TSUEN WAN PUBLIC HO CHUEN YIU MEMORIAL COLLEGE

STEAM CURRICULUM PLAN (2025-2026)

Curriculum aims

STEAM is an acronym that refers collectively to the academic disciplines of Science, Technology, Engineering, Arts and Mathematics. In response to the changing needs in our society and the rapid economic, scientific and technological developments in the 21st century, it is essential to promote STEAM education and hence equip our students with the capability to meet the changes and challenges in society and around the world.

Major objectives to achieve include:

1) developing a solid knowledge base among students,

2) enhancing their interests in Science, Technology, Entrepreneurship, Arts and Mathematics,

3) strengthening students' ability to integrate and apply knowledge and skills

4) nurturing creativity, collaboration and problem-solving skills of students,

5) strengthening the partnerships with community stakeholders, and

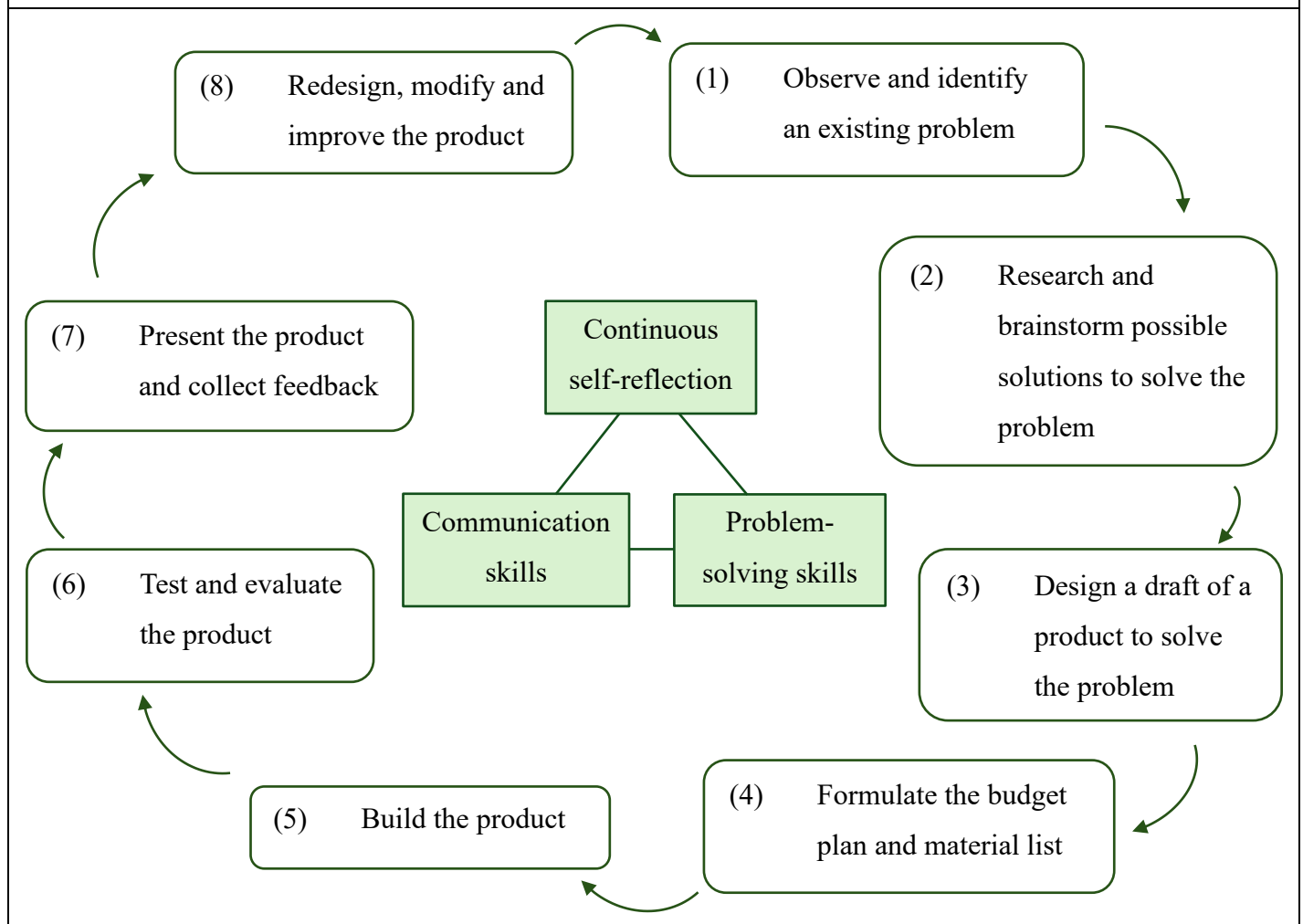6) developing talents/experts in STEAM-related areas to foster the development of Hong Kong and mainland China.

