

Curriculum Information Year 8

Autumn Term

Unit title	Key Questions	Knowledge	Assessing Understanding
<p>Python Programming (Farmbot) www.turinglab.co.uk</p>	<p>How can algorithms be translated into a functional computer program using the fundamental structures of Python?</p>	<p>Students gain knowledge and practical skills which focus on the core concepts of programming in Python</p>	<p>How understanding is assessed Student progress is tracked during lessons and via the Turinglab platform, which includes integrated testing throughout the unit of work.</p> <p>Skills Write programs in python Locate and correct common syntax errors</p> <p>Assessment Point Information Progress completion and tests are built into the www.turinglab.co.uk platform</p> <p>Students also complete a vocabulary test at the end of the unit</p>
<p>Networks</p>	<p>What is a Computer network, how does it work and what are the essential components?</p>	<p>Students gain an understanding of what makes up a computer network and how data is transmitted.</p>	<p>How understanding is assessed Students complete a series of online tasks for this unit of work</p> <p>Peer, self and teacher assessment of tasks completed in</p>

		<p>They gain an appreciation for this history of different communication methods and the growth of networked devices</p> <p>They learn how to design different network connections based on different scenarios.</p>	<p>class and for homework across the unit</p> <p>Skills Understanding the IoT (Internet of things) Students will be able to describe how services are provided over the internet Design of networks for specific requirements (scenario based)</p> <p>Assessment Point Information</p> <p>End of topic test which includes assessment of technical language as well as core concepts covered in the unit.</p>
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Spring Term

Unit title	Key Questions	Knowledge	Assessing Understanding
App development	<p>How can you turn a design idea into reality?</p> <p>What are the key issues with collecting personal data and how do you keep it safe?</p>	<p>Students will learn how to use APP Lab to create part of a functioning APP.</p> <p>They will understand the importance of user centered design and the importance of online safety concepts around using personal data</p>	<p>How understanding is assessed Progress monitored in lessons</p> <p>Students will undertake peer feedback activities to share ideas and provide constructive feedback to help each other improve their app designs</p> <p>Students will write a brief evaluation of their APP.</p> <p>Skills</p>

			<p>Communication skills - paired discussions around wireframes and APP development. Collaboration with peers to share ideas and problem solve Familiarisation with the core features of APP lab</p> <p>Assessment Point Information</p>
Flowol	<p>What is Flowol and how does this help us understand what a control system is?</p>	<p>To understand and be able to create flowcharts to control a scenario</p> <p>Understand subroutines for repetitive tasks and conditional statements and loops to help solve real life problems</p>	<p>How understanding is assessed</p> <p>Progress in lessons is monitored</p> <p>Students complete tasks that assess the techniques they have been taught</p> <p>Peer review of flowchart solutions</p> <p>Peer, self and teacher assessment of tasks completed in class and for homework across the unit</p> <p>Skills</p> <p>understand and implement flowchart symbols.</p> <p>Hands-on activities involving the Zebra crossing, robot mimic, and Pelican crossing (with and without subroutines)</p> <p>Create flowcharts using conditions and loops.</p> <p>Design a system that responds to sensor inputs</p>

			<p>Assessment Point Information</p> <p>Questioning of students on the logic behind their solution and checking the functionality of flowcharts created</p>
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Summer Term

Unit title	Key Questions	Knowledge	Assessing Understanding
Experience AI	<p>What is AI?</p> <p>What is Machine Learnings relationship to AI?</p> <p>What are some of the range of career opportunities that exist in the AI field?</p>	<p>Know the difference between rule-based and data-driven approaches to developing AI</p> <p>students will learn about a specific example of machine learning — classification. This is where algorithms are used to classify (group) data into categories (called ‘classes’)</p>	<p>How understanding is assessed</p> <p>summative assessment with multiple choice questions covering the concepts from lessons.</p> <p>Work produced in lessons is observed and teacher assessed</p> <p>Skills</p> <p>Explore the current uses of Artificial Intelligence (AI) in the world.</p> <p>Critically evaluate the application of AI principles in systems, specifically assessing the role of machine learning in model development.</p> <p>Use Machine Learning for Kids tool to build and use a</p>

			<p>decision tree with a larger dataset.</p> <p>Participate in frequent opportunities for paired and group discussions during lessons.</p> <p>Assessment Point Information Creation of machine learning model using classifications Work on decision trees</p>
My digital world	How can we become discerning users of the internet and stay safe online?	<p>Learn how to evaluate websites to determine if they are trustworthy and reliable.</p> <p>Understanding how search engines function and using "search smarter" tools to make search results more relevant</p> <p>Defining Copyright law and learning how to use others' work without infringing on it</p> <p>Understanding the dangers present online and learning methods to stay clear of them.</p>	<p>How understanding is assessed Students work is assessed through a variety of practical work, written activities, and formative checks</p> <p>Skills Correctly identify trustworthy and untrustworthy websites using set criteria Explain how a search engine works DTP skills to produce an information leaflet for GCSE and A level students outlining Copyright law and how to comply with it when doing NEAs.</p> <p>Assessment Point Information DTP skills to produce an information leaflet for GCSE and A level students outlining Copyright law and how to comply with it when doing NEAs.</p>