Computing Progression Map 2021-2022

Intent

Holy Trinity CE Academy's Computing scheme aims to instil a sense of enjoyment around using technology and to develop pupil's appreciation of its capabilities and the opportunities technology offers to, create, manage, organise, and collaborate.

Tinkering with software and programs forms a part of the ethos of our scheme as we want to develop pupils' confidence when encountering new technology, which is a vital skill in the ever evolving and changing landscape of technology. Through our curriculum, 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.

The scheme of work we follow has been designed working alongside JEM n.e. and enables pupils to meet the end of Key Stage Attainment targets outlined in the National curriculum and the aims align with those in the National curriculum. This guidance was created to help equip children for life in the digital world, including developing their understanding of appropriate online behaviour, copyright issues, being discerning consumers of online information and healthy use of technology.

Implementation

The implementation of the JEM computing scheme ensures a broad and balanced coverage of the National curriculum requirements, and our Cornerstones curriculum further provides pupils with the opportunity to learn and apply transferable skills. Where meaningful, units have been created to link to other subjects such as science, art, and music to enable the development of further transferable skills and genuine cross- curricular learning.

Lessons incorporate a range of teaching strategies from independent tasks, paired and group work as well as unplugged and digital activities. This variety means that lessons are engaging and appeal to those with a variety of learning styles.

Differentiated guidance is available for every lesson to ensure that lessons can be accessed by all pupils and opportunities to stretch pupils' learning are available when required. Knowledge organisers for each unit support pupils in building a foundation of factual knowledge by encouraging recall of key facts and vocabulary.

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Impact

The expected impact of following the computing scheme of work is that children will:

- Be critical thinkers and able to understand how to make informed and appropriate digital choices in the future.
- Understand the importance that computing will have going forward in both their educational and working life and in their social and personal futures.
- Understand how to balance time spent on technology and time spent away from it in a healthy and appropriate manner.
- Understand that technology helps to showcase their ideas and creativity. They will know that different types of software and hardware can help them achieve a broad variety of artistic and practical aims.
- Show a clear progression of technical skills across all areas of the National curriculum - computer science, information technology and digital literacy.
- Be able to use technology both individually and as part of a collaborative team.
- Be aware of online safety issues and protocols and be able to deal with any problems in a responsible and appropriate manner
- Have an awareness of developments in technology and have an idea of how current technologies work and relate to one another.
- Meet the end of key stage expectations outlined in the National curriculum for Computing.

End of EYFS Expectations

- Remember rules without needing an adult to remind them
- Match their developing physical skills to tasks and activities in the setting.
- Explore how things work.
- Show resilience and perseverance in the face of a challenge.
- Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'
- Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
- Explore, use and refine a variety of artistic effects to express their ideas and feelings.
- Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly.
- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

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Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
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	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

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Holy Trinity CE Academy School
Progression document EYFS

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- Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'
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Holy Trinity CE Academy School
Progression document KS1 and KS2

Aspect	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Understanding and Creating Algorithms Progression	Know that instructions, and sequences of instructions, control devices and begin to understand that order and accuracy are important.	Plan, construct and record a simple sequence of instructions to control a device. Understand why a routine did not perform as expected. Review and modify their routine to enable	Understand that sequences can be repeated to work more efficiently. Be aware that things in the real world are controlled by input devices. Be confident in explaining to	Understand what an input and output is in computing terms. Understand simple control principles and processes. Begin to apply these logically to control devices.	Use variables and understand their impact on input devices. Using their knowledge and understanding, predict the outputs of specific inputs.	Create programs to meet a given brief. Create programs which have a number of separate sub routines, and which respond and interact depending upon

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		a successful outcome. Understand the importance of accuracy and precision.	others the reason why a sequence worked or had to be modified.	Know that when creating sequences to control devices, accuracy is essential to a successful operation. Understand and use simple sensors within their programming. Understand that inputs and outputs impact on operational functionality.	Create, design, test and de-bug a single set of instructions using sensors incorporating single variables. Be confident in explaining their program and what is needed to refine and improve.	inputs and outputs. Use a number of variables to control more complex sequences to solve a given brief.
Digital Content and the Internet Progression	Covers: Classification by different criteria. Sorting by single and multiple criteria. Representation of data graphically Electronic data	Covers: Remote and local storage of data Textual graphical and numeric data Saving and retrieving files with text, sound and graphical formats Simple use of the internet including simple searches	Covers: Searching local databases and online sites and understanding the need for accuracy. Writing and publishing class blogs. Within a “walled garden” or restricted list, using the internet to find information to support other class work.	Covers: Importance of accuracy and learning about keywords Checking and evaluating results Developing searches on two criteria. Knowledge of web page design and external links	Covers: Creating a database structure, collecting, entering, testing and correcting data Construction of search criteria through planning research needs Searching independently and responsibly	Covers: Review and critical analysis of information from the internet and other sources. Database and spreadsheet creation to support other work Critical review of “fit for purpose” in relation to databases including the internet Keywords and their relevance to effective internet

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					Developing critical evaluation skills Using spreadsheets to model patterns and to use formula to carry out a range of mathematical functions.	searches and the ranking of internet sites.
Understanding the Application of IT	Covers: Knowing about technology in the home, and school. .	Covers: Knowing that objects in the wider world are controlled by technology.	Covers: Communication with technology Storage and retrieval of electronic information Real time and virtual worlds	Covers: Communication and the internet Developing critical evaluation skills	Covers: Greater independent and autonomous usage. Increased selectiveness about identifying and using resources.	Covers: Technical infrastructure and architecture. Application of all skills learnt to deliver a specified product or outcome.
Online Safety and Appropriate Use	**Key Stage 1**		**Lower Key Stage 2**		**Upper Key Stage 2**	
	Covers: General principles of safety including the real and virtual worlds Privacy of personal information Permanency of information on internet Know how to deal with concerns		Covers: The use of passwords, security and electronic communication protocols. Appropriate actions to be taken regarding inappropriate content or usage. Awareness of the school's Acceptable Usage Policy and its sanctions Awareness of ownership of material and content		Covers: Password protocols Reporting Monitoring Acceptable Use Copyright permissions and protocols Responsible behaviours and bullying Knowing how to deal with concerns and inappropriate contacts.	

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		Know how to deal with concerns and inappropriate contact Risks and benefits of content and contacts through online communication.	