Computing Policy

Implementation Date – September 2024
Review Date – September 2025

Curriculum Rationale

We have the following goals in all curriculum areas:

Success – We celebrate individuality, and the success that each child has, and we recognise that this will take a variety of forms.

Motivation – We aim for all of our children to be motivated young people who have a desire to do their best and try their hardest.

Confidence – We provide a nurturing environment where all our pupils develop confidence in themselves to be successful members of their community.

Aspiration - We are aspirational for our children, providing a curriculum that ensures each learner has the opportunity to reach their true potential.

These aims are achieved by adhering to the following learning motto:

IGNITE – EXCITE – ENGAGE

We aim to:
Ignite a passion for learning and the curiosity to explore the world.
Excite pupils with a curriculum that is fun, and which contains a wealth of rich experiences
Engage all learners and members of the community.

Computing Policy

Introduction

At St Michael's Community Academy, we believe that Computing and the use of digital devices are central to the education of all children. Our commitment to this is reflected through the implementation of 1:1 iPads for all children in Years 2-6 as a tool for enhancing teaching and learning. Each pupil is given the opportunity to apply and develop his/her technological understanding and skills across a wide range of situations, equipment and tasks. Pupils are encouraged to develop a confident and safe approach to Computing and the use of ICT, with the understanding of the capabilities and flexibility of their resources. With the knowledge that Computing and ICT will undoubtedly continue to form a major part in the child's life at home, in further education and places of work, we ensure that the Computing and ICT experiences and abilities that the pupils are equipped with at our school, are effective and transferable life-skills and ensure that our pupils can be digitally confident in an ever-changing technological landscape.

Objectives

The National Curriculum 2014 states that a high quality Computing curriculum equips children to use computational thinking and creativity to understand and change the world. The core of Computing is computer science and at St Michael's Community Academy, pupils will be taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. Pupils will be equipped to use ICT to create programs, systems and a range of content. Computing at St Michael's Community Academy ensures that pupils become digitally literate, able to use and express themselves and develop their ideas through ICT, at a level suitable for their academic stage, which will develop them for the future workplace and as active participants in a digital world.

Intent

The Computing curriculum should offer opportunities for our pupils to:

- Develop their understanding of the fundamental principles and concepts of computer science;
- Develop their skills in using hardware and software to manipulate information in their process of problem solving, recording and expressive work;
- Develop a high quality computing education which equips them to understand and change the world through logical thinking and creativity;
- Develop their understanding of how digital systems work and to become digitally literate individuals;
- Explore their attitudes towards ICT, its value for themselves, others and society, and their awareness of its advantages and limitations;
- Be responsible, competent, confident and creative users of ICT.
- Use ICT safely.

The Curriculum

At St Michael's Community Academy, knowledge, understanding and skills in Computing and ICT are developed in each year group, from Foundation Stage to Year 6. The curriculum covers **five** broad areas of learning as outlined below:

1. Computer science

Our pupils should:

- Acquire and develop the skills associated with computer science in order to:
- 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 algorithms work and 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.

2. I.T.

Our pupils should:

- Acquire and develop skills associated with Information technology in order to:
- Use search technologies effectively;
- Select, use and combine a variety of software 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;
- Acquire and refine the techniques e.g. saving, copying, checking the accuracy of input and output needed to use devices;
- Practise mathematical skills e.g. ordering numbers including negative numbers, measuring and calculating to an appropriate number of decimal places, drawing and interpreting graphs and bar charts in real contexts;
- Learn why numerical and mathematical skills are useful and helpful to understanding;
- Develop the skills of collecting first hand data, analysing and evaluating it, making inferences or predictions and testing them, drawing and presenting conclusions, and use all these in their work using different devices.

3. Digital literacy

Our pupils should:

- Acquire and develop their skills in digital literacy in order to:
- Understand the opportunities networks offer for communication and collaboration;
- Be discerning in evaluating and presenting data and information;
- Be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

4. Language and Communication

Our pupils should:

- Develop language skills e.g. in systematic writing and in presenting their own ideas;
- Use the appropriate technical vocabulary;
- Read non-fiction and extract information from sources such as reference books, I-books, e-pub books or DVDs.

5. Online Safety (Project Evolve)

Our pupils should:

Have the opportunity to explore and respond to key issues such as:

- digital communication and the risks associated with the increased opportunities arising from contact online.

- self-image and identity
- cyberbullying and safe ways to conduct ourselves online
- Online-safety and the risks associated with exposure to a range of online content.
- Security and the risks of increased commerce, and the dangers of being exposed to fraudulent activity.
- plagiarism
- Safe uses of social media.

Skills covered throughout the school are further divided to ensure coverage and progression:

Coverage

The Foundation Stage (Nursery and Reception)

In the Foundation Stage, pupils should:

- Know how to operate simple equipment, e.g. turn on a CD player and use a remote control;
- Show an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones;
- Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images;
- Know that information can be retrieved from computers;
- Complete a simple program on a computer;
- Use ICT hardware to interact with age-appropriate computer software;
- Recognise that a range of technology is used in places such as homes and schools;
- Select and use technology for particular purposes.

Key Stage 1

Throughout years 1 and 2, pupils should:

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

Key Stage 2

Throughout years 3, 4, 5 and 6, pupils should:

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems and solving 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 worldwide 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;

- Use technology safely, respectfully and responsibly, recognise acceptable / unacceptable behaviour, identify a range of ways to report concerns about content and contact.

