TINKER CLASS

HI THERE!

Are you an educator? If so, we love to share how we can help prepare your students for the future by equipping them with technology and 21st century skills in our tinkering and coding programmes!

We are engineers and educators who tinker, build and teach coding and making!

We have built:

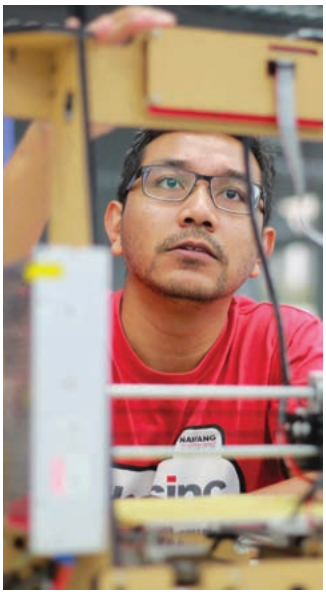
- GuestDay, a guest registration service
- Get Hacking, a platform for learning and sharing
- ArcLab, a nano-learning platform
- Interactive displays for Maker Faire Singapore, Young Makers' Fiesta, Tech Saturday, Venice Biennale, Torch Up! Project

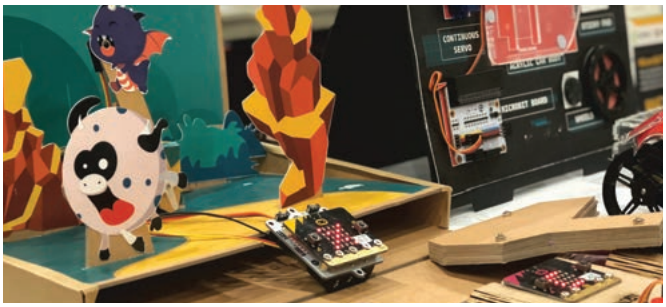
Our interactive light display at the Singapore Pavilion of the Venice Biennale

Our curriculum is designed to engage learners. We design our activities to be hands-on, highly participative, and with tangible outcomes.

OUR EDUCATION PROGRAMMES

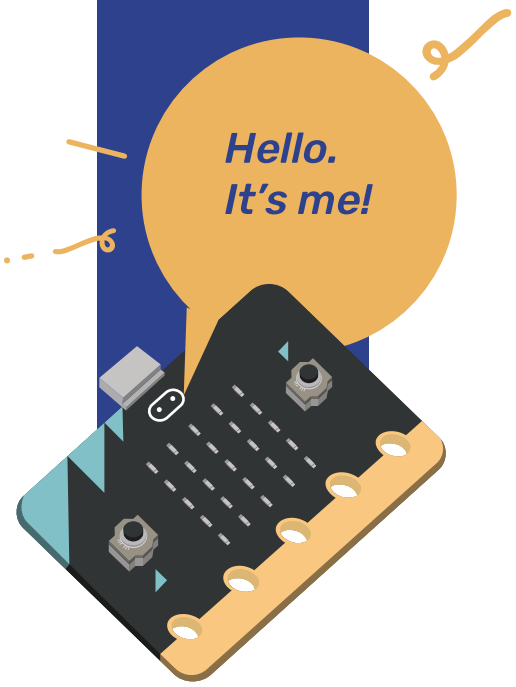
- Digital Making with Micro:bit
- #BeyondCode with Sphero
- Mobile App Development with Thunkable
- AI Explorations with Python





PLATFORM

DIGITAL MAKING WITH MICRO:BIT!



What is micro:bit?

Micro:bit is a pocket-sized programmable microcontroller used to prototype electronics projects from robotics to smart home prototypes! Great for innovators of all ages!

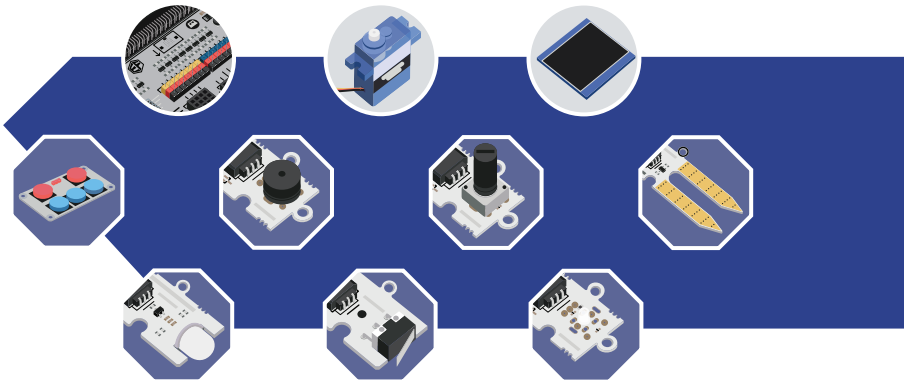
Why Micro:bit?

