The 1st SMARTHON CUP
Singapore Smart City AI Challenge - Competition Briefing & Workshop

Date: November 6, 2026
Time: 14:00-16:30
Competition Briefing

SMARTHON

ep education
Enabling People with Knowledge and Skills

THE 1ST SMARTHON CUP
SINGAPORE SMART CITY AI CHALLENGE

SMARTHON edu education

COMPETITION BRIEFING AND WORKSHOP

THREE COMPETITION TRACK





CORE HARDWARE REQUIREMENT

- Learn more about the competition
- Join our hands-on AI workshop

FINALIST TEAMS ADVANCE TO THE INTERNATIONAL INVITATIONAL
Compete with teams from Hong Kong, Mainland China and Overseas

Date & Time
6 November (Friday)
14:00 – 16:30

Location
3023 UBI Road 3, #02-08/09, UbiPlexI

Audience
Primary/Secondary School Teachers

Format
In-Person

Briefing and Workshop Detail:

- Learn the competition rules, timeline, and 3 Track themes.
- Learn how to enroll into the Hong Kong Competition with Winner Team.
- Experience AIoT hardware and MakeCode with the Smarthon Kit.
- Build IoT scenes, like a smart street light with health monitoring.
- Use n8n with AI Agent (DeepSeek, Copilot, Gemini) to generate AI reports.

Outline

1. Competition Background
2. Category & Team Rules
3. Hardware Requirement
4. Scoring Criteria & Submission Requirement
5. Track 1: Smart City
6. Track 2: Smart Home
7. Track 3: Smart & Green Garden
8. Model Requirement
9. Awards & Recognition
10. Q&A

1. Competition Background


THE 1ST
SMARTHON CUP
Empower Youth Innovation • Shape a Smart Future
SINGAPORE SMART CITY AI CHALLENGE
3 CHALLENGE TRACKS
SMART HOME
AI & IoT for smarter living
SMART & GREEN GARDEN
Sustainable technology for a greener tomorrow
SMART CITY
Innovative solutions for better urban living
DESIGNATED CORE HARDWARE
AI OPTIONAL REQUIREMENT
MICRO:BIT
IOT:BIT
SMARTHON AIOT KIT
AI CAMERA
AI VOICE MODULE
IMPORTANT DATES
2026-2027
21 SEP : Registration Opens
6 NOV : Briefing & Workshop (Session 1)
21 DEC : Briefing & Workshop (Session 2)
15 JAN : Registration closes
FEB : Training Workshop
1 MAR : First Round Submission Deadline
14 APR : Regional Final Ceremony
JULY : Internation Competition
COMPETITION DETAILS
AGE CATEGORIES
Ages 7 - 12 (Primary)
Ages 13 - 18 (Secondary)
TEAM REQUIREMENTS
1 Mentor
2-4 Students
REGISTRATION FEES
SGD $50 per team
SCAN TO REGISTER
BUILD. INNOVATE. MAKE AN IMPACT. BRIBE BICHANGEMAKER
SMARTHON
education
3023 UBI ROAD 3, #02-08/#02-09, SINGAPORE 408663

Competition Introduction

- “The 1st SMARTHON Cup Singapore Smart City AI Challenge” is co-organized by **Smarthon and EP Education**, "SMARTHON Cup 2027" is a global competition that invites students from around the world to tackle real-world challenges.

- It is empowered by Smarthon’s dedicated kits, participants create immersive simulation scenes and deliver impactful, technological scenes.

- In the competition, there are three key tracks. They are **Smart City, Smart Home and Smart Garden**. Participant have to follow the rule to finish their final model.

Competition Mission

- **Master AIOT Technologies:** Hands-on experience with micro:bit, IoT platform operations, and AI integration.
- **Engineer Smart Environments:** Design automated scenes and reliable IoT systems.
- **Solve Real-World Problems:** Enhance STEM knowledge and problem-solving skills
- **Global Exposure:** As part of this global contest, “Singapore Smart City AI Challenge” enables local students to bring their creativity into the international spotlight by showcasing solutions tailored to their community.

