



政府資訊科技總監辦公室

Office of the Government Chief Information Officer



IT Innovation Lab in Secondary Schools

中學IT創新實驗室計劃

6 March 2021



The 2019-20 Budget

Proposed in 2019-20 Budget - *Pooling Innovation and Technology Talent*

“Provide enhanced IT training to secondary school students outside normal curriculum through provision of funding for all publicly-funded secondary schools to implement the IT Innovation Lab in Secondary Schools programme”

Smart City Blueprint 2.0 –
Smart People: Nurturing Young Talent





2021-22年度 財政預算案



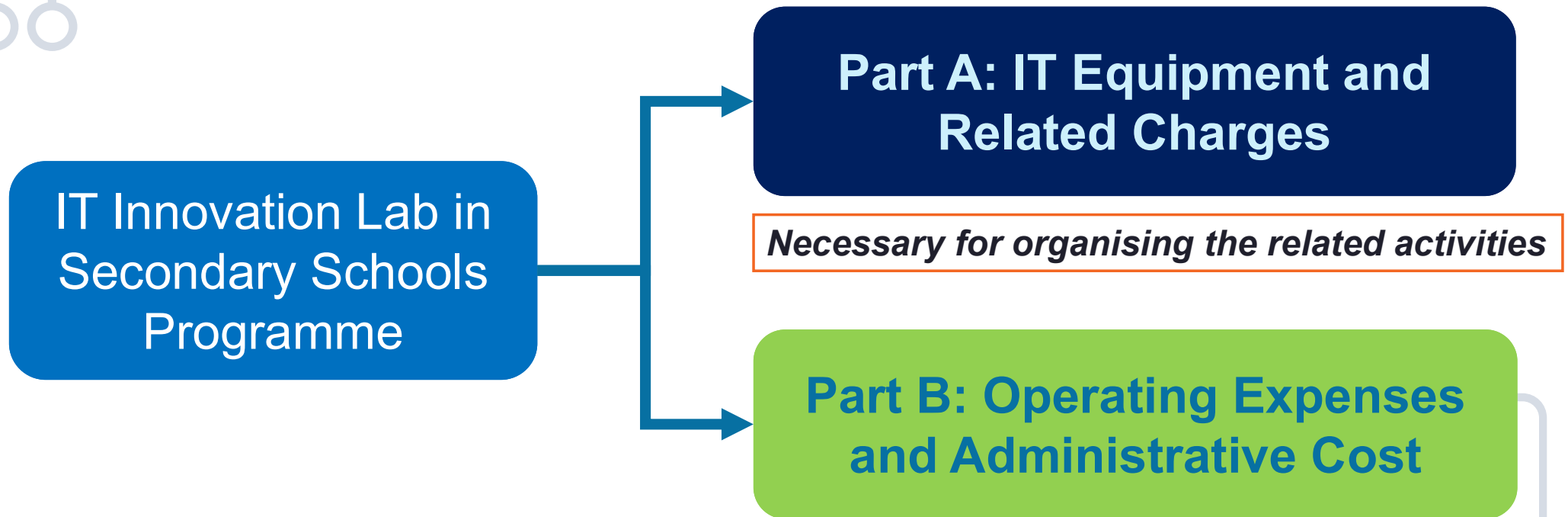
The IT Innovation Lab in Secondary Schools Programme has received positive response since its launch. I will set aside over \$200 million to extend the programme to primary schools. Funding of up to \$400,000 will be provided to each subsidised primary school in the coming three school years, thereby rolling out a "Knowing More About IT" Programme to enhance students' interests and knowledge in information technology and their applications through extra-curricular activities, so as to prepare them for integration into the knowledge-based economy and participation in the development of a digital society. The OGCIIO will set up a one-stop support centre to provide assistance for primary schools.

IT Innovation Lab in Secondary Schools Programme

Objectives

- ✓ Enhance EITP and extend the programme to all publicly funded secondary schools
- ✓ Enhance the interest of young people (including secondary school students) in IT and innovative thinking and foster an IT learning atmosphere to encourage them to choose technology-related tertiary education programmes and pursue an I&T career in the future
- ✓ Lay a sound foundation in IT for young people during their secondary schooling, thereby promoting local popular science education and expanding the supply of I&T talent