- Easy to use
- Cost effective
- Durable
- Designed for education

MADE MORE POWERFUL WITH HARDWARE KIT

What's included?

- Breakout Board
- Mini Servo
- OLED Display
- ADKeyboard
- Passive Buzzer
- Analog Rotation
- Soil Moisture Sensor
- PIR Motion Sensor
- Crash Sensor
- 3 x LED Colour LED
- LED Strip
- Crocodile Clips



CURRICULUM

Students are introduced to the foundation of Computer Science (CS) in engaging project-based lessons.

SKILLS

- Algorithm Design
- Pattern Recognition
- Decomposition
- Problem-Solving
- Abstraction

CONCEPTS COVERED

- Variables
- Conditionals
- Loops
- Functions

WHAT'S INCLUDED

Professional Development for Educators
Teacher's Guide (Including Lesson Plans)
Slides & Students' Handouts
Ongoing Tech Support

Hardware
- Micro:bit Part Library

Development Environment
- MakeCode
- Swift Playground
- microPython

PROJECTS

- Step Counter
- Burglar Alarm
- Reaction Game
- Dice
- Monster Robot
- Scissors, Paper, Stone Game
- Cloud Lamp & many more!

DURATION

Module 01 - 8 hrs
Module 02 - 8hrs

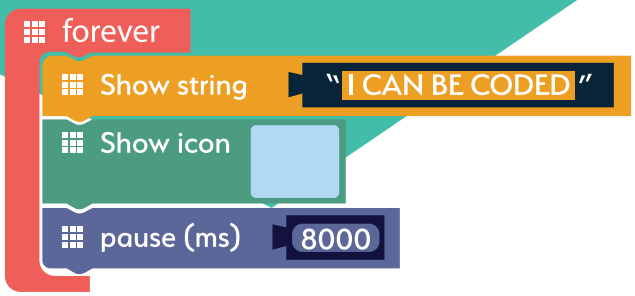
SUITABLE AGE

9 years old & above!

MAKECODE

DEVELOPMENT ENVIRONMENT

With Microsoft's powerful web-based MakeCode interface, using block based programming to control the micro:bit is really easy. No software installation required!



The block based approach makes it easy for students - no need to remember function names or coding syntax, encouraging exploration and experimentation!

SWIFT PLAYGROUNDS

DEVELOPMENT ENVIRONMENT

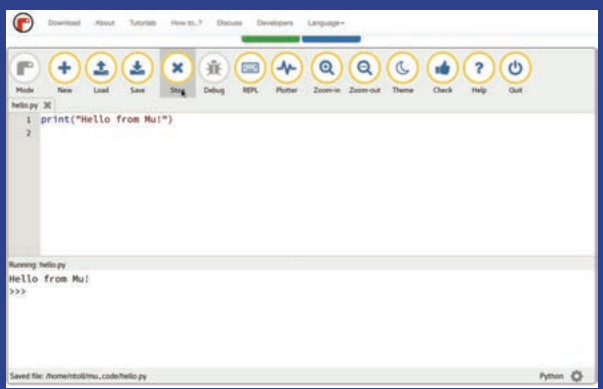
Swift Playgrounds is an app for the iPad that helps teach enthusiasts how to code in the Swift language while having fun with the micro:bit! Inside the app, digital books allow you interact with the micro:bit wirelessly, allowing individuals to easily test out their code and immediately see the results on the micro:bit.

MICROPYTHON

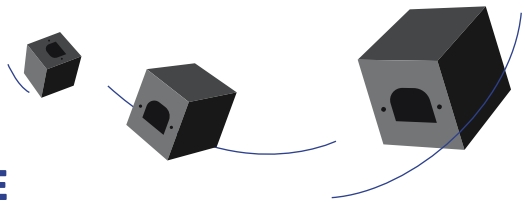
DEVELOPMENT ENVIRONMENT

An alternative development environment for our Digital Making with Micro:bit programme is Python. It is especially suitable for older students. Python is one of the most popular languages taught in universities as a first programming language as it is easy to pick up.

