Woodlands School

Computing Curriculum

#togetherwegrow

Marches Academy Trust

Computing

Our vision

Computing at Woodlands will bridge the gaps supporting and inspiring young learners to be well-rounded and confident technology users. Which will not only support them during their education but also prepare them for life after education in any future career they wish to pursue.

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Middle School Computing Road Map

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National Curriculum Coverage:

Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems

National Curriculum Coverage:

Understand how instructions are stored and executed within a computer system;
understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits

Intent:

During this unit, learners develop their understanding of information technology and digital literacy skills. They will use the skills learnt across the unit to create a blog post about a real-world cause that they would like to gain support for. Learners will develop software formatting skills and explore concerns surrounding the use of other people's work, including licensing and legal issues.

Q1

Collaborating Online Respectfully

Intent:

This unit will give students sufficient time to familiarise themselves with the school network. Students will also discuss appropriate use of the school network and important online safety issues. Students will also learn how to use presentation software effectively. In terms of online safety, this unit focuses on respecting others online, spotting strangers, and the effects of cyberbullying.

Q2

Using Media

Q3

Modelling Data

Intent:

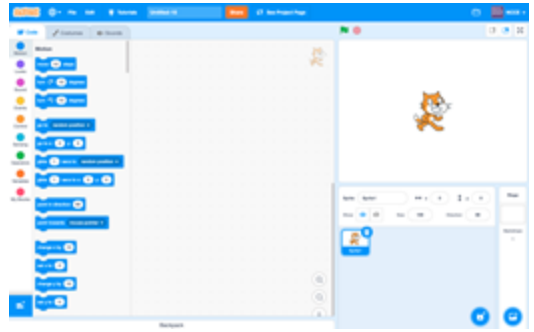
The spreadsheet unit takes learners from having very little knowledge of spreadsheets to being able to confidently model data with a spreadsheet. The unit uses engaging activities to progress learners from using basic formulas to writing their own COUNTIF statements. This unit will give learners a good set of skills that they can use in computing lessons and in other subject areas.

Q4

Introduction to Programming

Intent:

This unit explores the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program design through this unit.



Stretch & Challenge

Exploratory tasks foster a deeper understanding of a concept, encouraging pupils to apply their learning in different contexts and make connections with other learning experiences.

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National Curriculum Coverage:

Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users

Intent: This unit explores the links between events and actions, while consolidating prior learning relating to sequencing. Learners begin by moving a sprite in four directions (up, down, left, and right). They then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of **Pen** blocks. Learners are given the opportunity to draw lines with sprites and change the size and colour of lines.

National Curriculum Coverage:

Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability

Q5

Programming Continuation

Intent:

This unit explores the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner.

Q6

Events and Actions

Q7

Networks

Intent:

This unit focusses on networks, the internet, and associated technology (network, hub, server, router, ISP, protocol, mainframe, personal computer, stand-alone, HTTP, wired, wireless, 3G, 4G, 5G, Wi Fi, bandwidth, bit, megabit, gigabit, broadband, buffering, packet, IP address, packet header, packet payload, Transmission Control Protocol, Internet Protocol, World Wide Web, WWW, internet services, email, Voice over Internet Protocol (VoIP), Internet of Things (IoT), spam, privacy, security, web browser, web server, web page, search engine, HTTP, HTTPS, URL, domain name, domain name system)

Q8

Vector Drawing

Intent:

In this unit, learners start to create vector drawings. They learn how to use different drawing tools to help them create images. Learners recognise that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object. Learners layer their objects and begin grouping and duplicating them to support the creation of more complex pieces of work.

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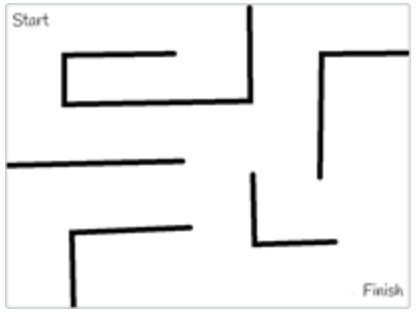

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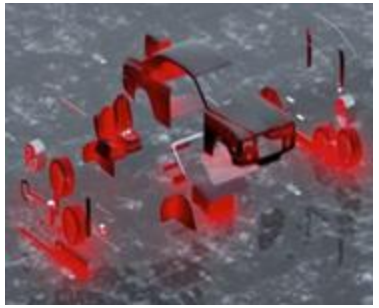
National Curriculum Coverage:

Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns

Intent:

Learners will be introduced to creating websites for a chosen purpose. Learners identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process, learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths.

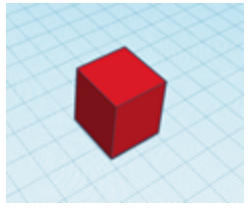


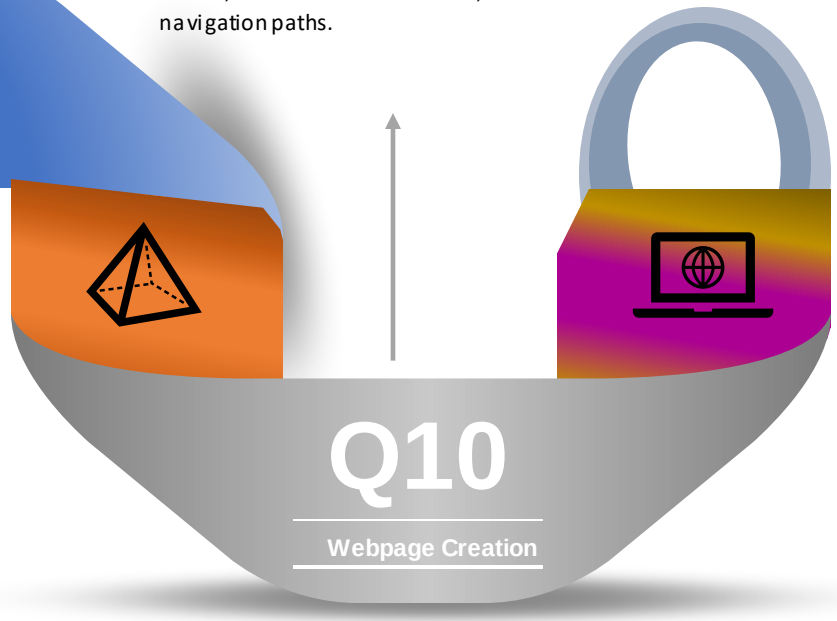
Q9

3D Modelling

Intent:

Learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, moving, resizing, and duplicating objects. They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. Finally, learners will examine the benefits of grouping and ungrouping 3D objects, then go on to plan, develop, and evaluate their own 3D model of a building.





Q10

Webpage Creation

404

error

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