Funding Scope

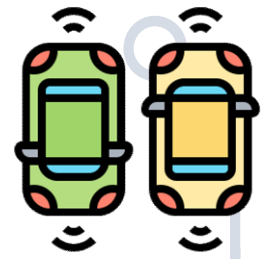
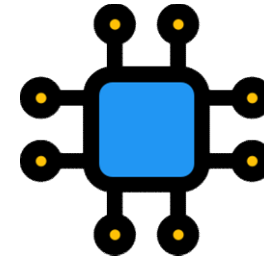
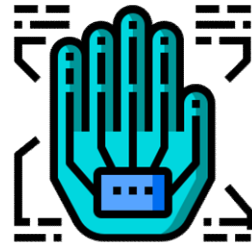
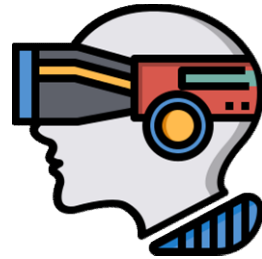


Generally speaking, the funding for the procurement of IT equipment, infrastructure and related services should not be more than \$500,000 during the entire programme period.

Part A : IT equipment and Related Charges

Examples:

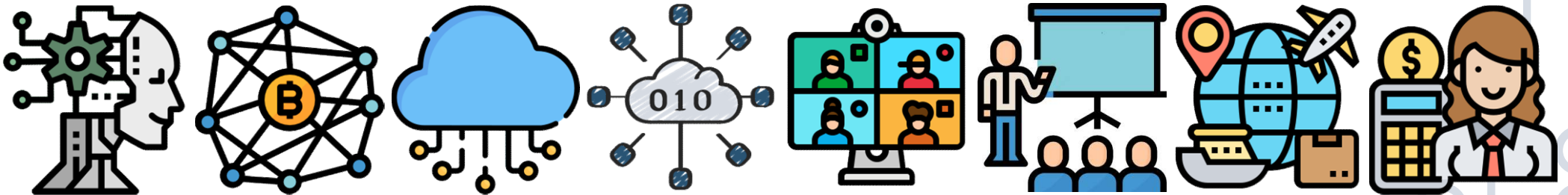
- ✓ Procure or rent server-side and client-side hardware and software
- ✓ Optical fibre and broadband network (**necessary for organizing the IT activities**)
- ✓ Software-as-a-service, cloud-based servers and storage
- ✓ Acquiring relevant professional services



Part B: Operating Expenses and Admin. Cost

Examples

- ✓ Coding class, mobile app workshop, VR/AR application experiment
- ✓ Seminars on the application of IT / digital transformation
- ✓ Short course or other learning experience
- ✓ Visits to local offices of multinational companies and local start-ups
- ✓ Preparing for and participating in local and non-local competitions
- ✓ Organising IT exhibitions
- ✓ Operational expenses of the activities (e.g. maintenance and related professional services including part-time tutors and part-time staff)
- ✓ Administrative cost (accounting and auditing services)

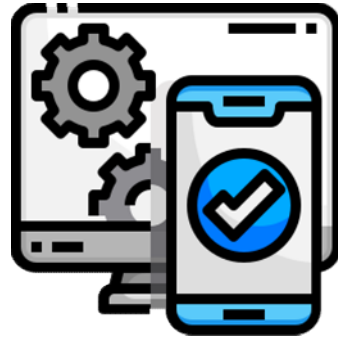


Examples of Applications

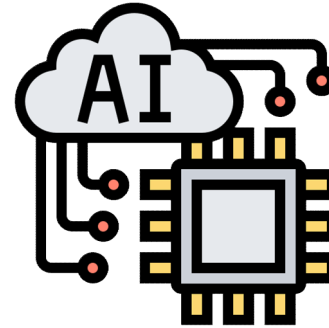
Coding Classes



Mobile app Classes



AI Courses



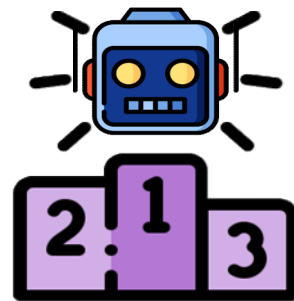
Big data workshops



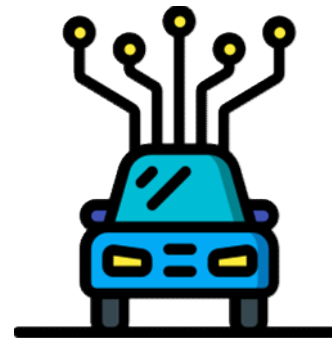
VR classes



Robotics Competition



Vehicle coding



Drone coding mission



Governance Structure

Advisory Committee

- To provide advice in major aspects, including the reference list of equipment, the nature and types of IT-related ECA and implementation progress of the programme

Vetting Committee

- To endorse vetting criteria and pre-approved activity types; and
- To consider individual applications based on endorsed vetting criteria and make funding recommendations to the OGCI0 to ensure that the approved funding will be used in line with the policy objectives and funding scope of the programme

Application and Funds Disbursement

- The funding scheme has already been open for application from **NOW** on to the end of 2022/23 school year.
- Applications can propose activities across school year. Any maintenance cost of procured IT equipment after programme end (i.e. 31 August 2023) will not be covered.
- Funds disbursement will be provided annually on each school year.
- Required to submit an annual report on the details of the proposed IT activities conducted, and the expenditure and usage of the procured equipment and services together with the next year's annual plan by **August** annually.

