Cambridge Curriculum

Primary, Lower Secondary and IGCSE curriculum

mapping in relation to the AI CREATOR™ curriculum

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About us

Code School Finland is committed to a constructivist, inquiry-based approach to teaching and learning that promotes the development of critical thinking.

All of our learning modules promote:

- **Student-centred peer learning and constructivist approach**:

  Promote learners' autonomy, self-regulation, decision making, collaboration, life-long learning and democracy.

- **Problem- and project-based learning**:

  Introducing open-ended problems and projects and guiding learners to becoming creative problem solvers in the context of digital tools and technology.

- **21st century skills and transversal learning goals**:

  Fostering creativity, critical thinking, ICT literacy, entrepreneurship and work-life skills. Empowering learners to devise problem-solving strategies and learning to learn.

Cambridge **Primary** Computing & Digital Literacy

There are two areas in Cambridge Primary curriculum related to digital skills: **Computing (0059)** and **Digital Literacy (0072).**

Computing

Cambridge Primary curriculum	AI CREATOR	Align-ment	Corresponding courses/books*
Computational Thinking supports learners to create and present solutions to problems using algorithms, logic and precision.	☐ *Can create algorithms and explore computation in unplugged context* ☐ *Can use sequencing, iteration and conditional statements in context of programming* ☐ *Can design and create animations, apps and games in visual programming environments*	*100%*	Future thinker Junior Coder Code & Create Develop & Test Little AI learner
Programming helps learners to understand the common constructs of programming languages and to appreciate the contribution that Computer Scientists make to our lives.	☐ *Can create algorithms and explore unplugged computation* ☐ *Can design and create animations, apps and games in visual programming environments* ☐ *Can use sequencing, iteration and conditional statements in context of programming* ☐ *Can create simple embedded systems such as sensor-activated robots* ☐ *Can plan, implement, and evaluate his or her own technology projects and make improvements*	*100%*	Junior Coder Code & Create Automate Develop & Test Solutions & Syntax
Managing Data encourages learners to reflect on how computers store and analyse data on an ever-increasing scale.	☐ *Understands the role of data in computers, robots and AI systems* ☐ *Understands the role of sensors in embedded systems, i.e. robotics and automation projects*	*100%*	Future thinker Little AI learner Automate AI Introduction Teachable Machine
Networks and Digital Communication shows how computers and other machines communicate with each other across networks and how the networks are created through a combination of hardware and data transmission protocols.	☐ *Understands the role of data in computers, robots and AI systems* ☐ *Understands the role of sensors in embedded systems, i.e. robotics and automation projects* ☐ *Can implement wireless connections in context of embedded systems*	*100%*	Little AI learner Automate ICT Explorer

Computer Systems helps learners to understand that computers follow precise sets of instruction to process inputs that are given by humans, to make decisions and produce outputs.	*Can create algorithms and explore unplugged computation* *Understands the role of data in computers, robots and AI systems* *Can use sequencing, iteration and conditional statements in context of programming*	*100%*	📘 Future thinker 📘 Little AI learner 📘 Code & Create 📘 Automate 📙 AI Introduction

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Primary Computing:
https://www.cambridgeinternational.org/programmes-and-qualifications/cambridge-primary/curriculum/computing/

Digital Literacy

Cambridge Primary curriculum	AI CREATOR	Align-ment	Corresponding courses/books*
Understand their place, and the place of others, in an **interconnected world** and make educated decisions about the **information** that they encounter **online**.	☐ *Evaluates multimedia content both independently and collaboratively* ☐ *Understands the risks of data sharing on the internet and can implement proper safety measures* ☐ *Recognises online threats and can verify facts*	*100%*	📘 Future thinker 📘 Little AI learner 📘 ICT Explorer 📙 Teachable Machine
Develop **knowledge and understanding** that will allow them to respond to, and **evaluate technology of the future.**	☐ *Evaluates media tools and is capable of choosing the correct tools for the task at hand* ☐ *Collect, evaluate and respond to feedback* ☐ *Evaluates multimedia content both independently and collaboratively*	*100%*	📘 Future thinker 📘 Develop & Test 📘 Automate 📘 ICT Explorer 📙 Teachable Machine
Develop **skills to create** increasingly sophisticated **documents and presentations.**	☐ *Can design and create animations, apps and games in visual programming environment* ☐ *Can share and present his or her digital creation and related research to peers*	*100%*	📘 Little AI learner 📘 Code & Create 📘 Develop & Test 📙 ICT Explorer
Learn how to become **positive contributors** to the **digital world.**	☐ *Can design and create animations, apps and games in visual programming environments* ☐ *Can share and present his or her digital creation and related research to peers* ☐ *Can plan, implement, and evaluate his or her technology projects and make iterative improvements*	*100%*	📘 Future thinker 📘 Code & Create 📘 Develop & Test 📙 Teachable Machine
Use digital technology **safely** and **protect** their own physical and emotional wellbeing.	☐ *Evaluates multimedia content both independently and collaboratively* ☐ *Understands the risks of data sharing on the internet and can implement proper safety measures* ☐ *Understands the mechanisms of data collection in online browsers and apps*	*100%*	📘 Future thinker 📘 ICT Explorer 📙 Teachable Machine

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Primary Digital Literacy:
https://www.cambridgeinternational.org/programmes-and-qualifications/cambridge-primary/curriculum/digital-literacy/

Cambridge **Lower Secondary** Computing & Digital Literacy

There are two areas in Cambridge Lower Secondary curriculum related to digital skills: Computing (0860) and Digital Literacy (0082).