Competition Background

- **Competition Name:** The 1st SMARTHON CUP Singapore Smart City AI Challenge
- **"SMARTHON Cup 2027"** global competition for students worldwide.
- **Organizers**: Co-organized by EP Education and Smarthon Limited.
- **Grand Final Date:** 14/4/2027

Competition Background

- **Core Technologies**: Powered by micro:bit, AI, IoT, and Smarthon's dedicated Kits.
- **Key Themes**:
  - Smart City, Smart Home, and Smart Garden.
- **Objectives**:
  - Enhance STEM knowledge and problem-solving skills by building immersive simulation scenes and impactful technological solutions.
- **Singapore Smart City AI Challenge**:
  - A local contest enabling students to showcase community-tailored solutions internationally, exchange ideas, and broaden global horizons.

SMARTHON CUP 2027

- The Smarthon Cup is an international STEM competition for students, where they apply micro:bit and AI & IoT technology to build innovative solutions for smart cities, smart homes and a greener future.

- This creates a vibrant platform for participants worldwide to **exchange ideas, spark inspiration, and broaden their global horizons**.

- You will compete with **Hong Kong, China, Dubai, UK, Canada** team in Smarthon community.



Schedule & Timeline

Timeline	Schedule
Sep 21, 2026	Publicity Launch & Registrations Open
Nov 06, 2026	Competition Briefing and Workshop (Smarthon)
Dec 21, 2026	Competition Briefing and Workshop (EP Education)
Jan 15, 2027	Registration Deadline
Feb, 2027	Training Workshops
Apr 14, 2027	**Grand Finals & Award Ceremony (FINALS)***
July, 2027	International Competition

Theme Tracks

1. Smart City
2. Smart Home
3. Smart Garden



2. Categories & Team Rules

Categories

- Smarthon Cup Smart City AI Challenge 2026 (Primary)
  (Ages 7–12)

- Smarthon Cup Smart City AI Challenge 2026 (Secondary)
  (Ages 13–18)

Team Rules

1. The team must be joined by school or organization (Centre)

2. Each team consists of 1 mentor and 2–4 students

3. Mentor age must be older than 18. He/she is Primary contact and on-site team leader

4. Each team is required to select at least 1 theme track.

Remarks:
Registration is only accepted through schools or authorized organizations. Student or parent direct registration is not allowed.

Team Rules

5. Entries must be completed personally by the students.

6. All entries must be original works. Plagiarism is prohibited.

Registration fee

- SGD$50/ team



How to register?

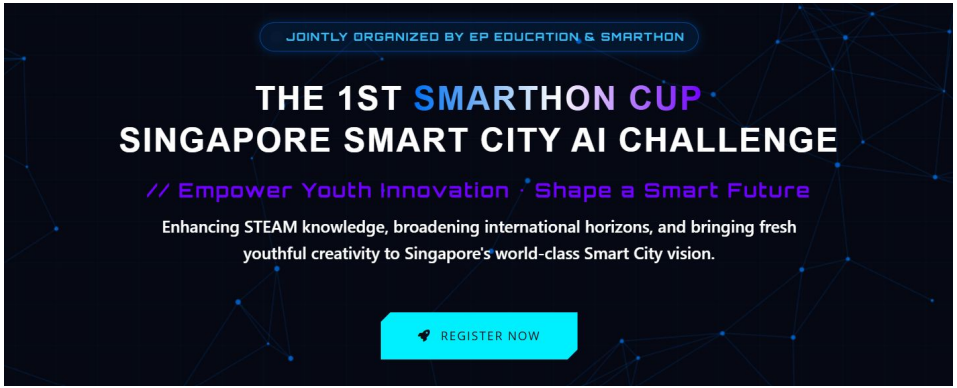
- https://docs.google.com/forms/d/16kZ9ZMkFMpr0O8bmYfx8ilEOZfRev9r-mJRLa-JaMPc/preview

- Deadline: 15/1/2027



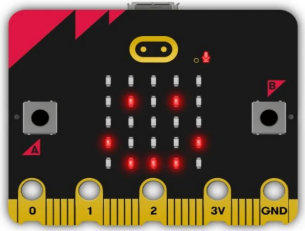
How to register?

https://smarthon.cc/singapore-smarthon-cup-2026/



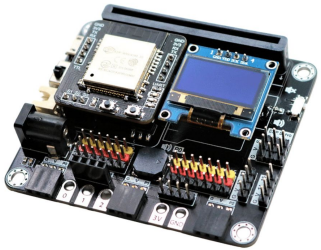
3. General Hardware Requirement

Hardware Requirement



Participating teams must prepare the following equipment:

