



@ MHJC

# Teachers expectations:

- **Safety first (Listen – Understand - act)**
- Arrive to class on time.
- Work hard. Do not waste your time.
- Complete and hand in assignments on time
- Show respect and care for the school equipment, students and teachers


# Digital Technology In NZC

- What is digital technology?

"The digital curriculum is about teaching children how to design their own digital solutions and become creators of, not just users of, digital technologies, to prepare them for the modern workforce."

Chris Hipkins, 2018 

## The New Zealand Curriculum

In the [Technology Learning area](#)  there are two new technological areas:

**Computational thinking for digital technologies** – Students will develop an understanding of computer science principles that underlie all digital technologies. They'll learn core programming concepts so that they can become creators of digital technology, not just users.

**Designing and developing digital outcomes** – Students will learn how to design quality, fit-for-purpose digital solutions.



# Understanding of Computational Thinking

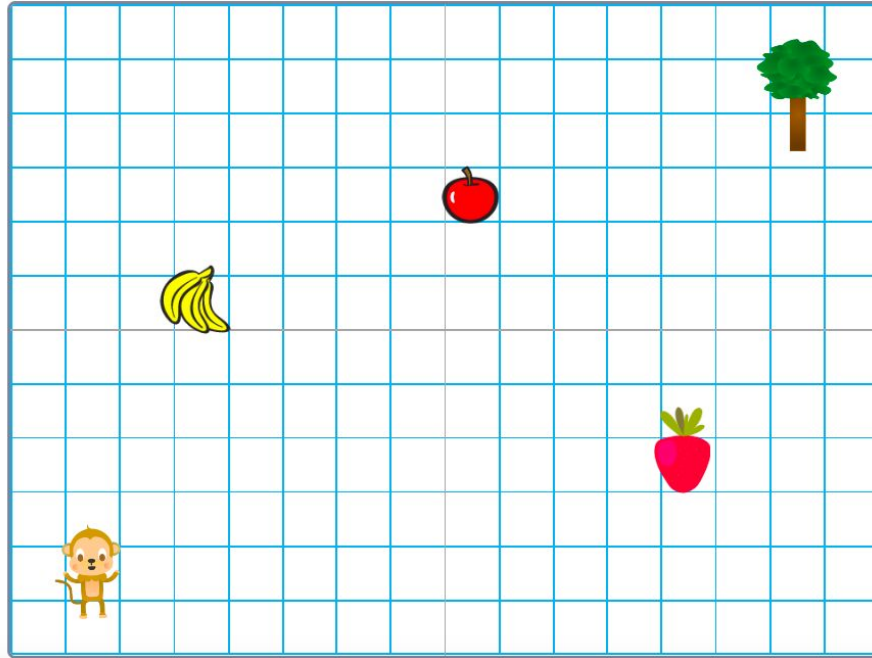
Computational thinking is about looking at a problem in a way that a computer can help us to solve it.  
It is not thinking about computers or like computers.

CAS Barefoot 

- **Our brain vs computer brain... Who wins?**

# Task 1 – Computational Thinking

- Use the grid below, write a set of instructions for the monkey to follow to collect the fruits on it's way to the tree. use “up”, “down”, “left” and “right”.



# Now use the computer - Software

- Using your own device, Open Scratch:

<https://scratch.mit.edu/projects/472147465>

- Now write a set of logical instructions – commands for the monkey to follow to collect the fruit on it's way to the tree.

# Computational Thinking

## Binary Digits

- Watch these videos:
- How computers work – Binary and Data
- <https://www.youtube.com/watch?v=USCBCmwMCDA>
- Understanding binary numbers:
- [https://www.youtube.com/watch?v=FrsgHUSZ\\_pc](https://www.youtube.com/watch?v=FrsgHUSZ_pc)

# Task-2: Binary coding

- Using only 2 digits 1 and 0, convert letters to numbers and these numbers to binary and should contain five bits only.

(G)

## Binary coding Task

1- Fill the table below with a binary code using only 2 digits 1 and 0. You need to convert the numbers to binary. The code should contain only five bits.

Base 10	Binary	Alphabet	Base 10	Binary	Alphabet	Base 10	Binary	Alphabet
0			9		I	18		R
1		A	10		J	19		S
2		B	11		K	20		T
3		C	12		L	21		U
4		D	13		M	22		V
5		E	14		N	23		W
6		F	15		O	24		X
7		G	16		P	25		Y
8		H	17		Q	26		Z

2- Write your name using binary code:

My name in binary code is:

3- Write a short message to another student using binary code and let the student figure it out.





**MIT**  
APP INVENTOR

Create Apps!

**Digital Technology Course - MHJC**

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# About MIT App Inventor

- MIT App Inventor is a visual programming tool that allows everyone to build fully functional apps for Android and iOS smartphones and tablets.
- You can have a simple first app up and running in less than 30 minutes.
- The blocks-based tool facilitates the creation of complex, high-impact apps in significantly less time than traditional programming environments.
- MIT App Inventor projects will empower you to move from **technology consumption to technology creation.**

# Getting Started - IT Preparation and Setting Up

Before you can use App Inventor, you need to set up your computer and, for certain cases, install the App Inventor Setup package on the computer.

<https://appinventor.mit.edu/explore/ai2/setup>

**Using MIT App Inventor in school networking environments:**

[https://docs.google.com/document/d/1GMXO\\_GoCRj3052Pg93dzEzJ5sXido9UI7Xrn6HYU6Xs/edit#](https://docs.google.com/document/d/1GMXO_GoCRj3052Pg93dzEzJ5sXido9UI7Xrn6HYU6Xs/edit#)

## Quick Overview of App Inventor UI

App Inventor lets you develop applications for Android phones using a web browser and either a connected mobile device or an on-screen emulator.

The MIT App Inventor servers store your work and help you keep track of your projects.

You build apps by working with:

- The App Inventor **Designer**, where you select the components for your app:

<https://appinventor.mit.edu/explore/designer-blocks>

- The App Inventor **Blocks Editor**, where you assemble program blocks that specify how the components should behave. You assemble programs visually, fitting pieces together like pieces of a puzzle:

<https://appinventor.mit.edu/explore/designer-blocks#blocks>

# Important Notes:

- You can connect your app to a mobile device, so you can test your work as you build. If you don't have an Android device, you can build your apps using the emulator, software that runs on your computer and behaves just like the mobile device.
- The App Inventor development environment is supported for Mac OS X, GNU/Linux, and Windows operating systems, and most Android device models. Applications created with App Inventor can be installed on any Android device.

## MIT App Inventor Beginners Tutorial Page

<https://appinventor.mit.edu/explore/ai2/beginner-videos>

**Then look at What's next below the tutorial page.**