Both in Computing and Digital Literacy curriculums, the goals are the same for Primary and Lower Secondary. The difference is in the choice of age appropriate methods and tools. In the AI CREATOR™ curriculum, primary and lower secondary have their own goal set.

Computing

Cambridge Lower Secondary curriculum	AI CREATOR	Align-ment	Corresponding courses/books*
Computational Thinking supports learners to create and present solutions to problems using algorithms, logic and precision.	☐ *Uses coding, robotics, and AI tools to build solutions to real-life problems*	*100%*	📘 Develop & Test 📙 AI Introduction 📙 Teachable Machine
Programming helps learners to understand the common constructs of programming languages and to appreciate the contribution that Computer Scientists make to our lives.	☐ *Uses coding, robotics, and AI tools to build solutions to real-life problems* ☐ *Can create functional programs in visual programming environments* ☐ *Can create functional programs with textual programming languages*	*100%*	📘 Develop & Test 📘 Solutions & Syntax
Managing Data encourages learners to reflect on how computers store and analyse data on an ever-increasing scale.	☐ *Understands the role of data in computers, robots, and AI systems* ☐ *Understands how computers function and purpose of each component in a computer system*	*80%*	📘 ICT Explorer 📙 Teachable Machine
Networks and Digital Communication shows how computers and other machines communicate with each other across networks and how the networks are created through a combination of hardware and data transmission protocols.	☐ *Understand how data is transmitted in wired and wireless systems* ☐ *Understands how server-client systems work and how data is transmitted* ☐ *Understands the risks of data sharing on the internet and can implement proper safety measures*	*100%*	📘 ICT Explorer 📙 Web Design

Computer Systems helps learners to understand that computers follow precise sets of instruction to process inputs that are given by humans, to make decisions and produce outputs.	*Understands how computers function and purpose of each component in a computer system* *Can create functional programs in visual programming environments* *Understands the role of human in creation of AI tools*	*100%*	Develop & Test Teachable Machine ICT Explorer AI Introduction

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Lower Secondary Computing:
https://www.cambridgeinternational.org/programmes-and-qualifications/cambridge-lower-secondary/curriculum/computing/

Digital Literacy

Cambridge Lower Secondary curriculum	AI CREATOR	Align-ment	Corresponding courses/books*
Understand their place, and the place of others, in an **interconnected world** and make educated decisions about the **information** that they encounter **online**.	☐ *Understands the risks of data sharing on the internet and can implement proper safety measures* ☐ *Recognises online threats and can verify facts* ☐ *Understands the mechanisms of data collection in online browsers and apps*	*100%*	📘 ICT Explorer 📙 Teachable Machine
Develop **knowledge and understanding** that will allow them to respond to, and **evaluate technology of the future.**	☐ *Understands and can implement safety measures in context of data and internet* ☐ *Understands the deficiencies of AI systems and how AI systems are created* ☐ *Can evaluate AI systems in terms of accuracy and reliability*	*100%*	📘 Teachable Machine 📘 ICT Explorer
Develop **skills to create** increasingly sophisticated **documents and presentations.**	☐ *Uses coding, robotics, and AI tools to build solutions to real-life problems* ☐ *Can share and present findings and creations to peers in context of digital creation*	*100%*	📘 Develop & Test 📘 ICT Explorer
Learn how to become **positive contributors** to the **digital world.**	☐ *Uses coding, robotics, and AI tools to build solutions to real-life problems* ☐ *Can share and present his or her digital creation and related research to peers* ☐ *Understands the risks of data sharing on the internet and can implement proper safety measures*	*100%*	📘 ICT Explorer 📘 Develop & Test 📙 Teachable Machine
Use digital technology **safely** and **protect** their own physical and emotional wellbeing.	☐ *Understands the risks of data sharing on the internet and can implement proper safety measures* ☐ *Understands the mechanisms of data collection in online browsers and apps* ☐ *Understands the deficiencies of AI systems and how AI systems are created*	*100%*	📘 ICT Explorer 📘 Teachable Machine

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Lower Secondary Digital Literacy:
https://www.cambridgeinternational.org/programmes-and-qualifications/cambridge-lower-secondary/curriculum/digital-literacy/

Cambridge **IGCSE** - Computer Science curriculum (0478)

There are 2 main subject areas in the Computer Science curriculum, each covering their own sub-topics:

Computer systems:

- 1 Data representation
- 2 Data transmission
- 3 Hardware
- 4 Software
- 5 The internet and its uses
- 6 Automated and emerging technologies

