各組別一等獎的作品簡介

小學組一等獎作品：智能垃圾桶

學校：仁濟醫院蔡衍濤小學
成員：楊志遠，陳安琪，梁緯祈

作品說明：由於清潔工人清理垃圾桶的速度遠遠趕不及垃圾桶滿溢的速度。以及人們不當地處理煙屑，會引起火災。因此，我們運用 Makeblock Orion 主控版來製作智能垃圾桶，當中利用超音波感應器探測垃圾的高度，若偵測到垃圾桶即將爆滿時，就會利用物聯網自動發送訊息(Line)給清潔工人，讓他們可以及時清理垃圾桶，保持環境清潔。另外，他們還會內置一個煙霧感應器來探測異常的情況，防止煙屑燃燒垃圾桶內的物品而引起火災。同時，相關數據會紀錄到雲端，以便收集各區垃圾桶滿溢的數據，以作分析各區垃圾桶的使用量，繼而有效地分配各區垃圾桶的數量及安排清潔工人清潔垃圾桶的次數，保持本港環境清潔。

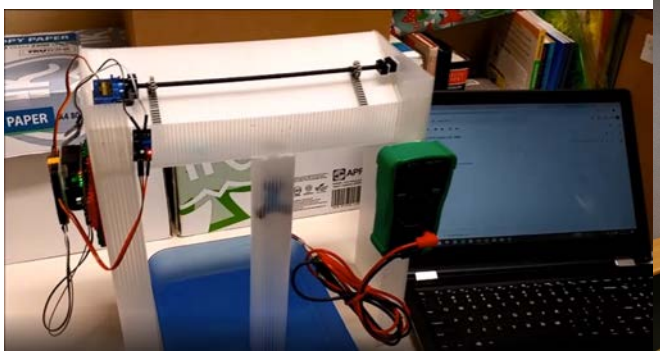
初中組一等獎作品：tRAIN station

學校：St. Paul's Convent School (Secondary School)

成員：Yu Chi Ki, Chow Hiu Hang Kaitlyn, Wong Hoi Luen Jasmine

作品說明：

• Global warming has become a serious environmental issue.With the rising of temperatures, mega storms and heavy rain are likely to become common in the future.
• We have found that outdoor MTR stations (esp. Kwun Tong and East Rail Lines) are unprotected from the rain, we decide to innovate a device to provide extra protection for the platforms and harvest the rain for electricity generation and cleaning.
• A lot of Hong Kong people and visitors use the East Rail Line to go to Shenzhen, which is an important route to connect to Greater Bay Area.
• The system can also be used in bus stops, light rail stations, airport, and extended to the Greater Bay Area cities like Guangzhou and Shenzhen. There are lots of outdoor stations there.
•Raindrop sensors will be installed on the top of the platform roof.
• When rainfall is detected, a panel will slide out as an extension of the platform root and cover the track and the train. The panel will lead the water into a chute where the water will be filtered, eliminating all the leaves and mud.
• Then, the filtered water will be poured into a water turbine to generate electricity. The generated electricity can possibly be used for electronic information display, i.e. Billboard outside the flooded or out-of-use station, and to slide the panel when rainfall is detected.
• A water tank can be installed in the concourse (near the washrooms) to store the filtered water which can be used as flushing water and daily cleaning of the MTR station.



高中組一等獎作品：A.I. CAMe

學校：宣道會陳朱素華紀念中學
成員：陳詠怡，李學賢，胡嘉玲

作品說明：全球失明和視力障礙人數在 2015 年 約有 3600 萬人，而在 2020 年估計將有 3850 萬人失明； 到了 2050 年失明人數更達到 1.146 億人。大部分產品價格昂貴，是大部分視障人士不能負擔的，現時還欠一種便宜而且智能化的工具給視障人士出行。A.I. CAMe 的出現正正是爲了填補該空缺。

老師組一等獎：利用設計思維 - 建構綠色科技智慧休憩設施

學校：香港教師會李興貴中學

老師姓名：黃廷峰

作品說明：我們希望可以利用設計思維，去設計一個綠色科技智能休憩設施。在這個設計思維的最初階段，我們會問一個問題，我可以改變公園的設施嗎？之後整個設計思維學習，會分成五個階段：第一個階段係同理心、第二個階段係界定、第三個階段係概念化、第四個階段係原型製作、而最後的階段就係測試。