Microsoft K-12 Computer Science Map

Microsoft

		Working with Code						Working with Data						Working with Computers					
		Coding			Robotics and Automation			Data and AI			Platforms and Cloud			Human-Computer Interaction			Cyber-Security		
		Solving Complexity	Writing Programs	Developing the Web	Sensing Your World	Controlling Your World	Making Environments Smart	Solving Intelligence	Learning from Data	Making AI Fair	Making Machines Compute	Connecting Computers	Delivering Web Services	Making Computing Interactive	Designing User Experiences	Making Computing Accessible	The Challenge of Digital Safety	Securing Computing	Infotagion
Big Question 10 hours each	age 6 level 1	What is a computer?			How can we measure with sensors?			What is Intelligence?											
	age 7 level 2										What does ' digital' mean?			How can computers and people interact?			How can you stay safe online		
	age 8 level 3		How can we make computers work for us?			How can we build a robot?			How can machines learn from data?										
	age 9 level 4											How can 4bn smartphones connect?			What is a usability test?			How can you exchange secret messages?	
	age 10 level 5			What Makes The Web Work?			How can we connect sensors across schools?			What rules should we give AI?									
	age 11 level 6												What is in the Cloud?			How can software be more accessible?			How should you protect your online 'self'?
	age 12 level 7	How can I manage complexity?			How can actions be triggered with sensors?			Can machines be creative?											
	age 13 level 8										How has computing evolved?			How does MR work?			How does authentication work?		
	age 14 level 9		How can code help make predictions?			How can environments be controlled?			How can we make AI explainable?										
		Coding in Minecraft Certification						Microsoft Office Specialist (MOS) Certification											
Labs 10 hours each	age 15 level 10		How can we use software against a pandemic? (3)			How can admin tasks be automated? (8)			How can bots alert farmers to weather conditions? (2)			How can we build a LAN in a disaster zone? (3)			How should you design interfaces for safety-critical systems? (3)			How can data be secured? (9)	
Sprints 10 hours each	age 16 level 11		Build software to monitor air quality					(13)	Same			Same							
			Same					(5)	Make online spaces safer for girls and women to be part of									Same	
			Diagnose a medical problem with Machine Learning					(3)	Same									Same	
			Same			Same		(15)	Build a web service that helps / protects an endangered species										
				Build a mobile app for users to identify endangered species				(15)	Same						Same				
			Same			Same		(2)	Build an Agriculture 4.0 solution based on IoT.										
Labs 6.4 hours each	age 17 level 12	How can we build circular economies? (12)	How can an app help provide clean water and sanitation? (6)		How can vehicles control themselves? (9)	Can cities be smart? (11)		What is the Master Algorithm? (8)	Where has AI been fair and unfair? (16)		How small and fast can computers sustainably go? (13)	How can an Open API be used to reduce poverty? (1)		Can haptics help surgeons and dentists? (3)	How can computing help deal with an impairment? (10)		Can smart contracts stop environmental damage? (12)	How can we prevent online abuse, censorship and extremism? (16)	
			How can code reduce hospital waiting lists? (3)			Can robots unlock the secrets of the oceans? (14)			How can ML be used to classify Earth images? (13)			How can the Internet of Clean Energy work? (7)			Can we stop mobile phones ruling our lives? (9)			How might quantum change cyber security? (9)	
Pitches 40 hours each	age 18 level 13	Design and build a digital product that addresses an SDG based on Software Development and Robotics and Automation.						Design and build a digital product that addresses an SDG based on Data and AI and Platforms and Cloud						Design and build a digital product that addresses an SDG based on HCI and Cyber-Security					

Foundation

Product

Project

Business

Azure Certification