Curriculum plan: Computer Science

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

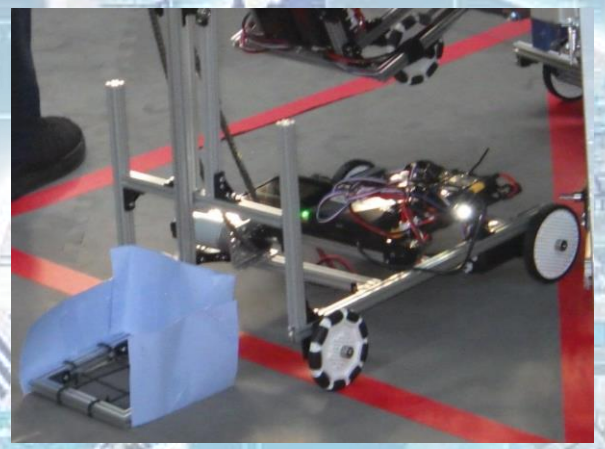
Our intent

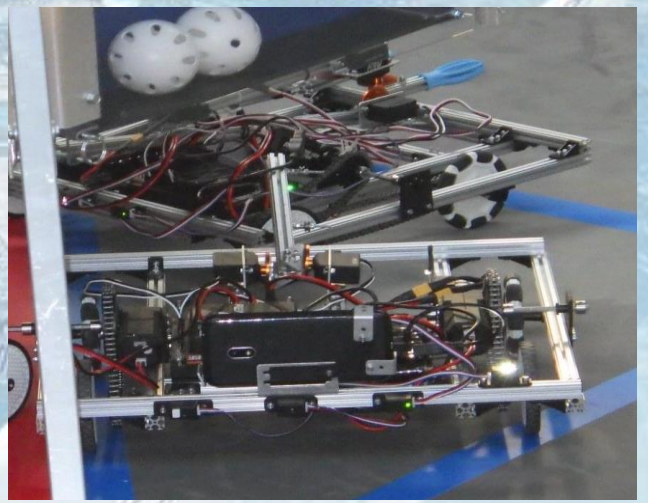
A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. The use and understanding of computers gives learners the opportunity to develop sector-specific knowledge and skills in a practical learning environment.

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 competition.





There is also a weekly lunchtime coding club. We also enter students into the Bebras competition in November. A worldwide competition that tests student's computational thinking skills.

The UK Bebras Challenge

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	
	Key Elements: • Pixels • Digital Images • Image software • Image manipulation	Key Elements: • Google Sketchup • 3-D Model • Pre-made elements • Virtual Art gallery • Images	Key Elements: • Audacity • Voice recording • Combining tracks • Voice effects	Key Elements: • Flowcharts • Flowol • Mimic • Sequences • Decisions	Key Elements: • 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 Key Elements: • New Technology • Video Export • Multimedia • Design • Create	Simulators Key Elements: • Simulation • Model • Excel • Constants • Variables	Advanced problem solvers Key Elements: • Flowcharts • Flowol • Mimic • Sequences • Decisions	Micro:bit Key elements: Selection Variables Conditions • Sequences • Loops		Web developers Key Elements: • Internet • Webpage • HTML • Data Packets

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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: • 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	

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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	Mobile App development Key Elements: • Block-based programming • User input • Variables • Decomposition • Events • Sequence • Selection	

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