Application Procedures

Applicant schools may submit their applications through e-form submission.

<https://www.it-lab.gov.hk/en/application.php>

「中學IT創新實驗室」申請表格

1) 簡介

2) Part A: Particulars of the Applicant School 甲部：申請學校資料

3) Part B: Annual Plan - Part I 乙部：年度計劃書 - 第一部分

4) Part B: Annual Plan - Part II (a) 乙部：年度計劃書 - 第二部分 (a)

5) Part B: Annual Plan - Part II (b) 乙部：年度計劃書 - 第二部分 (b)

6) Part B: Annual Plan - Part III 乙部：年度計劃書 - 第三部分

Part A: Particulars of the Applicant School 甲部：申請學校資料

School Name 學校名稱 *

School Name (English) 學校名稱 (英文)

School Name (Chinese) 學校名稱 (中文)

School Code 學校編號

i School information will be retrieved after "School Name" or "School Code" is inputted and ENTER is pressed. Please verify the accuracy of the retrieved information. 在輸入「學校名稱」或「學校代碼」並按 ENTER 鍵後，將自動檢索學校資料。請核實檢索的資料是否準確。

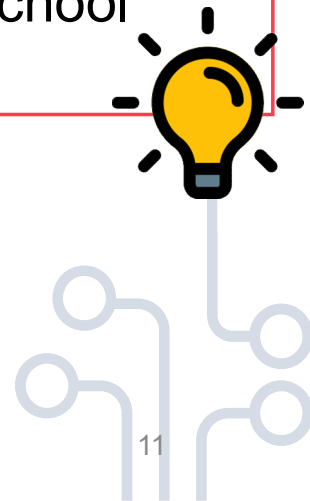
School Code 學校編號

School Type 學校類別 *

請選擇 ...

School Address (English) 學校地址 (英文) *

The Annual Plan can propose more than one activities for the whole school year.



Proposal Requirements

Project Scope	The proposed scope is primarily related to IT (including but not exhaustively Artificial Intelligence, Big Data, Blockchain, Cloud Computing, Coding / Algorithm / Computation Thinking, Cyber Security, 3D modeling, Digital Game Design and Development, Drone Coding, Internet of Things, Mobile App Development, Robotics Coding, Virtual Reality / Augmented Reality / Mixed Reality, Web Development) and in line with the policy objectives and funding scope of the programme.
Project Outcome	The proposed activity can enhance students' computational thinking and digital skills in innovation and real-life problem solving outside regular classroom learning, and cultivate students' interest in IT and foster an IT learning atmosphere at school.
Design and Implementation	The proposed activity is practical.
Financial Considerations	The proposed budget is reasonable and effective.

Pre-approved Activity Types

Pre-approved Activity Types



The following activities with cost \$100,000 or below:

Workshops	Short courses	Lessons
Maker sessions	Trainings	Exhibition
Seminars	Competitions (intra- and inter-school, local)	Expo
Webinars	Visit to local IT organisations	Open day

Non Pre-approved Activity Types

- Non-local competitions
- Conference/Symposium
- Any activity with cost over \$100,000
- Any equipment and operating expenses/administrative cost that are sharable with more than one activities with sum over \$100,000

Tips (1) - Examples of Out-of-Scope Items

Category	Out-of-scope Items
Lab hardware, software and cloud tools and services	<ul style="list-style-type: none"> • E-learning equipment for assisting general teaching and learning purposes • Notebook computers for regular ICT class (e.g. whole-school network) • Renovation works and furniture for setting up an IT lab • School's general facilities (e.g. WiFi, CCTV) • Non-IT related STEM equipment (e.g. solar panel) 
IT-related activities	<ul style="list-style-type: none"> • Lab activities of regular subject of ICT within traditional syllabus • All trips outside Hong Kong (except representing Hong Kong in non-local competitions)
Operating cost	<ul style="list-style-type: none"> • Teacher training • Maintenance cost for schools' pre-existing hardware or software • Utility costs (e.g. electricity cost) • Pre-existing bandwidth subscription • Entertainment expenses such as food and beverages 

Please refer to [Examples of Out-of-Scope Items in Annex 3 of the Application Guidelines](#)

Tips (2) – Funding Scope

Spending on Equipment

- Hardware and software to be purchased must be the IT equipment that are necessary for organising the related activities
- The majority of the funding should be deployed on development of the content of activities. Funding for the procurement of IT equipment, infrastructure and related services should not be more than \$500,000 during the entire programme period.



