

# ASIA MATH ENGINEERING CHALLENGE

Decorative icons include two gears on the left, a protractor on the left, a ruler on the right, and a triangle on the right.

16 June 2020 to 20 June 2020


Building a smart nation by being tech-literate



# About AMEC

## Introduction

AMEC 2020 aims to foster a new generation of problem-solvers equipped with the necessary skillsets to provide technology-based solutions to everyday problems. Through this conference, participants will be exposed to the forefront of today's technology, including microcontrollers.



After a series of lessons, AMEC will culminate in a project showcase, wherein teams will be challenged to present a solution to a real-world problem to our judges. They must conceptualise their solution in the form of an original prototype contraption. With the aid of a company of experts, participants will be mentored on the planning, designing and programming of their solution from inception till execution. In addition to their prototype, teams will also have to prepare a presentation board.

## Requirements

As this is a programming related conference, all students will have to bring a **functioning laptop** with them.

## Age Groups

Junior, 9 to 11 years old  
Senior, 12 to 17 years old

# Benefits for students

- Understand the concept of a Smart Nation
- Build up problem-solving skills
- Learn about robotics and microcontroller programming
- Appreciate diversity





# Activities

## Arduino Robotics/ BBC Micro:bit Workshop cum Problem-Solution Competition



In this signature activity of AMEC, participants will learn the fundamentals of coding and electronics. By employing a specially designed Plug & Play kit, they will innovate an original solution in the spirit of tackling a problem relevant to this year's theme, whilst guided by professionals. Participants will leave with not only a greater awareness of the issues facing today's world but will also be equipped with the necessary skills to tackle them head-on.

## 3D Modelling & Augmented Reality (AR) Workshop



This interactive, hands-on workshop will allow participants to exercise their creativity through building a 3D model from scratch, then experience their very own creations in real life through augmented reality (AR) - a relatively new technology that has a large potential in the future.

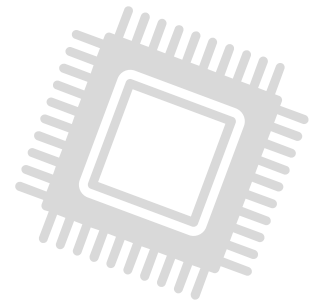
## Singapore Science Centre Visit

Students will participate in a Discovery Learning Journey visiting the different exhibitions. They will be equipped with more knowledge and leave with more ideas for their own prototype.



# Brief Itinerary

\*Itinerary is subject to changes



## DAY 1: 16 JUNE

0900	Changi Airport	Arrival & Airport Pick-up
1700	MDIS	Ice Breaking & Teachers' Session
1900	MDIS	Dinner
2000	MDIS	Wrap-up Session & YA Dance
2100	In transit	Return to accommodation



## DAY 2: 17 JUNE

0800	Accommodation	Breakfast
1000	Science Centre	Singapore Science Centre Visit
1230	MDIS	Lunch
1330	MDIS	3D Modelling & Augmented Reality; Project Orientation
1730	MDIS	Dinner
1830	Gardens by the Bay & Merlion Park	Night City Tour
2100	In transit	Return to accommodation



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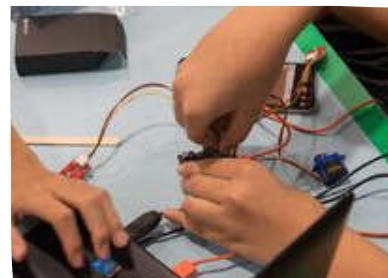
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DAY 3: **18** JUNE



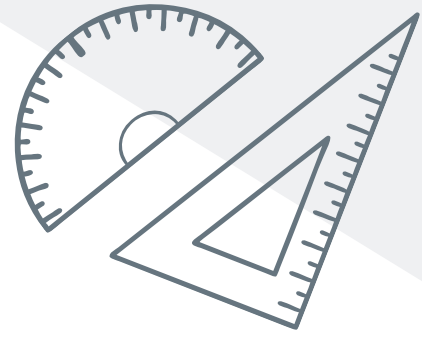
0700	Accommodation	Breakfast
0900	MDIS	AMEC Junior: Introduction to BBC Micro:bit Introduction to Makecode Programming Introduction to Electronics Part 1  AMEC Senior: Introduction to Arduino Microcontroller Introduction to Arduino IDE (text based programming) Introduction to Electronics Part 1
1200	MDIS	Lunch
1300	MDIS	AMEC Junior & Senior: Introduction to Electronics Part 2  Teachers' Session
1430	MDIS	AMEC Junior & Senior: Brainstorming Session  Teachers' Session
1700	MDIS	Dinner
1800	In transit	Return to accommodation





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DAY 4: **19** JUNE

0700	Accommodation	Breakfast
0900	MDIS	Project Prototyping: Choose a Problem, Design a Solution, Build a Prototype  Final Preparations for Project Presentation
1200	MDIS	Lunch
1300	MDIS	Project Presentation
1500	MDIS	Prize Presentation & Photo Taking
1700	MDIS	Dinner
1800	MDIS	Cultural Performance & Party Night
2100	In transit	Return to accommodation



DAY 5: **20** JUNE



0800	Accommodation	Breakfast
0900	In transit; Changi Airport	Check-out of accommodation & Transfer to airport