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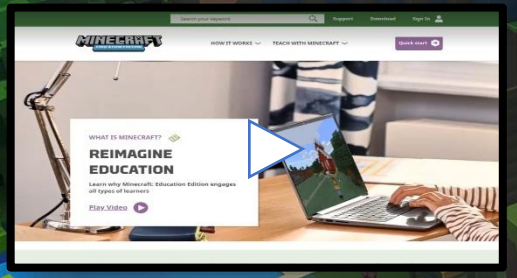
Inspiring Learning Opportunities

MINECRAFT EDUCATION EDITION

1.Getting Started – Why use Minecraft Education Edition?

Heard about Minecraft Education Edition and wondered if this could be something for you and your ākonga? This short video from Microsoft will give you the overview you need.

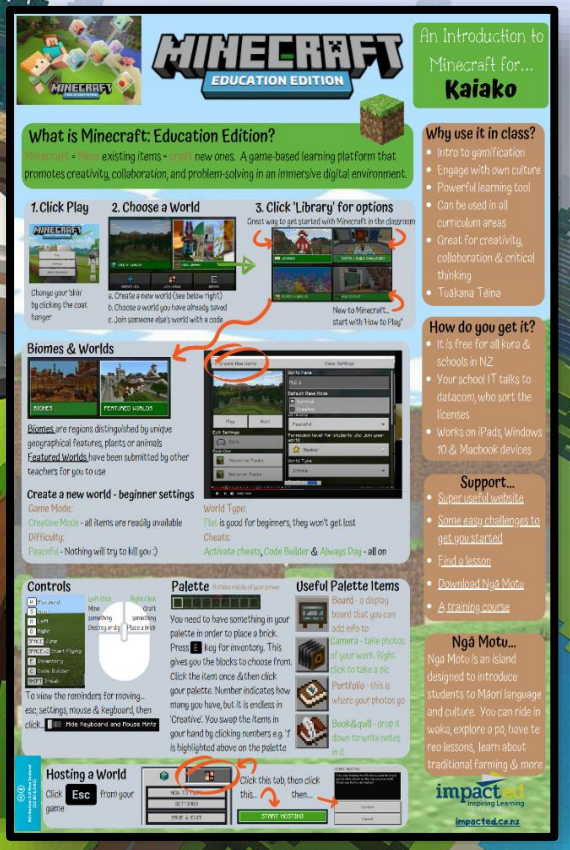


Minecraft Education Edition and the Educator Resource site.

Looking for a lesson or an idea to adapt for a topic or theme?

A collection of ideas to get you started.

A few shorter one-offs and some longer learning tied to units of work. These learning activities will work both in class and at home.



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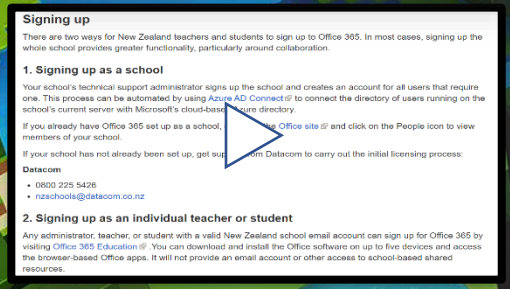
2. Mechanics – Setting up and things to know as a teacher.

Our ākonga are adept at navigating Minecraft, so here are a few handy things for us to know, when supporting our students with game-based learning.

Basic settings and a few handy hints. This video describes the settings and where to find the things you need. Some handy tips for managing Minecraft Education worlds.



Getting Minecraft Education Edition into your Kura. Nothing technical, just who to talk to and what to ask. This is best done by your school IT support provider.

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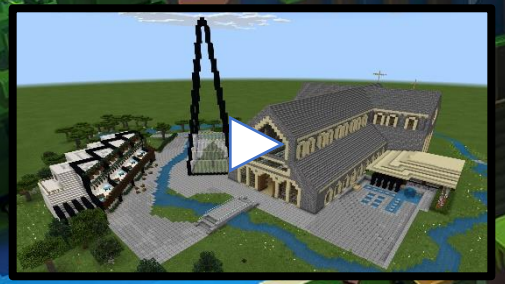
3. Minecraft and Digital Technologies – DDDO.