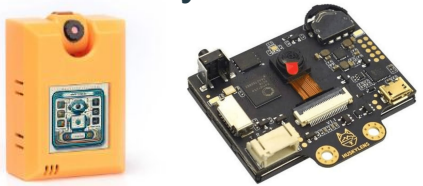
1. Micro:bit (Required)
    - The programmable main controller of your project, with built-in LED display, buttons and sensors.
2. IoT:bit (Required)
    - Wi-Fi expansion board for micro:bit. Connect sensors and actuators without soldering and send data to the interne



Hardware Requirement



3. Smarthon AIoT Kit (Competition Kit)
    - Sensors, LED modules, a servo, and various structural elements for building interactive AIoT and smart application projects.
    - You have to use at least 4 modules inside smarthon kit
4. AI Camera (Optional)
    - The common camera module like kittenbot KOL and huskylens etc



Hardware Requirement

5. AI Voice module(Optional)
    - Adds voice control: recognise spoken commands and let your project respond to them.



General Power & Safety Regulations

1. Systems must operate on low, safe voltages (5V/USB power).
2. Mains electricity (110V/220V) and hazardous chemicals are strictly prohibited.
3. All wiring must be safely routed, insulated and neatly organized.
4. Sharp edges must be smoothed or guarded to ensure safety during evaluation.

For Garden:

- Systems must operate on low, safe voltages (under 12V DC).
- Keep water tanks at least 5 cm away from the main board (micro:bit / IoT:bit) and ensure proper splash-proof protection is in place.

4. Scoring Criteria & Submission Requirement

Scoring Criteria

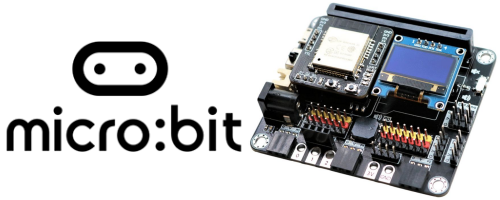
Evaluation Criteria	Weight	Assessment Details & Technical Requirements
Track Theme	35%	● According to the requirement of track theme
Innovative Design / Content Concept	15%	● Innovation of topics solving real-world urban or traffic problems. ● Integration of environmental protection concepts (e.g., carbon reduction, energy saving) with smart technology. ● Creative use of corrugated cardboard, wooden boards, or recycled materials to construct themed scenes and custom mechanisms.
Craftsmanship & Construction Quality	15%	● Structural stability, completeness, and overall aesthetic quality of the physical model. ● Neatness of circuit wiring (e.g., using cable ties to organize connections on the IoT:bit expansion board). ● Strict compliance with A2 Size space limits, circuit fool-proofing, and safe edge handling.
Applied Smart AI Technology	10%	● Application of AI vision recognition (e.g., training models to recognize license plates, vehicle types, smart tags, or gestures). ● Application of AI voice recognition and voice-controlled interaction. ● Deep integration of AI technologies with IoT modules (e.g., uploading data to ThingSpeak cloud).

Scoring Criteria

Evaluation Criteria	Weight	Assessment Details & Technical Requirements
Technical Video Report / Presentation Board	10%	● Completeness and clarity of preliminary submissions (summary, architecture diagram, 5-minute video). ● Professionalism of programming logic flowcharts and system architecture logic.
On-Site Technical Defense	10%	● Time management and presentation delivery during the 7-minute live presentation. ● Professional accuracy during the 2–5 minute Q&A defense on technical details (e.g., programming logic, handling sensor data anomalies). ● Division of labor and teamwork among team members.
Human-Computer Interaction (HCI)	5%	● Smoothness of the system feedback mechanism and overall user experience. ● Multi-sensory interactive design (combining WS2812 RGB LED strips, traffic lights, OLED screens, or buzzer sound-and-light feedback).

