



Aylburton and English Bicknor C of E Primary Schools Computing Curriculum

Christian Vision and Values

‘Through God’s love we learn and flourish together’ Corinthians 16:14

Thankfulness Perseverance Compassion Trust Courage Respect

Curriculum Drivers in Computing

World Aware: We intend for pupils not only to be digitally competent and have a range of transferable skills at a suitable level for the future workplace, but also to be responsible online citizens. They will also learn about how, through technology, people around the world are connected to one another.

Belonging: Being computer literate enables pupils to be part of a wider community across the globe and to a partnership when creating something in school. It also allows them to understand how they are, and can be, connected to people around the world.

Well-being: Through ‘tinkering’ with programmes and debugging algorithms children must develop both their critical thinking and perseverance to enjoy the sense of achievement that they will feel when their programme is running correctly. They also learn about how to protect their well-being by being responsible online users and what to do if something they see online worries them.

Spirituality: Computing gives children the opportunities to experience ‘wow moments’ and a sense of awe and wonder that comes from things such as learning about how the internet works or when a programme that they have worked hard to create and debug works.

Possibilities: Our curriculum will develop pupil’s appreciation of technology, its capabilities and the opportunities technology offers to, create, manage, organise, and collaborate. Children learn about career opportunities through the STEM subjects and the different paths that studying computing can lead them down.

What we teach and why: Intent

The computing progression map and long-term subject curriculum plan details the skill and knowledge content taught across the school. The Computing Curriculum is sequenced through a gradual build-up of specific skill sets relating to the strand of Computing being taught each term. There are 4 strands: computing systems and networks, data handling, creating media and programming. These strands come from the Teach Computing scheme of work. The units from this scheme are organised into a rolling programme to work across the mixed year group classes at our schools so that children are always building on previous learning and to ensure that all national curriculum objectives are covered.

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The curriculum has been designed the way it has because it is fundamentally important that children are taught progressive and sequential skills which are built on whilst forming a solid understanding of the role that technology plays in today's society. Children are taught how technology can be used to benefit and enrich lives and solve problems but also how to use it safely and responsibly. This learning works along the PSHE curriculum in promoting awareness of safe and unsafe online behaviours.

Children are excited to share their developing understanding of computing and the role it plays in their lives today.

How it's taught: Implementation

Strategies are used routinely by teachers to enable the children to embed their learning into their long-term memory. These strategies are based on a range of techniques connected to retrieval practice including the use in lessons of knowledge organisers, low stakes quizzing, interleaving and annotated visual representations of information.

We use active learning techniques which teachers employ in the classroom to complement learning and give all children the opportunity to become actively engaged and to articulate their understanding.

We aim to keep the learning pace of all children at the highest level and ensure there is no 'glass ceiling' for any learner. In the computing curriculum, words have been chosen that are subject specific and appropriate to the age of the children being taught e.g. technology, input, algorithm etc.

Each lesson starts with a retrieval exercise relating to prior learning or a warm up activity relating to a specific skill that is being taught in the lesson. The lesson is broken down into different activities that help the children to build on previous learning from previous lessons and units and also from previous learning within the lesson. These include both computer/device-based tasks and 'unplugged' tasks where children learn through practical modelling.

Children's work is documented either in the child's individual computing folder, saved onto the school network or shared via Seesaw.

We have high expectations of all children and we see this through the work in lessons, evaluations and through talking to children about their learning.

What we see as a result: Impact

Our computing curriculum is designed in such a way that pupils become computer literate, thoughtful technology users. They will not only know facts about computers and information technology but will also be competent and confident in using technology.

Through the curriculum design impact can be monitored through both formative and summative assessment. The lesson resources guide both pupils and staff in assessing the children progress against the learning objectives.

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Following the implementation of the Teach Computing curriculum pupils should be equipped with a range of skills that will enable them to succeed in the next stage of their education and into the wider world.

The subject coordinator regularly monitors pupil attitudes, work and teaching in computing and offers feedback in order to improve teaching and learning in the computing. Pupils attest to enjoying this subject and the skills-based nature of the lessons. Pupils regularly engage well with key questions and can reflect on their learning at the end of each lesson with the learning outcome in mind. They learn to be confident in their responses and not afraid to pose more questions as a result of their learning.

By the end of year 6 children at Aylburton and English Bicknor C of E Primary Schools should demonstrate the following essential characteristics:

- *The ability to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation*
- *The ability to analyse problems in computational terms and be able to write programs in order to solve problems*
- *The ability to apply information technology to solve problems*
- *To be responsible, competent, confident and creative users of information and communication technology*

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EYFS	Computing Systems & Networks	Data Handling	Creating Media	Programming
	Know examples of technology that they use and see around the home and classroom environment	Be able to organise information through sorting and ordering	Know that media can be made using a computer	Follow simple instructions Give simple instructions to solve a problem Recognise when there is a problem in a set of instructions and solve them

KS1	Computing Systems & Networks	Data Handling	Creating Media	Programming
	Identify information technology in the home and school Explain how technology can benefit us Use technology safely and responsibly Know where they can go for help when they have concerns about content	Use different methods (e.g. tally charts) to collect data Compare objects that have been grouped by attribute Suggest ways of organising and grouping data Explain and show how a computer can be used to present data Explain why information should, or should not, be shared	Recognise that information on a computer can be stored Explain that information on a computer can be saved Explain that stored information can be retrieved, edited and re-saved Recognise that people around them can see their work by looking at their screen Recognise that work can be shared via printing Recognise that work can be shared between devices	Understand that words can be enacted and to choose a command for a given purpose Understand that a programme is a set of commands that a computer can run Describe a series of instructions as a sequence Use logical reasoning to predict the outcome of a command or sequence Test and debug a programme that they have written

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KS2	Computing Systems & Networks	Data Handling	Creating Media	Programming
Year 3 & 4	Identify input and output devices Recognise the components of a network and how it can be used to share information Describe how networks connect to other networks	Explain how a digital device can be used to collect data automatically Use a set of logged data to find information	Recognise how text and images can be used together to convey information Consider how different layouts, font styles and effects can suit different purposes and choose them appropriately Consider the benefits of desktop publishing Use an application to change the whole, part or add to a digital image e.g. by rotating, applying filters or adding text Choose the most appropriate tool of application for a specific purpose	Identify everyday tasks that include repetition Use both count-controlled and indefinite loops to repeat instructions Justify when a loop should, or should not be used
Year 5 & 6	Explain the global connection of networks is the internet and that the World Wide Web is part of that Describe and explain the benefits, content and limitations of the World Wide Web Explain how information is transferred across the internet Recognise that connections between computers allow for sharing of files and collaborative working Explain how a search engine works and discuss their benefits and limitations Evaluate different methods of online communication and choose one appropriately	Use a computer programme to sort data by an attribute Explain that a computer programme can be used to organise and present data Explain that there are different software tools to work with data Sort and refine data in order to answer a specific question Select appropriate ways to present and share data	Recognise that a vector drawing comprises different objects that can be selected, moved and grouped Create media for a given purpose and reflect on choices made Explain that 3D models can be made on a computer and why they might be beneficial Construct a 3D model which reflects a real world object	Explain that a condition, in programming, can only be true or false Compare a count-controlled loop with a condition-controlled loop Explain the importance of instruction order in 'if... then... else...' statements Define a variable as something that can change Use a variable in a conditional statement to control the flow of a program



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