Example 1: A group of ākonga take on roles to research and learn about Ōtamahua. They develop a resource to teach others of its history.



Example 2: A group of rangatahi follow a design brief to redevelop a building of historical significance considering social, ethical and end-user considerations.

Example 3: A look at a lesson from the Minecraft Educator website. A group of ākonga learn about refugee relocation camps. They learn about managing resources and working cooperatively.

Designing & Developing Digital Outcomes (DDDO)
Progress Outcomes

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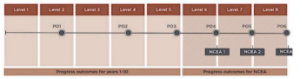
Always:
- Take account of the end-users
- Be used in an authentic context



Key Elements	Terminology
Progress Outcome 1 (PO1)	
• Teacher led • Develop, manipulate, store, retrieve & share digital content Digital Device Knowledge: • What is a digital device? • What is its purpose • Know that humans make them • Use some applications • Identify inputs & outputs • Know that they can store data & retrieve later	***End user:*** *who will use or see this?* ***Input:*** *how you put data into a device* ***Output:*** *what the end-user will see or use e.g. Seesaw post* ***Applications:*** *software programs that runs on your computer e.g. web browsers, e-mail programs, word processors & games are all applications* ***Digital device:*** *an electronic device that can receive, store, process or send digital information*
Progress Outcome 2 (PO2)	
• Students make decisions • Creating, manipulate, store, retrieve, share & test digital content • Parameters, tools and techniques given • Identify the role of components in an input-process-output system • Humans control the system Digital device Knowledge: • Impact on humans & society • These devices & impacts change over time • Choose from a range of applications/file types to meet the purpose	***Components:*** *are all the parts that make up a computer* ***Software & Hardware:*** *Components include software and hardware: The software tells the hardware what to do and the hardware executes the commands.* ***Input-process-output system: (IPO)*** *Putting information into the system, doing something with the information and then displaying the results.* ***File types:*** *A name given to a specific kind of file e.g. Microsoft Word document and an Adobe Photoshop document are two different file types*
Progress Outcome (PO3)	
• Students follow a defined process • design, develop, store, test, and evaluate digital content (for purpose) • social, ethical & end user considerations Digital device Knowledge: • Identify features of software • choose the most appropriate software and file types to develop and combine digital content. • Understand operating systems to manage devices, security & application software • Apply file management conventions • Security & privacy key for storing data	***Defined Process:*** *a series of actions or steps taken in order to achieve a particular end e.g. Inquiry Process or Design Process* ***Operating systems (OS):*** *The program that, after being initially loaded into the computer, manages all of the other application programs in a computer e.g. android, Windows 10, IOS*

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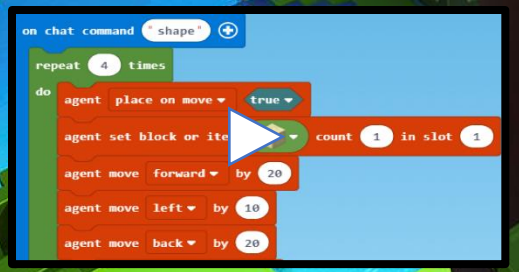
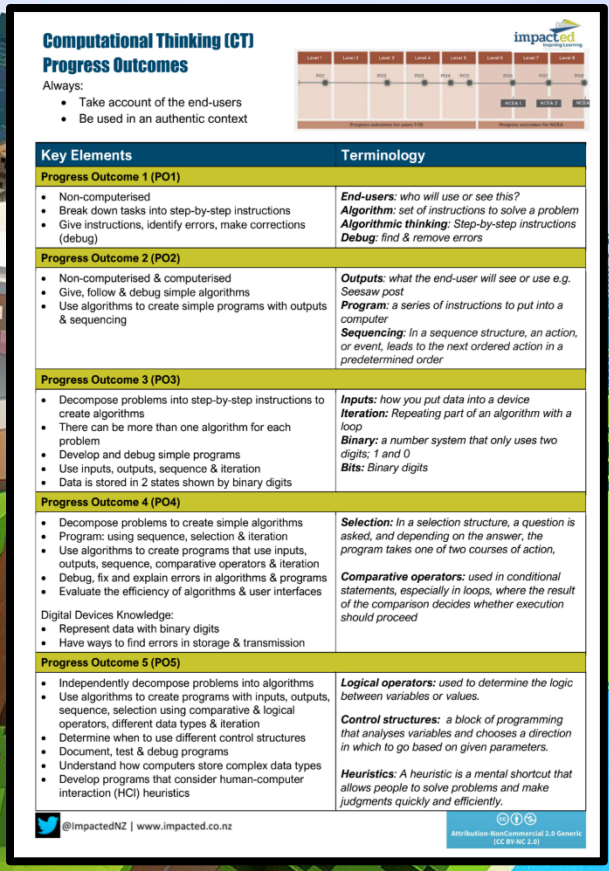
4. Minecraft and Digital Technologies – CT.