Subject Panel Head: Ms. Leung Hoi Yan Wendy (leunghyw@twphcymc.edu.hk)

STEAM elements	Content
Science	Making invention, material science, conservation and pollution problems
Technology	Multimedia editing, webpage design, robot coding, AI
Engineering/ Entrepreneurship	3D printing and product making, Marketing of products
Arts	3D design, product design, webpage design
Mathematics	Budgeting

F1 Curriculum – Group-based Annual Invention Project

Objectives	To design and make an invention product
Key Tasks of the project	1) Design draft 2) Budget plan and material list 3) The invention product 4) Group presentation 5) A poster describing the invention 6) A video presenting the product 7) A website presenting the product 8) An exhibition booth selling the product

Design thinking elements of the project

(8) Redesign, modify and improve the product

(1) Observe and identify an existing problem

(2) Research and brainstorm possible solutions to solve the problem

(7) Present the product and collect feedback

Continuous self-reflection

Communication skills

Problem-solving skills

(3) Design a draft of a product to solve the problem

(6) Test and evaluate the product

(4) Formulate the budget plan and material list

(5) Build the product

Programme Plan for F1 STEAM lessons

Topic	
1.	Design
2.	Materials, tools and budget
3.	Poster making
4.	Video making
5.	Poster presentation
6.	Design a webpage
7.	Make a webpage
8.	Make a webpage
9.	NFC and presentation
10.	Project presentation
11.	Exhibition
12.	Evaluation

Example of F.1 students' project website:

https://sites.google.com/twphcymc.edu.hk/steam2324-1d-group4-public

https://sites.google.com/twphcymc.edu.hk/steam2425-1d-group1-public/home

Programme Plan for F2 STEAM lessons

Topic	
1.	AI proposal
2.	Materials, tools and budget (3D Printing)
3.	Materials, tools and budget (3D Printing)
4.	AI Robot coding (HCY robots)
5.	AI Robot coding (HCY robots)
6.	AI Robot coding (Lego Spike robots)
7.	AI Robot coding (Lego Spike robots)
8.	AI Robot coding (Lego Spike robots)
9.	AI Robot coding (Lego Spike robots)
10.	AI Robot coding (Lego Spike robots)
11.	Evaluation

HCY STEAM
F1 INVENTION PRODUCTS

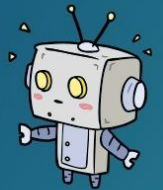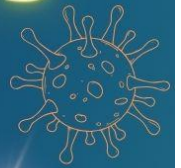Coin sorting machine

Solar fan

Remote-controlled food truck

Hair Washing Machine

Mechanical vacuum cleaner

F.1 Group Project Presentation

HCY STEAM Posters

TWPHCYMC

STEAM
PROJECT
GROUP 6

Susan 1A(14)
Julian 1A(15)
Kris 1A(24)
Paul 1A(25)

01

Water dumbbells

Our dumbbell two water bottles dumbbell. In order to protect the environment, we use plastic water bottle, rice, soil and small rocks.

Creative Ideas

Our bumbbell used to water bottle. We use plastic water bottle, uncooked, soil and small rocks. This time we use two idea, one is to make disabled people can also use it. Another idea is to add the water bottle in the dumbbell so that the people can easily drink water

02

03

Function

Our product can exercise our arms, It not just only exercise our arms, it also can exercise another such as our muscle. If your arms easily to be tied, then let's try our product everyone can easily to handle.

Tsuen Wan Public Ho Chuen Yiu Memorial College

Portable hair washing machine!!

Functions:
1. massage your head
2. wash your hair
3. dry your hair

It is only $150!!!

Faster than you wash by yourself!
It can help you to wash your hair comfortably

You can use a plastic bottle to replace this bottle

We are Gp 9!

1B Group 9
Cheung Yu Ting(3)
Chan Cze Ching()
Chan King Ching(16)
Chu Yat Fan (19)

MULTFUNCTIONAL RULER

EIGHT DIFFERENT TOOLS IN ONE RULER

Folding Ruler

French Curves

Circle Template Ruler

Trapezoid Ruler

Magnifier

Protractor

Set Square

Soft Ruler

$25

TSUEN WAN PUBILC HO CHUEN YIU MEMORIAL COLLAGE

1A group 5

Coin Sorting Machine
kate(10), Charltte(11) Minnie(12), Cinky(13) Iassc(23)

PHOTO

ABOUT OUR PRODUCT

This product is convenient for sorting out coins. other than that, this product is small and easy to tidy up.
Thiscoin machine offers a range of benefits, including accuracy, speedand efficiency.

