

## St Mary Magdalen's RCVA Primary School

### Computing Curriculum Statement

#### NATIONAL CURRICULUM PURPOSE OF STUDY

---

#### **THE NATIONAL CURRICULUM STATES THAT:**

---

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.

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.

#### **Early Years Foundation Stage**

- Computing is taught in the EYFS as an integral part of one of the seven areas of learning (Understanding the World: Technology). Children have free access to various forms of IT throughout the school day

---

## NATIONAL CURRICULUM REQUIREMENTS FOR SUBJECT CONTENT AT KS1

---

Pupils should be taught to:

- 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 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.

---

## NATIONAL CURRICULUM REQUIREMENTS FOR SUBJECT CONTENT AT KS2

---

Pupils should be taught 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 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

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

## **CURRICULUM INTENT**

All pupils at St. Mary Magdalen's RCVA Primary School have the right to have rich, deep learning experiences that balance all the aspects of computing. With technology playing such a significant role in society today, we believe 'Computational thinking' is a skill children must be taught if they are to be able to participate effectively and safely in this digital world. A high-quality computing education equips pupils to use 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. At our school, the core of computing is Computer Science in which pupils are introduced to a wide range of technology, including laptops, iPads, Bee Bots, Micro Bits and interactive whiteboards, allowing them to continually practice and improve the skills they learn. This ensures they become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology – at a level suitable for the future workplace and as active participants in a digital world.

We teach a curriculum that enables children to become effective users of technology who can:

- Understand and apply the essential principles and concepts of Computer Science, including logic, algorithms and data representation;
- Analyse problems in computational term, and have repeated practical experience of writing computer programs in order to solve such problems;
- Evaluate and apply information technology analytically to solve problems;
- Communicate ideas well by utilising appliances and devices throughout all areas of the curriculum.

St. Mary Magdalen's RCVA Primary School takes internet safety extremely seriously. We have an E- Safety Policy that provides guidance for teachers and children about how to use the internet safely. Every year group participates in lessons on e-safety and children understand how to stay safe when using technology.

You may find the following links useful to help your child stay safe online at home:

Understanding social networking sites and how to keep your children safe.	Common sense media
Great advice to help keep your children safe online.	Think U Know
Safety information for the whole family.	?
Report any illegal content on the internet.	ChildNet
Keep up to date with any e-safety issues.	Safer Internet
Safety information for parents.	ChildNet
Information on gaming safely with resources for parents and children.	Get Game Smart
Understand and share the world of social networking websites with your children.	Make it Secure

## **CURRICULUM IMPLEMENTATION**

---

### **SEQUENCE**

---

In Key Stage 1 the children will learn to understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. They will be taught to create and debug simple programs and use logical reasoning to predict the behaviour of simple programs. They will be shown how to use a range of technology purposefully to create, organise, store, manipulate and retrieve digital content as well as recognise common uses of information technology beyond school. They will be taught to 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. Each of these skills will be taught through exciting half termly units.

In Key Stage 2 the children will design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. They will use sequence, selection, and repetition in programs, use logical

reasoning to explain how some simple algorithms work and correct errors in algorithms and programs. Children will be taught to understand computer networks, including the internet, and the opportunities they offer for communication and collaboration. They will use search technologies effectively, learn to appreciate how results are selected and ranked, and be discerning in evaluating digital content. Children will be taught to select, use and combine a variety of software (including internet services) on a range of digital devices to create a range of programs, systems and content that accomplish given goals. They will use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Even our children in Early Years provision will be exposed to the understanding of internet safety as they explore the world around them and how technology is an everyday part of their learning and understanding of the world.

---

## TEACHING & LEARNING

---

The computing curriculum will operate over a two-year cycle. The units of work are taken from the Purple Mash scheme.