PHYSICAL COMPUTING WITH MICRO:BIT



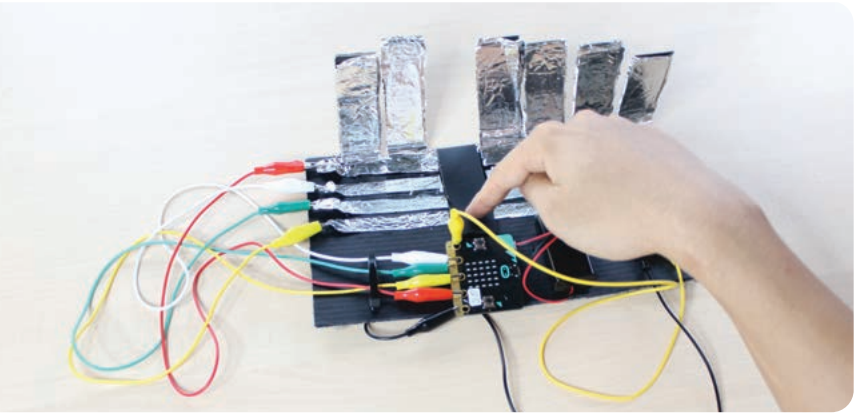
PROJECTS



DICE

Build a digital dice as you learn to use the accelerometer module on the micro:bit, event handlers and the random number generator.

DIGITAL PIANO



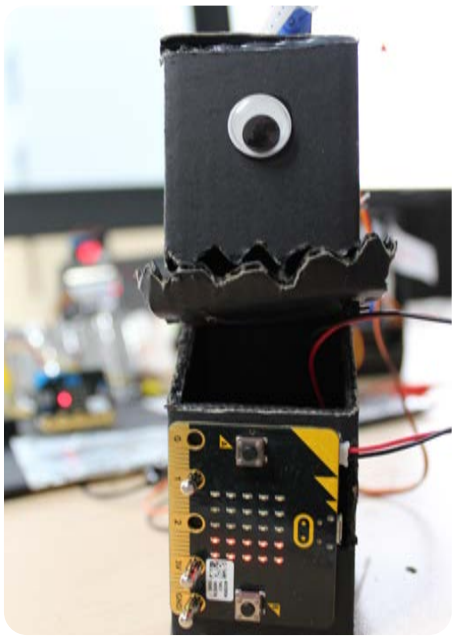
Build and code a digital piano with crocodile clips, cardboard and aluminum foil. Learn to use the music blocks to create tunes.

BURGLAR ALARM

Explore the servo motor and PIR motion sensor to build a simple, yet functional burglar alarm.

Learn to use the conditionals code structure to write event-triggered code.

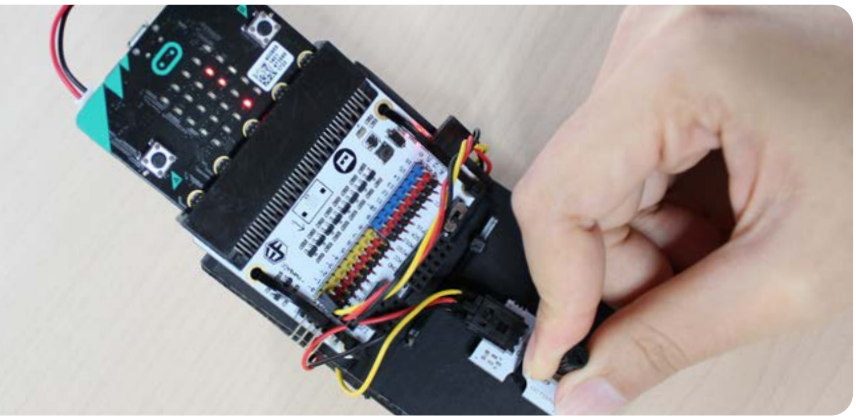
PROJECTS



MONSTER ROBOT

The monster robot project requires more mechanical engineering skills. Use cardboard and twine to create a contraption that moves and interacts with you.

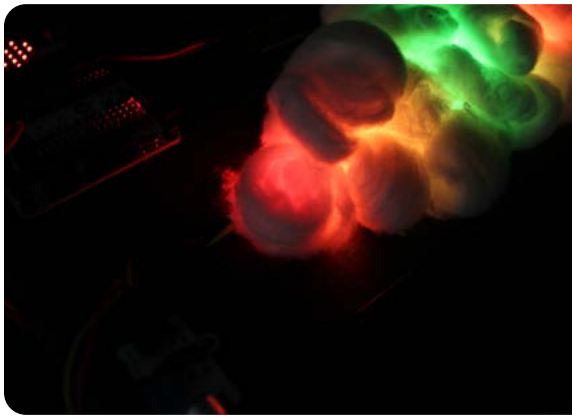
CATCH !T IF YOU CAN!