The material used for this product is cardboards, and it can be recycled. We vhose this material because we want to protect the environment
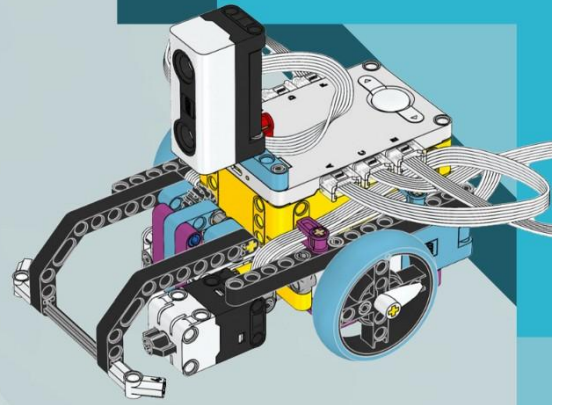
This coin machine is a device which is used to sort out many different types of coins which is perfect for a old aged people and it is very satisfying to watch the coins sorting by itself
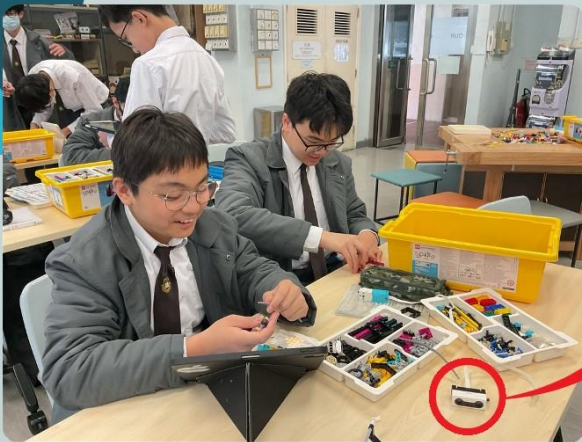
HERE

2A 22 Daniel Chong

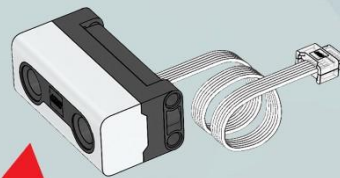# STEAM LEGO SPIKE

Sensing Robot   Lego 2

Step 1: Building
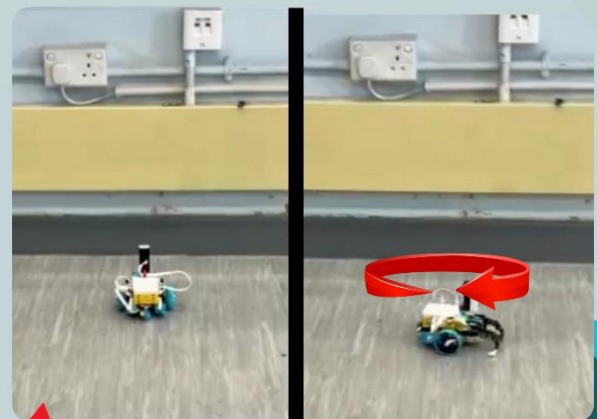
LEGO Distance Sensor

Can be used to detect an object (e.g. a wall)

Step 2: Coding

Finished Robot

when program starts
set movement motors to C+D
set movement speed to 30 %
set 1 motor rotation to 17.5 cm moved
E set speed to 20 %
E run ↻ for 1 seconds
E run ↺ for 1 seconds
play beep 60 for 0.2 seconds
play beep 72 for 0.2 seconds

when left Button pressed
wait 1 seconds
move ↑ for 20 cm

when right Button pressed
wait 1 seconds
start moving straight: 0
wait until F is closer than 10 cm ?
stop moving

HCY STEAM
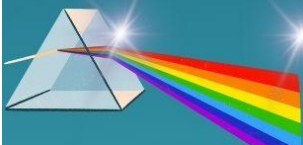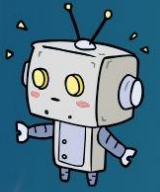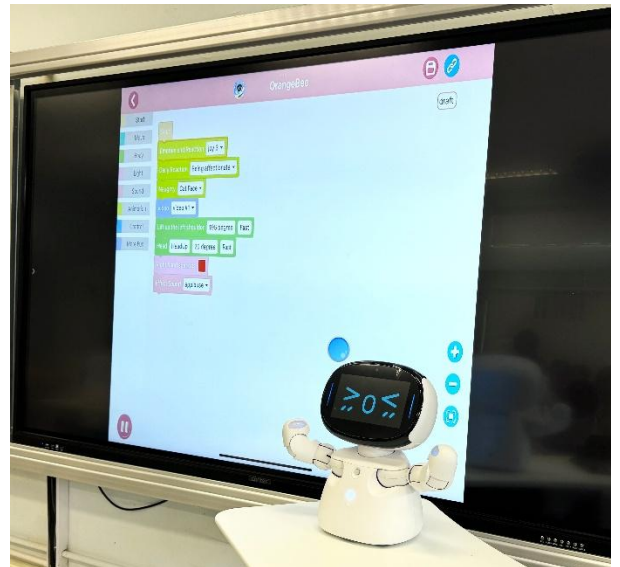# F1 EXHIBITION BOOTH

HCY Robot Coding

LEGO Spike Robot Coding

3D Printing