



# Code for Fun

*Coding for a better  
community*

```
mirror_mod = modifier_ob.  
mirror_object to mirror.  
mirror_mod.mirror_object =  
operation = "MIRROR_X":  
mirror_mod.use_x = True  
mirror_mod.use_y = False  
mirror_mod.use_z = False  
operation = "MIRROR_Y":  
mirror_mod.use_x = False  
mirror_mod.use_y = True  
mirror_mod.use_z = False  
operation = "MIRROR_Z":  
mirror_mod.use_x = False  
mirror_mod.use_y = False  
mirror_mod.use_z = True
```

```
selection at the end -add  
_ob.select= 1  
_ler_ob.select=1  
context.scene.objects.active  
("Selected" + str(modifier_ob.  
mirror_ob.select = 0  
bpy.context.selected_object  
data.objects[one.name].select
```

```
print("please select exactly  
--- OPERATOR CLASSES -----
```

```
types.Operator):  
X mirror to the selected  
object.mirror_mirror_x"  
or X"
```

```
context):  
context.active_object
```



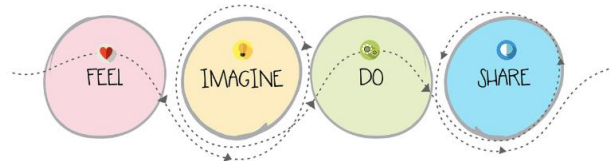
# Objectives

- Increase exposure to computational thinking, coding and digital making
- Leverage on innovation and values to make a difference towards improving our community
- Generate interest for possible computing elective at upper secondary

# Synergising the Learning



Sustainable Living – Smart Home



Infuse FIDS and Computational Thinking to Make a Difference

## COMPUTATIONAL THINKING

DECOMPOSITION

BREAK DOWN DATA AND PROBLEMS INTO SMALLER PARTS

PATTERN RECOGNITION

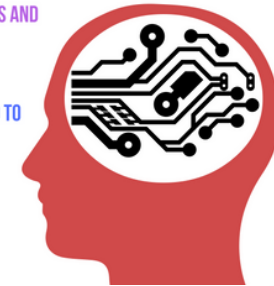
OBSERVE PATTERNS AND TRENDS IN DATA

ALGORITHMS

DETERMINE WHAT STEPS ARE NEEDED TO SOLVE A PROBLEM

ABSTRACTION

REMOVE DETAILS AND EXTRACT RELEVANT INFORMATION



M5GO v2.6 IoT Maker Kit and Sensors

# Outline of Activity

- 10 h spread over 3 days
- Learn code through your PLD, infuse Design Thinking and Computational thinking
- leverage on block programming and sensors for capstone project to create a prototype
- Reflection for reinforcement of Learning
- Extension and Learning – infusion to VIA in Sec 2

# Schedule

- Bring fully charged PLD
- Pair work
- 30 min recess

Description	23 Oct Mon	24 Oct Tue	26 Oct Thu
Activity	0800 - 0930	0800 - 1100	0830 - 0930
Break	Recess 0930 - 1000	Recess 1100 - 1130	Recess 0930 - 1000
Activity	1000 - 1230	1130 - 1230	1000 - 1130

# Other Administration Matters

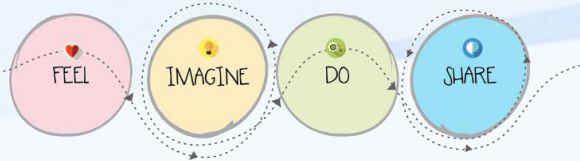
- Report punctually to your own classrooms after recess.
- Be properly attired and be respectful to the trainers.
- Bring writing materials (i.e. Pen)



## Possible Infusion into Sec 2 CCA-VIA

- Infuse Design Thinking (FIDS) and Computational Thinking
- Make the difference to the community
- More details will be shared in Sec 2

# Ideas



Smart Farm and Watering System



Smart and Remote IoT Pet Feeder



Smart Hygiene Monitoring System



# Annex A

## Workshop Outline

Hours	Lesson Objectives
1	Computational thinking and introduction to microcontroller and programming platform.
2	Learning and controlling outputs (LEDs and Buzzers) with Buttons
3	Using and Coding Inputs/Sensors (PIR and Light Sensors)
4	Using sensors (ultrasonic sensor) to control actuators (servo motor)
5	Collection of data, data analysis using environment sensor and to control an output (ie. LED, Buzzer or Servo)
6	Using IoT and sensors to collect, post and analyse data on the cloud
7	Learn what is design thinking, how to empathise, define problem statement before ideating on solution, prototyping and reiteration using sensors/actuators
8-10	Capstone Project – Students will work in groups to create a prototype, using what they have learnt, to solve problem statement posed