

Curriculum plan: Computer Science

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

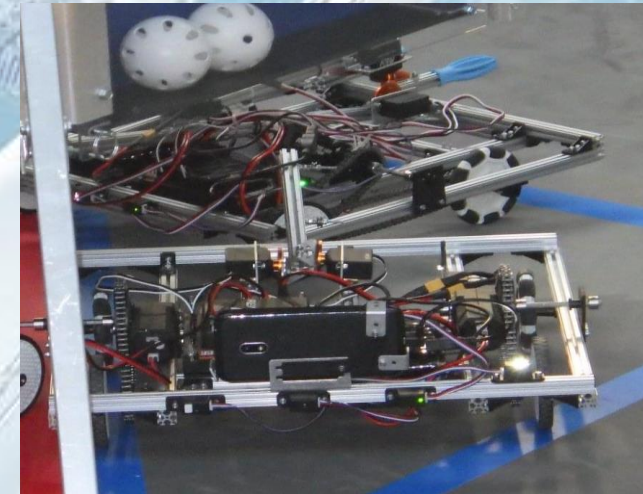
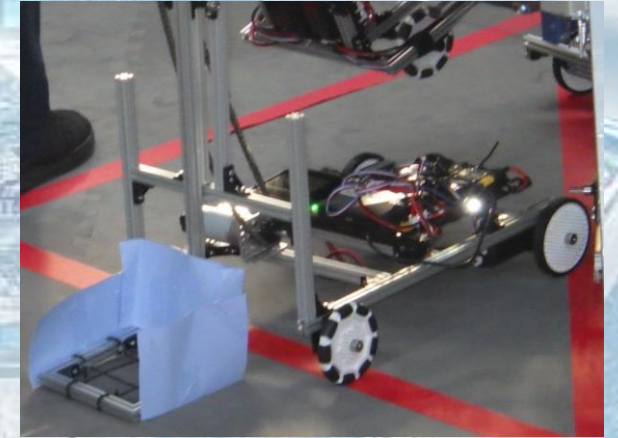
Our intent

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	Architects	DJs	Problem Solvers	Programmers	
	<p>Key Elements:</p> <ul style="list-style-type: none"> • Pixels • Digital Images • Image software • Image manipulation 	<p>Key Elements:</p> <ul style="list-style-type: none"> • Google Sketchup • 3-D Model • Pre-made elements • Virtual Art gallery • Images 	<p>Key Elements:</p> <ul style="list-style-type: none"> • Audacity • Voice recording • Combining tracks • Voice effects 	<p>Key Elements:</p> <ul style="list-style-type: none"> • Flowcharts • Flowol • Mimic • Sequences • Decisions 	<p>Key Elements:</p> <ul style="list-style-type: none"> • Scratch • Blocks • Sprite • Program • Maze 	
		 				







For a more detailed breakdown of our CS curriculum, please see our curriculum overviews.

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: <ul style="list-style-type: none"> • New Technology • Video Export • Multimedia • Design • Create 	Key Elements: <ul style="list-style-type: none"> • Simulation • Model • Excel • Constants • Variables 	Key Elements: <ul style="list-style-type: none"> • Flowcharts • Flowol • Mimic • Sequences • Decisions 	Key Elements: <ul style="list-style-type: none"> • Internet • Webpage • HTML • Data Packets 	Key Elements: <ul style="list-style-type: none"> • Scratch • Blocks • Variables • Program • Pacman 	
				  	   	











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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: <ul style="list-style-type: none"> • Input • Output • Storage • Processing • Internal • External 	Key Elements: <ul style="list-style-type: none"> • Data type • Validation • Binary • Bitmap Image • Run-length coding 	Key Elements: <ul style="list-style-type: none"> • Algorithm • Sequence • Variable • Loop • Decomposition 	Key Elements: <ul style="list-style-type: none"> • Interface • Interaction • Human • Computer • Macro 	Key Elements: <ul style="list-style-type: none"> • Scratch • Blocks • Variables • Program • Conditional • Randomised 	
					 	

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y8 Curriculum plan: computer science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 8	<p>Networks</p> <p>Key Elements:</p> <ul style="list-style-type: none"> • Internet • Connectivity • Topology • Client-Server • Encryption 	<p>Spreadsheet modelling</p> <p>Key Elements:</p> <ul style="list-style-type: none"> • Validation • Conditional Formatting • Formulae • Functions 	<p>Algorithms II</p> <p>Key Elements:</p> <ul style="list-style-type: none"> • Sorting • Searching • Python • Bubble • Bucket 	<p>Graphics</p> <p>Key Elements:</p> <ul style="list-style-type: none"> • Vector images • Bitmap images • Contrast • Saturation • Layer Masks 	<p>Programming (interim 20-21)</p> <p>Key Elements:</p> <ul style="list-style-type: none"> • Scratch • Blocks • Variables • Program • Conditional • Randomised 	
	 	 	  		 	

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