Finals Submission & Hardware Guidelines

- Model Size:
  - Max footprint A2 Size (420 x 594 mm),
  - Max height 500 mm
- Core Controllers:
  - BBC micro:bit & Smarthon IoT:bit (ESP32)
- Materials:
  - Custom/eco-friendly materials allowed
  - Including 3D printing, cardboard, wood, LEGO
- On-Site Presentation:
  - Max 7-min live presentation
  - 2 to 5-min Q&A defense



For every track, the submission depends

Project Overview:

- Max 500 words

Design Artifacts:

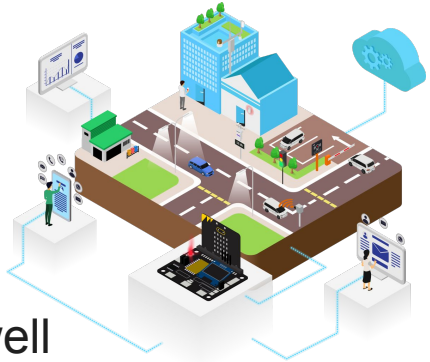
- Concept artwork & system architecture diagram

Video Report:

- 5-minute project introduction video

Track 1: Smart City

Smart City Mission



Smart City Singapore

- **Description & Challenge Focus:** Make city with well designed map by using suitable IoT technique and AI to build a most systematic city

- **Required Kit:** Smarthon Smart City IoT Starter Kit



Smart City IoT Starter Kit

1. Smarthon IoT:bit
2. Raindrop sensor
3. Traffic Light
4. Ultrasonic Distance Sensor
5. White LED
6. Multi-Colour LED (WS2812)
7. Light Sensor
8. Noise sensor
9. PIR Motion Sensor
10. Temperature and Humidity sensor (DHT11)
11. 180° Servo



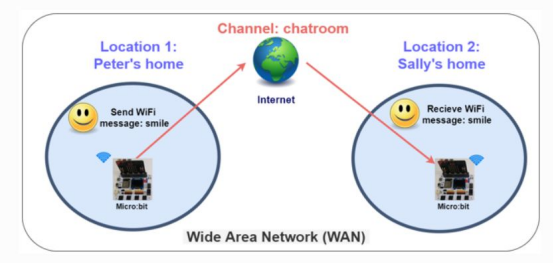
Additional Component

- Smart Traffic Add-On Pack
  - Laser Sender
  - Laser Receiver
  - 4-digit Screen
  - IR Sensor

- Smart Environment Add-On Pack
  - Air Quality Sensor
  - PH Sensor

Main Technique involved

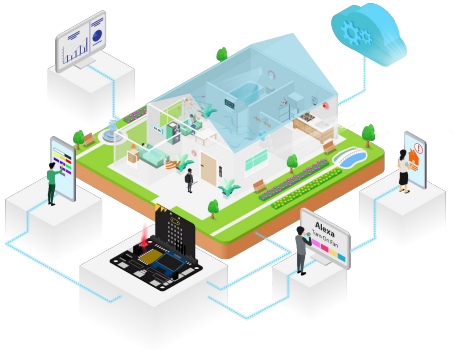
1. Object to Object Communication
2. Cloud Control (Internet Time, weather Information)
3. Any other AI possibility





Track 2: Smart Home

Smart Home Mission



Smart Home

- **Description & Challenge Focus:** Make the most intelligent with siri and sound control with app and network time for the project.

- **Required Kit:** Smarthon Smart Home IoT Maker Kit

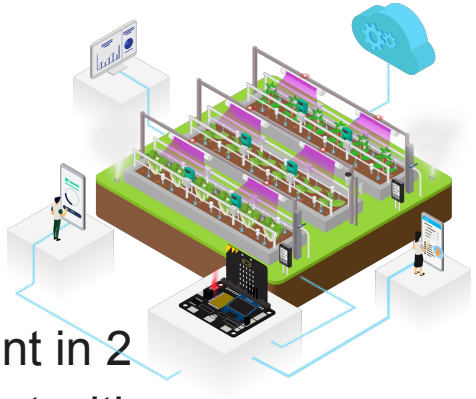


Main Technique involved

1. Network Time protocol
2. Voice Control using voice assistant
3. App Inventor
4. Any other AI possibility

Track 3: Smart & Green Garden

Smart Garden Mission



Smart Garden

- **Description & Challenge Focus:** Grow your plant in 2 months with the kit and present the grow log report with technology