Algorithms, programming and logic:

- 7 Algorithm design and problem-solving
- 8 Programming
- 9 Databases
- 10 Boolean logic

Computer systems

Cambridge IGCSE - Computer Science	AI CREATOR	Align-ment	Corresponding courses/books*
1 Data representation • 1.1 Number systems • 1.2 Text, sound and images • 1.3 Data storage and compression	☐ *Understands the difference between denary and binary systems* ✓ *Understands the difference between different data types* ✓ *Understands the concepts of a pixel, digital colours presentation and resolution.*	*30%*	📘 ICT Explorer 📘 Solutions & Syntax 📘 Web Design 📙 Teachable Machine
2 Data transmission • 2.1 Types and methods of data transmission • 2.2 Methods of error detection • 2.3 Encryption	✓ *Understands how a simple encryption system works* ✓ *Understands how server-client systems work and how data is transmitted*	*50%*	📘 ICT Explorer 📘 Solutions & Syntax 📘 Machine Learning 📙 Web Design
3 Hardware • 3.1 Computer architecture • 3.2 Input and output devices • 3.3 Data storage • 3.4 Network hardware	✓ *Understands the role of the central processing unit (CPU) in a computer* ✓ *Understands how computers*	*80%*	📘 ICT Explorer 📘 Sensor Challenger 📙 AI Introduction

	function and the purpose of each component in a computer system ✓ *Understands embedded systems and the role of each component in the system (input-processing-output; Sensors, computers and actuators)*		
4 Software • 4.1 Types of software and interrupts • 4.2 Types of programming language …	☐ *Understands the difference of software and hardware* ☐ *Can use IDE for programming*	*40%*	📘 ICT Explorer 📙 Solutions & Syntax
5 The internet and its uses • 5.1 The internet and the world wide web • 5.2 Digital currency • 5.3 Cyber security	☐ *Understands the difference between internet and world wide web and how the internet works* ☐ *Understands the mechanisms of data collection in online browsers and apps* ✓ *Understands how server-client systems work and how data is transmitted* ✓ *Understands the risks of data sharing on the internet and can implement proper safety measures*	*80%*	📘 ICT Explorer 📘 Web Design 📘 Teachable Machine
6 Automated and emerging technologies • 6.1 Automated systems • 6.2 Robotics • 6.3 Artificial intelligence	✓ *Understand embedded systems and the role of each component in a system (input-processing-output; Sensors, computers and actuators)* ☐ *Understands the purpose of automation and robotics* ☐ *Can build robotics and automation solutions to real-life problems* ☐ *Understands what constitutes artificial intelligence and where it is used* ☐ *Understands the deficiencies of AI systems and how AI systems are created*	*100%*	📘 AI Introduction 📘 Sensor Challenger 📘 Teachable Machine 📙 Automate

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Algorithm design and problem-solving

Cambridge IGCSE - Computer Science	AI CREATOR	Align-ment	Corresponding courses/books*
7 Algorithm design and problem-solving • (1) Development life cycle • (2) Systems, decomposition and design • (3) Understanding algorithms • (4) Methods of solution • (5) Validation and verification check • (6) Test data • (7) Trace tables • (8) Debugging • (9) Creating algorithms	☐ *Can implement a design process in the context of coding and digital creation* ☐ *Understands the role of each step in the design process* ☐ *Can create modular programs* ☐ *Can use flowcharts to plan algorithms* ☐ *Understands the concept of an algorithm* ☐ *Can use different data types and change data types in Python as needed* ☐ *Can use textual programming languages to create functional programs and solve real problems*	*90%*	📘 Develop & Test 📘 Solutions & Syntax 📘 AI Introduction 📙 Teachable Machine 📙 Sensor Challenger
8 Programming • 8.1 Programming concepts • 8.2 Arrays • 8.3 File handling	☐ *Understands the basic data types in programming* ☐ *Understands the concept of a loop and iteration* ☐ *Can use nested structures purposefully* ☐ *Understands the concept of a condition and a conditional statement* ☐ *Can control strings in Python* ☐ *Can use arithmetic, logical and boolean operators* ☐ *Can use variables, lists, and functions*	*90%*	📘 Develop & Test 📘 Solutions & Syntax 📘 AI Introduction 📙 Sensor Challenger
9 Databases • (1) Defining databases • (2) Data types • (3) Primary key • (4) SQL scripts	☐ *Understands the basic data types in programming* ☐ *Can use different data types and change data types in Python as needed*	*60%*	📘 Solutions & Syntax 📘 Machine Learning
10 Boolean logic • (1) Identify logic gates and symbols • (2) Define and understand logic gates • (3) Use logic gates • (4) Write logic expressions	☐ *Understands the basics of boolean logic and logic gates* ☐ *Can use logic gates purposefully* ☐ *Can create electric circuits in the context of embedded systems*	*80%*	📘 ICT Explorer 📙 Sensor Challenger

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IGCSE CS Syllabus: https://www.cambridgeinternational.org/Images/595424-2023-2025-syllabus.pdf