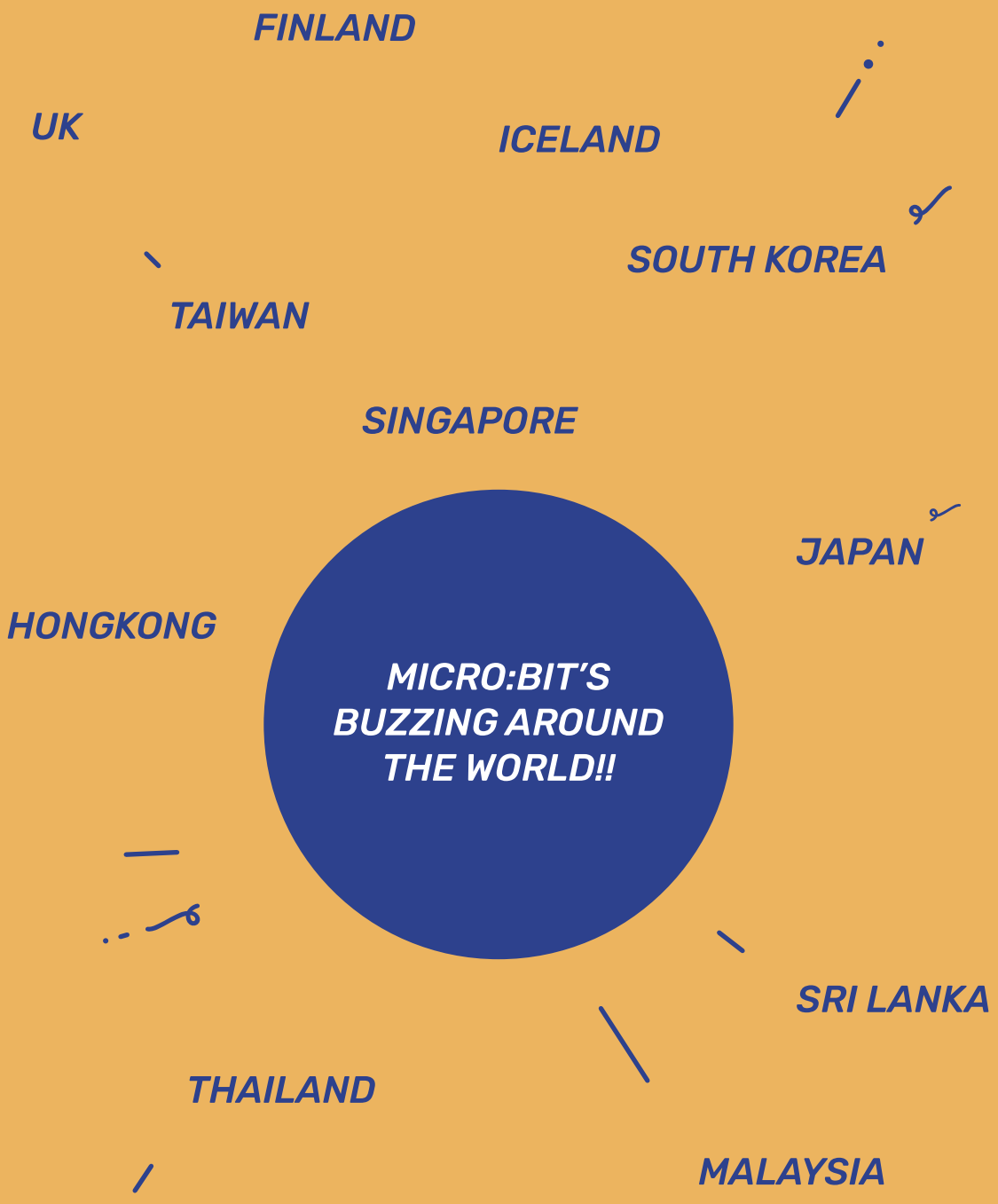


This complex game requires students to use computational thinking skills to implement from scratch. Through applying skills of decomposition and pattern recognition, they will finally be rewarded with a fun game to show off.

