Curriculum plan: Computer Science

"Ultimately you want to have the entire world's knowledge connected directly to your mind" Sergey Brin – Google

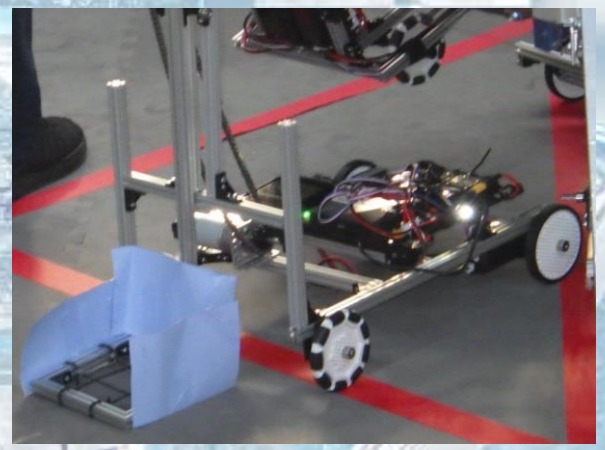
Our intent

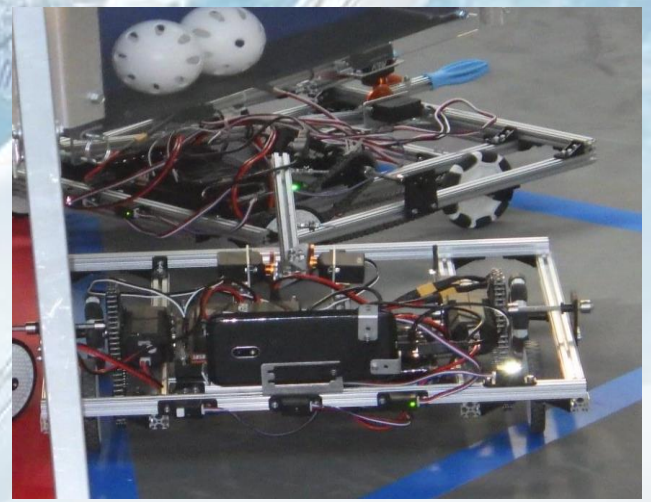
A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. The use and understanding of computers gives learners the opportunity to develop sector-specific knowledge and skills in a practical learning environment.

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.

Enrichment in computer science

The Woodhouse Academy computer science experience is complimented by cross-curricular links with maths, science and design and technology. Our enrichment programme is designed to allow pupils the chance to experience computing in different contexts. We have run a robotics club with the D&T department, competing in the First Tech Challenge robot competitions, qualifying for the Nationals in 2020 and being medallists in our first season in 2019. We have also visited Barclays at Radbroke Hall and the BBC at Birmingham to see how computers are used in the real world.

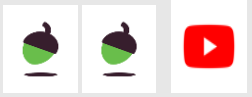
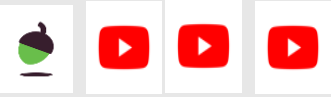




y5 Curriculum plan: computer science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5	Photography Key Elements: • Pixels • Digital Images • Image software • Image manipulation	Architects Key Elements: • Google Sketchup • 3-D Model • Pre-made elements • Virtual Art gallery • Images	DJs Key Elements: • Audacity • Voice recording • Combining tracks • Voice effects	Problem Solvers Key Elements: • Flowcharts • Flowol • Mimic • Sequences • Decisions	Programmers Key Elements: • Scratch • Blocks • Sprite • Program • Maze	

y6 Curriculum plan: computer science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 6	Advertisers	Simulators	Advanced problem solvers	Web developers	Game developers	
	Key Elements: • New Technology • Video Export • Multimedia • Design • Create	Key Elements: • Simulation • Model • Excel • Constants • Variables	Key Elements: • Flowcharts • Flowol • Mimic • Sequences • Decisions	Key Elements: • Internet • Webpage • HTML • Data Packets	Key Elements: • Scratch • Blocks • Variables • Program • Pacman	
						

y7 Curriculum plan: computer science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	Hardware	Data structures	Algorithms	HCI	Programming	
	Key Elements: • Input • Output • Storage • Processing • Internal • External	Key Elements: • Data type • Validation • Binary • Bitmap Image • Run-length coding	Key Elements: • Algorithm • Sequence • Variable • Loop • Decomposition	Key Elements: • Interface • Interaction • Human • Computer • Macro	Key Elements: • Scratch • Blocks • Variables • Program • Conditional • Randomised	
	BBC Bitesize	BBC Bitesize	BBC Bitesize			

y8 Curriculum plan: computer science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 8	Networks Key Elements: • Internet • Connectivity • Topology • Client-Server • Encryption	Spreadsheet modelling Key Elements: • Validation • Conditional Formatting • Formulae • Functions	Algorithms II Key Elements: • Sorting • Searching • Python • Bubble • Bucket	Graphics Key Elements: • Vector images • Bitmap images • Contrast • Saturation • Layer Masks	Programming Key Elements: • Scratch • Blocks • Variables • Program • Conditional • Randomised	