report faults in the book provided for that purpose in the Computing suite. The technician will also set up new equipment, and install software and peripherals.

8.3   There are a number of government-provided laptops which are on loan to particular teachers. Class teachers have an iPad for school use only. They can be used for many applications and can be checked by the SMT at any time.

8.4   In order to keep our school computers virus-free, no software from home will be installed on school computers. Pupils bringing in work on portable storage disks must first have it scanned. Where teachers are transferring files between their home and school, they must have up-to-date virus protection software on their home computers.

9   Monitoring and review

9.1   The coordination and planning of the Computing curriculum are the responsibility of the subject leader, who also:

- supports colleagues in their teaching, by keeping informed about current developments in Computing and by providing a strategic lead and direction for this subject;
- gives the headteacher an annual summary report in which s/he evaluates the strengths and weaknesses in Computing and indicates areas for further improvement;
- uses specially allocated regular management time to review evidence of the children's work, and to observe Computing lessons across the school.

9.2   The quality of teaching and learning in Computing is monitored and evaluated by the headteacher as part of the school's agreed cycle of lesson observations.

9.3   This policy will be reviewed at least every two years.

Pupils who are gifted and talented in Computing

Each school should have a G&T register. This can include pupils who are gifted and talented in Computing

Characteristics
Such pupils are likely to:
- Demonstrate Computing capability significantly above that expected
- Quickly become confident and competent in the use of newly introduced software, hardware and techniques
- Independently explore additional facilities within software and use their initiative to exploit the potential of more advanced features of Computing tools
- Transfer and apply Computing skills and techniques confidently in new contexts
- Explore independently beyond the given breadth of an Computing topic
- Understand when it is or is not appropriate to use Computing, or a particular piece of software
- Identify limits in the software and find ways around them
- Handle multi-step sequences with ease
- Strive for elegant solutions and methods rather than those which simply work and can appreciate the same
- Be able to explain their own work, their procedures or processes clearly to others
- Recognise why a problem has occurred and offer a solution
- Knows a number of ways to achieve a particular result and chooses the best under the particular circumstances

http://www.nc.uk.net/gt/ict/index.htm
http://www.standards.dfes.gov.uk/giftedandtalented/

Strategies for Curriculum Delivery
- Extend the range of technologies and software available.
- Planning activities which allow different tasks and/or differentiated outcomes from the same initial stimulus
- Increase opportunities for application within a subject
- Providing opportunities to extend children's skill and to develop breadth and depth in their knowledge, skills and understanding. e.g. create materials for use by others
- Provide opportunities for the child to explain methods, ideas etc – to the teacher, the whole class, small groups of children etc.
- Provide access to a wide range of information, materials and tools
- Provide more opportunities for evaluation, analysis and synthesis
- Provide for problem solving and constrained problem solving scenarios e.g. time or size limited, or elegance, originality or efficiency demanding
- Alter balance between expectation and support
- Provide opportunities for wider consideration of systems and solutions e.g. political, environmental, social etc
- Provide sufficient open-ended tasks to challenge all pupils, particularly those who are gifted in Computing.

From QCA 'Guidance on teaching the Gifted and Talented'

'It is important for teachers to have high expectations of pupils who are gifted in ICT and for classroom activities to provide opportunities for gifted pupils to develop and apply their particular capabilities. In order to break down some of the barriers that may constrain very able pupils, teachers should try to provide teaching and learning experiences that encourage all pupils to think creatively, explore and develop ideas, and try different approaches. All pupils should be encouraged to set their own questions, offer ideas, suggest solutions or explanations, and reflect on what they have heard, seen or done in order to clarify their thoughts.

Teachers should:
- use a variety of challenging questioning strategies to encourage pupils to draw on previous experiences and to apply their thinking to new situations
- set extension tasks that avoid repetition -- extension work should encourage pupils to pursue a greater depth of understanding of the subject or to apply their Computing skills in new contexts, including other subjects
- encourage pupils to use a wide range of source materials, including more complex data sets
- encourage pupils to combine evidence and/or information from a variety of sources, and to exchange and share their knowledge with a variety of audiences and for a variety of purposes
- challenge pupils about their approach to a task, in order to encourage them to justify their choices and try out alternative approaches
- provide a more complex problem as a stimulus for developing Computing systems, for example, a control problem with an increased number of inputs and variables
- encourage pupils to discuss the suitability of different approaches, the tools to be used, and the range of possible outcomes
- encourage pupils, as they are developing their Computing systems, to look for opportunities to develop greater efficiency, including automation of processes, and to consider where levels of integration can be increased. For example, pupils could be encouraged to write macros or to create mail merges that extract information from a database for integration with a word-processed document
- encourage pupils to refine their product by reviewing and evaluating the process undertaken, the Computing tools used, and the effectiveness of the end product in meeting the specified needs of the task
- discuss with pupils what they are learning, and encourage them to identify their own learning needs
- provide opportunities for gifted pupils to learn new Computing skills together or with older pupils, in order to accelerate their learning and give them an opportunity to challenge each other
- ensure that staff have the Computing expertise to challenge the most able pupils effectively
- review provision in terms of software and peripherals, to ensure that the most appropriate resources are available
- maintain a portfolio of outstanding work for teachers and pupils to look through
- use the internet and a school or local intranet to enable similarly gifted and interested pupils to collaborate on projects.