- **Required Kit:** Smarthon Garden AIoT Farmer Kit



Main Technique involved

1. Blynk Platform Integration
2. App Inventor
3. n8n Integration
4. Any other AI possibility

8. Track Model Requirement

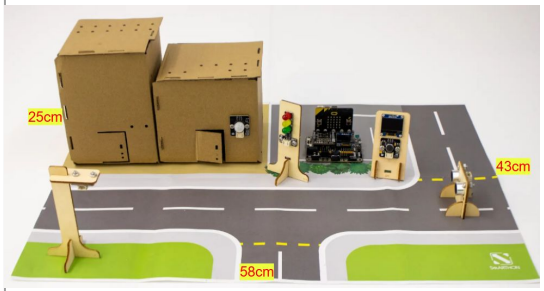
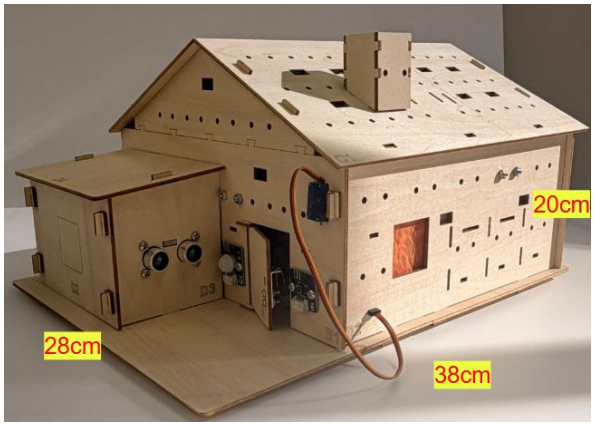
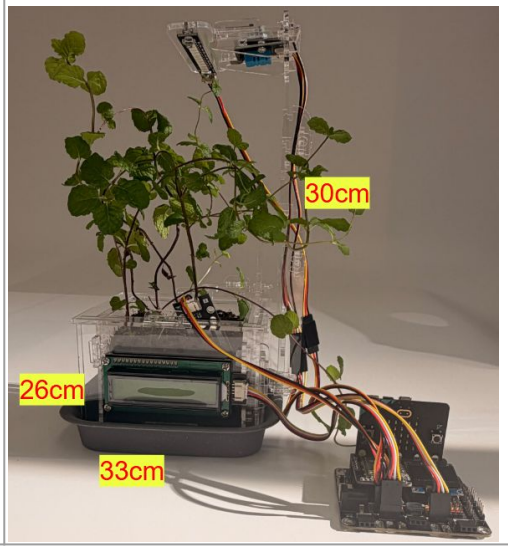
Dimensional Guidelines

City/Home/Garden
• The entire physical model must fit within a footprint of A2 size (420 x 594 mm) with a maximum height limit of 500 mm. • Teams are strongly encouraged to incorporate eco-friendly, sustainable and/or custom-fabricated materials in their builds.

Material Guidelines (Construction materials)

1. Plastics: PLA, ABS or standard 3D-printing filaments.
2. Wood: Lightweight timber boards, basswood, laser-cut wood or bamboo.
3. Paper & Cardboard: Cardboard, cardstock, paper pulp or paper model templates supplied with the kit.
4. Others: LEGO components, metal or plastic brackets and basic structural fasteners.

Dimensional of original model

City	Home	Garden
		

9. Awards & Recognition

Awards & Recognition

- Top Honors :
    1. Gold
    2. Silver
    3. Bronze

Awards & Recognition

- Special Recognition Awards :
  - Best AI Innovation Award
  - Best Smart Nation Solution Award
  - Best Future Concept Award
  - Best Sustainable City Award
  - Best Engineering Design Award
  - Best Presentation Award
  - Best Team Collaboration Award
  - Best School Participation Award

Series of Workshop

No	Workshop	Duration	Join	Purpose
1	Introductory Workshop	2	Mandatory to join	-Product Introduction/Structure -Build 1-2 cases of the product -How to build a scene -Hardware feature and operation -Model operation -Learn basic wifi, and thingspeak -Learn AI n8n automation (Understand the concept)
2	Theme Track Workshop*3	1.5	Mandatory to join if joined that Track	Know the detail or rules of each track, finish the basic full set of final modal
3	Training workshop – IOT	3	Supplementary to join	Learn IOT Technique
4	Training workshop - AI (voice/camera)	3	Supplementary to join	Learn AI Technique

10. Q&A

END