### Cycle 1

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KS1	<p>Online safety</p> <p>Develop keyboard skills.</p> <p>Exploring Purple Mash</p> <p>Introduction to Coding</p>	Spreadsheets	<p>Online safety</p> <p>Questioning (Data Handling)</p>	<p>Online safety</p> <p>Effective searching</p>	<p>Online safety</p> <p>Creating pictures</p>	<p>Making music</p> <p>Presenting ideas</p>
Lower KS2	<p>Online safety</p> <p>Effective Searching (using the Internet to search effectively)</p> <p>Hardware investigators (understand the different</p>	Animations	<p>Online safety</p> <p>Writing for different audiences (word processing skills)</p>	<p>Online safety</p> <p>Logo (To input sets of instructions according to programming language).</p>	<p>Online safety</p> <p>Coding</p>	Spreadsheets

	parts of a computer)					
UKS2	Online safety Coding	Text adventures ( coding continued)	Online safety Blogging	Online safety Spreadsheets	Online safety Networks	Quizzing

## Cycle 2

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KS1	Online safety  Develop keyboard skills.  Exploring Purple Mash.	Grouping and sorting objects.  Pictograms.	Lego builders. Maze explorers. ( sequencing instructions, programming)	Online safety  Coding	Online safety  Animation	Spreadsheets  Technology outside of school.
Lower KS2	Online safety  Touch typing	Spreadsheets	Coding	Online safety  Email (including e-safety)	Online safety  Branching databases	Simulations Graphing
Upper Ks2	Online safety  Coding	Game creator	Spreadsheets	Online safety  Databases	Online safety  3D Modelling	Concept Maps ( Presentation)

---

## SPECIAL EDUCATIONAL NEEDS

---

Pupils with Special Educational Needs and Disabilities have the same Computing entitlement as all other pupils and are offered the same curriculum. However, particular application/tools are used for:

- Pupils with learning difficulties need to be motivated to practise basic skills regularly and intensively. They will benefit from the use of programs which practice skills is set in the context of an enjoyable and motivating scenario.
- Pupils with physical disabilities and communication difficulties.
- Pupils of high ability who may be extended through the use of programs which offer challenge and opportunities for investigation.

All Computing lessons are tailored to the individual needs of the children in the class. The teachers model activities and provide differentiated tasks to support learning. Lessons are pitched at an appropriate level.

---

## **SPIRITUAL, MORAL, SOCIAL & CULTURAL DEVELOPMENT**

---

At St Mary Magdalen's R.C Primary School promoting SMSC is important to the school's ethos and values. Computing lessons prepare children for the challenges of living and learning in a technology enriched world. Through their lessons, children learn how to build positive relationships with others in their local and wider environment as responsible digital citizens. Pupils demonstrate their moral development by their ability to recognise right and wrong when using technology. They are also taught that their online actions may have consequences.

## **CURRICULUM IMPACT**

After the implementation of this robust computing curriculum, children will be digitally literate and able to join the rest of the world on its digital platform. They will be equipped, not only with the skills and knowledge to use technology effectively and for their own benefit, but more importantly – safely. The biggest impact we want on our children is that they understand the consequences of using the internet and that they are also aware of how to keep themselves safe online.

As children become more confident in their abilities in Computing, they will become more independent and key life skills such as problem-solving, logical thinking and self-evaluation become second nature.

---

## **ASSESSMENT & RECORDING**

---

Assessment of children's learning will happen after each unit of work with the final task. This will give them an opportunity to demonstrate the skills they have acquired during a unit of work. Teachers make an informal judgement against the Nation Curriculum objectives and these are reported to parents as part of the child's annual school report. Progress is monitored and this information is then passed on to the next teacher.

---

## **MONITORING & REVIEW**

---

The Computing lead continues to monitor the curriculum to ensure it is appropriate and suitable for the needs of pupils. Hardware is monitored by both the Computing lead and the shard technician to check the equipment is fit for purpose.

---

## **EXTERNAL VERIFICATION**

---

Close links with Durham County advisers are maintained. They offer specialist advice or support as needed.