A look at the Computational Thinking and Computer Science resources available in Minecraft Education Edition. An overview of lessons and Code Builder using MakeCode.

Example 1: A Computational Thinking project based on the United Nations Sustainable Development Goals. An example of Minecraft being used as a tool to demonstrate a process.



Example 2: A unit to introduce Computational Thinking, providing opportunities for Decomposition, Abstraction, Repetition and Algorithmic Thinking.



Computational Thinking (CT) Progress Outcomes

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Always:
- Take account of the end-users
- Be used in an authentic context

Key Elements	Terminology
Progress Outcome 1 (PO1)	
• Non-computerised • Break down tasks into step-by-step instructions • Give instructions, identify errors, make corrections (debug)	***End-users**: who will use or see this?* ***Algorithm**: set of instructions to solve a problem* ***Algorithmic thinking**: Step-by-step instructions* ***Debug**: find & remove errors*
Progress Outcome 2 (PO2)	
• Non-computerised & computerised • Give, follow & debug simple algorithms • Use algorithms to create simple programs with outputs & sequencing	***Outputs**: what the end-user will see or use e.g. Seesaw post* ***Program**: a series of instructions to put into a computer* ***Sequencing**: In a sequence structure, an action, or event, leads to the next ordered action in a predetermined order*
Progress Outcome 3 (PO3)	
• Decompose problems into step-by-step instructions to create algorithms • There can be more than one algorithm for each problem • Develop and debug simple programs • Use inputs, outputs, sequence & iteration • Data is stored in 2 states shown by binary digits	***Inputs:** how you put data into a device* ***Iteration:** Repeating part of an algorithm with a loop* ***Binary:** a number system that only uses two digits; 1 and 0* ***Bits:** Binary digits*
Progress Outcome 4 (PO4)	
• Decompose problems to create simple algorithms • Program: using sequence, selection & iteration • Use algorithms to create programs that use inputs, outputs, sequence, comparative operators & iteration • Debug, fix and explain errors in algorithms & programs • Evaluate the efficiency of algorithms & user interfaces Digital Devices Knowledge: • Represent data with binary digits • Have ways to find errors in storage & transmission	***Selection:** In a selection structure, a question is asked, and depending on the answer, the program takes one of two courses of action,* ***Comparative operators:** used in conditional statements, especially in loops, where the result of the comparison decides whether execution should proceed*
Progress Outcome 5 (PO5)	
• Independently decompose problems into algorithms • Use algorithms to create programs with inputs, outputs, sequence, selection using comparative & logical operators, different data types & iteration • Determine when to use different control structures • Document, test & debug programs • Understand how computers store complex data types • Develop programs that consider human-computer interaction (HCI) heuristics	***Logical operators:** used to determine the logic between variables or values.* ***Control structures:** a block of programming that analyses variables and chooses a direction in which to go based on given parameters.* ***Heuristics:** A heuristic is a mental shortcut that allows people to solve problems and make judgments quickly and efficiently.*