MHJC Course

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

House Keeping

- Get to know the location of DGT resources: tools, equipments and electronic components that you are going to use in your DGT sessions.

- Know the pack-up procedure.

- Component storage is behind left side whiteboard – students do not access this unless they have teachers permission

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.

Technology

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.
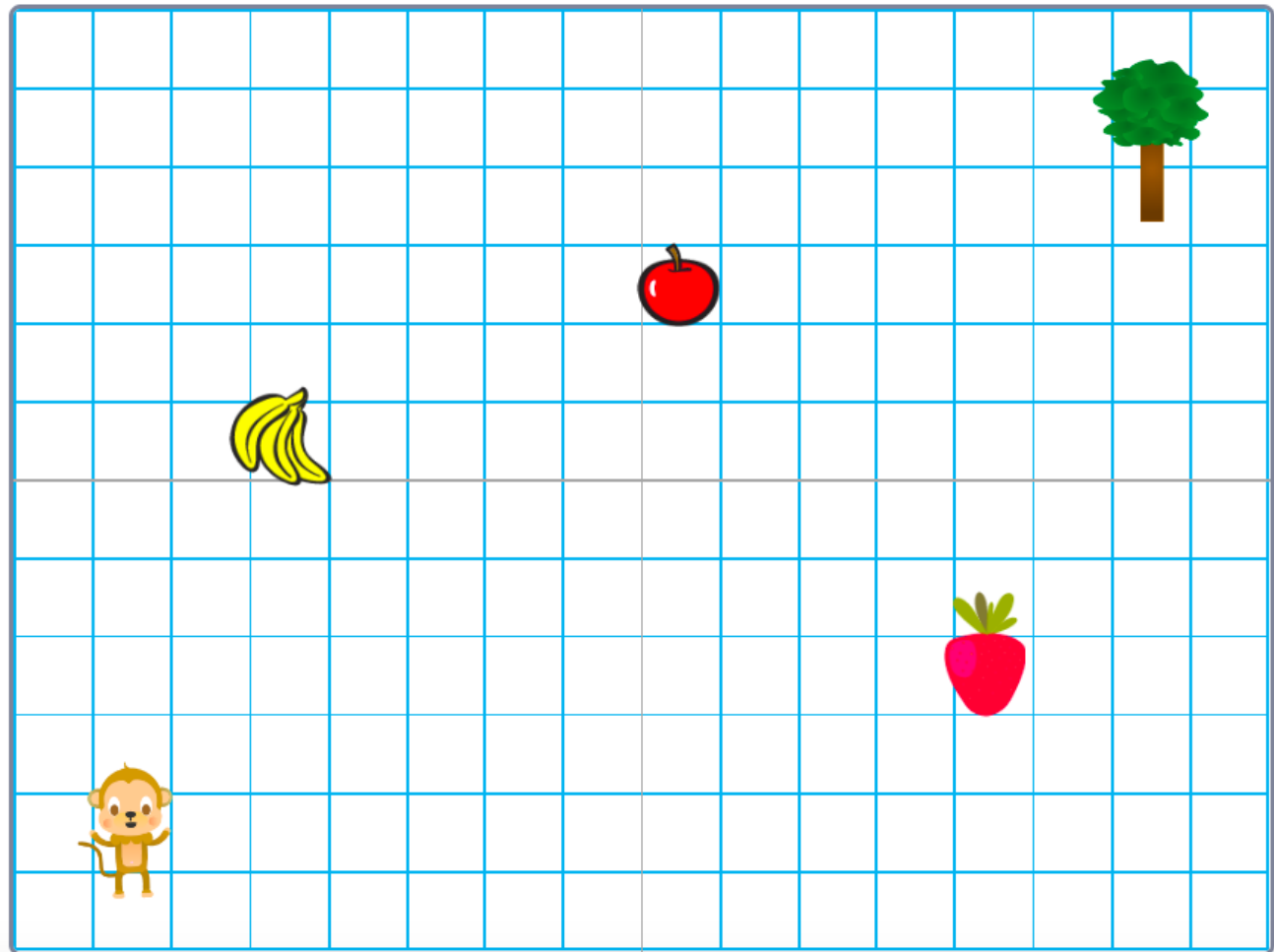
CAS Barefoot

Our brain vs computer brain… Who wins?

Algorithms

What is an algorithm in DGT??

- https://www.youtube.com/watch?v=eSYeHlwDCNA

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

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. (Google classroom)

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.