Features of Progression

To ensure pupils make progress in Computing, teaching promotes opportunities for children, as they move through the Key Stages, to advance:

- from using single forms of information to combining different types of information, matching the form of presentation to the audience and what is being communicated;
- from personal use of computing to using computing to meet the needs of, and communicate with, others;
- from using computing to replicate and enrich what could be done without computing e.g. playing a word game or drawing a picture to using devices for purposes that could not have been envisaged without it such as exploring 'what if' situations and modelling new ones;
- from using everyday language to describe work with computing to increasingly precise use of technical vocabulary and ways of recording;
- from personal use of computing in a few areas to understanding a wider range of uses of computing and the consequences of its use for themselves, their work and others;
- from using computing to address a single task eg writing a story to addressing more complex issues, and balancing conflicting needs and criteria.
- from organising information as separate items eg single graphic image to organising information in sequences and more complicated, interactive, structures eg a multimedia presentation or a database;
- from initial exploration of ideas and patterns to more systematic use of computing for analysis and design.

Planning

Early Years Foundation Stage

Computing in the Early Years Foundation Stage incorporates a range of different learning opportunities. Computing in EYFS is centred around play-based, unplugged (no computer) activities that focus on building children's listening skills, curiosity and creativity and problem solving.

This includes the following:

- taking a photograph with a camera or tablet
- playing games on the interactive whiteboard and iPads
- exploring an old typewriter or other mechanical toys
- using a Beebot
- watching a video clip
- listening to music

Allowing children the opportunity to explore technology in this carefree and often child-led way, means that not only will they develop a familiarity with equipment and vocabulary but they will have a strong start in Key Stage 1 Computing and all that it demands.

Key Stage 1 & 2

Computing is planned by class teachers using Magpie Education and both 'Teach Computing', 'Code.org' and "Project Evolve" which provide schemes work. Computing is taught weekly in both key stages, in accordance with the 2014 National Curriculum. An appropriate balance and distribution of work across each half term is provided with ample opportunity to revisit and extend pupils' learning. During each half term, specific learning objectives, tasks and activities are assessed using the markbook in the marking and assessment portal within the Magpie Education app.

In Key Stage One, floor books are used to evidence the children's learning journey and teachers photograph the children's learning to evidence progression. Pupil voice is captured during lessons, as an additional opportunity for formative assessment, and this is included within the floor books.

In Key Stage Two, learning will be shared via Showbie. Weekly resources will be uploaded to the lesson's folder on Showbie and this will allow all children to have direct access to the lesson's flipchart, making learning interactive. Where children complete a 'paper-based' learning task, this will be uploaded separately on Showbie and will be individually marked with comments and the use of an emoji, as per the feedback policy. Where work has been practical, photos will be uploaded to Showbie to evidence the learning that has taken place. When learning is based on Code.org, children will screenshot and screenshare their learning journey within the lesson and upload this to Showbie.

Assessment

Markbooks are used on Magpie Education's Planning and Assessment portal so that pupils' skills, understanding and abilities are accurately assessed after each lesson, using the following system, ensuring clarity and consistency across all year groups in Key Stage One and Two:

Values and Attitudes

Our pupils should:

- Work with others, listening to their ideas and expertise and treating these with respect eg cooperating and collaborating when using a computer as part of a group to ensure that all contribute;
- Acknowledge the ownership of ideas and recognise the value of information held on ICT systems eg. recognising how much work has gone into producing a computer file, and how easily careless access can destroy it;
- Be aware of the security of their own and other people's information in electronic form eg recognise that they should ask before reading or copying from other's work;
- Recognise the importance of printed output eg keeping examples of work safe so that source files may be easily identified when work is developed at a later date;
- Be creative and persistent eg when assembling a computer file from a large amount of source material;
- Consider the origin and quality of information and its fitness for purpose;
- Evaluate critically their own and others' use of computing;
- Recognise the strengths and limitations of computing and its users eg recognising that a work processor is an effective and efficient tool to help writing, but, on occasion, handwritten text is more appropriate;
- Develop knowledge and understanding of important ideas, processes and skills and relate these to everyday experiences;
- Learn about ways of thinking and finding out about and communicating ideas;
- Explore values and attitudes through computing.

Health and Safety

- Pupils should not be responsible for moving heavy equipment around the school.
- Children in Years 2-6 are shown how to carefully and responsibly plug their 1:1 iPads into the class trolley at the end of each day, ensuring that these are put in the correct place and are handled with care.
- Food and drink should not be consumed near any computing/ICT equipment.
- It is the responsibility of staff to ensure that computing equipment is stored securely, cleaned regularly and that laptops and tablets are returned to the trolleys, and plugged in, at the end of each day.
- An adult should always supervise children when they are accessing information via the Internet. The service provider does filter information but staff are advised to take great care on the content accessed by children and are ultimately responsible for information accessed by pupils.

Staff training

Needs will be met by:

- Auditing staff skills and confidence in the use of information technologies regularly;
- Arranging training for individuals as required;
- The Computing Lead will attend courses and support and train staff as far as possible;
- Support will be provided via the Britannia Teaching School Alliance;
- Annual e-safety and safeguarding training must be arranged and completed by all staff working with children;
- All staff must be trained on professional conduct and safer working practices regarding technologies such as Twitter, Facebook, Blogging etc.