Sustainability

- Avoid high initial investment (e.g. \$1M in the first year) without justifications
- Plans on how to utilise the procured IT equipment for more IT-related activities in the three school years under the scope of IT-Lab Programme.
- Sharing of equipment among activities instead of procuring similar equipment in each activity
- Maintain effective control over the cost-effectiveness of the implementation of proposed activities (e.g. costs per students)

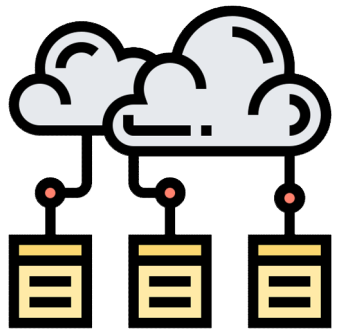


Tips (3) – Cost Items



Details of cost items to be included in the application :

- High-level specification (e.g. specification of the items, reference model with price, etc.)
- Estimated quantity (align with the estimated number of students participants)



Cloud Services vs Hardware Equipment :

- Making good use of existing cloud services:
 - Get rid of technical maintenance and support on on-going basis
 - Get rid of frequent hardware upgrade on on-going basis
 - Get rid of on-premises hosting
 - On-demand and elastic

Tips (4) – Cost Items



Procurement :

- Follow proper procurement, accounting and financial control procedures
- Not vendors specific



Audit & Accounting Services :

- Audit services – Please reserve max \$5,000 for the programme and is mandatory in the last year of the programme.
- Accounting services – max \$15,000 for the programme

Reference List of Equipment / IT-related Activities

- Inputs from IT-education related associations, IT corporates and academia
 - Made reference to EITC partner schools and EITA participating schools
 - Currently, there are about 40 reference items, containing hardware, software and cloud services
 - Currently, there are about 30 reference IT-related ECA cases
 - No commercial elements in the list



Reference List of Equipment (Examples)

Examples

Technology	Hardware / Software / Cloud Services	Level (Pre-requisite, if any)	Purpose and Description
Artificial Intelligence (AI)	Hardware – Vision Recognition Kits	Level : Moderate Pre-requisite : NIL	<ul style="list-style-type: none">- Hardware kits that equip with microcontroller board/embedded processor and camera- run pre-trained machine learning models such as recognising objects, e.g. animals, fruits- Supports common programming languages such as Python, etc.
Drone Coding	Hardware : Programmable Drones	Level : Moderate Pre-requisite : Nil	Description : <ul style="list-style-type: none">- block-based / text-based coding- programmable with Scratch, Swift, Javascript, Python, etc.- Connection via flight controllers or smartphones

Reference List of IT-related Activities (Example)

Example

Case : Introduction Workshop to Artificial Intelligence (AI)

Objective	Introduce AI to students through a lecture and a practical session
Description	Students will learn the principle and daily application of AI through interactive lecture
<u>Activity Details</u>	
Hardware	Vision & voice capturing peripherals PC / laptop / tablet computer with Internet connection
Software	Common programming languages like Python
Cloud Services	AI service platform
Major Activities	<ol style="list-style-type: none"> 1. Interactive lecture 2. Brainstorm session 3. Application design and programming
Learning Objective(s)	Understand AI application in our daily lives/Combine imagination and computational thinking to innovate and build AI applications
Duration	Theoretical session: 4 hours Practical session: 8 hours
Difficulty	Medium
Target Level	S1 – S4
Target No. of Students	About 20 students per workshop

Planned Activities

- Ampower Talent Institute
 - Hong Kong Secondary Schools IT Talent Competition and Collaboration to Build “Career Compass and Development WebApp” POC utilising AI, Blockchain, Cloud Computing and Big Data making use of government open data
- Hong Kong New Emerging Technology Education Association)
 - 全港孕育資訊科技獎勵計劃
- Hong Kong Wireless Technology Industry Association,
 - 中學生創新創意科技節
- Sharing Webinars (29 March 2021 tentatively)



One-stop Support Centre

中學IT創新實驗室計劃



One-stop Support Centre

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