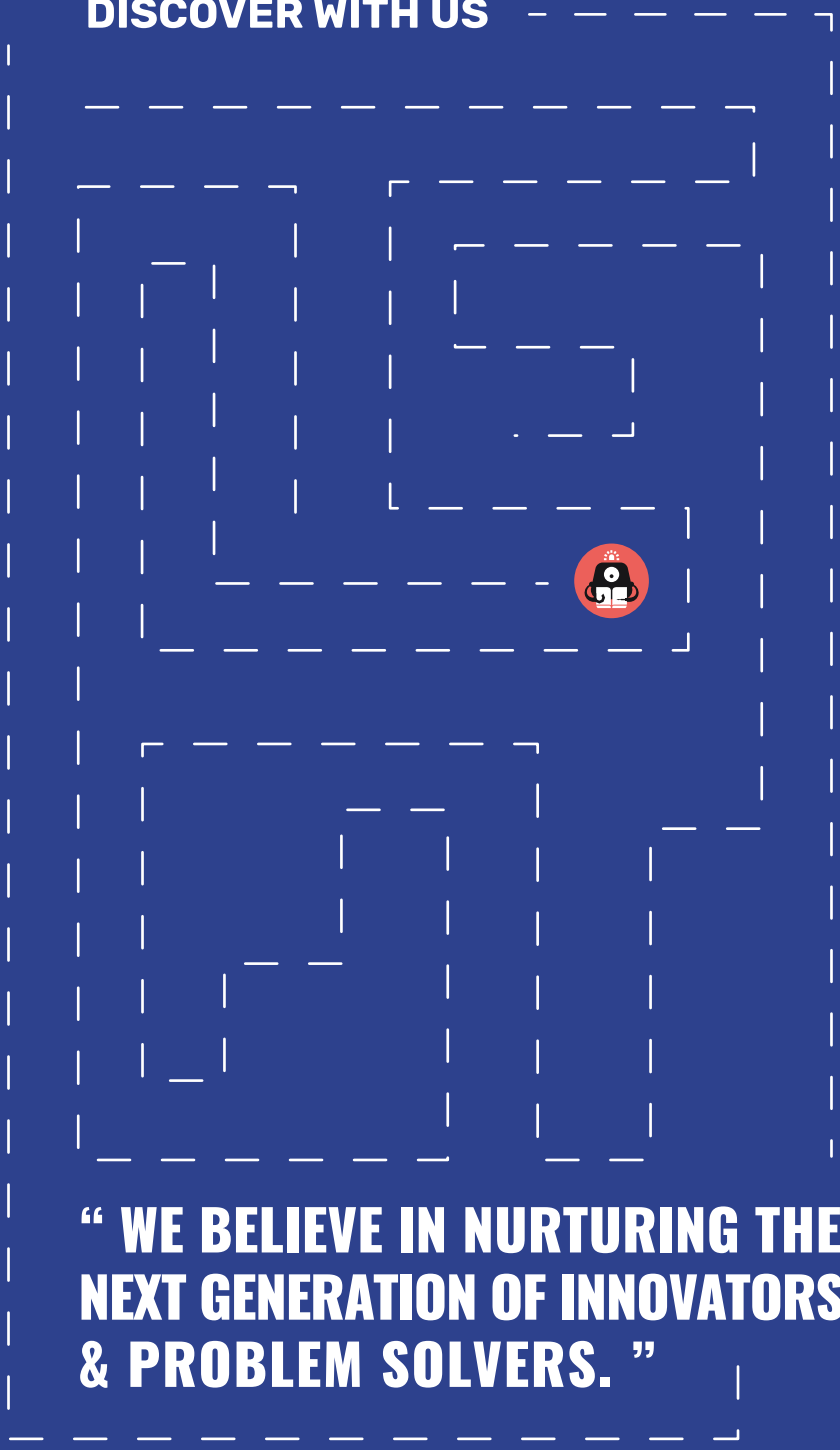
CLOUD LAMP

The programmable RGB LED strip can be used to create visually attractive projects. Here, students will learn to control the LED strip with code to create a cloud lamp project.




FINLAND
UK
ICELAND
SOUTH KOREA
TAIWAN
SINGAPORE
JAPAN
HONGKONG
MICRO:BIT'S BUZZING AROUND THE WORLD!!
SRI LANKA
THAILAND
MALAYSIA

DISCOVER WITH US



“ WE BELIEVE IN NURTURING THE NEXT GENERATION OF INNOVATORS & PROBLEM SOLVERS. ”

PLATFORM

#BEYONDCODE WITH SPHERO

INTRODUCING BOLT!

Equipped with an 8 x 8 LED matrix and advanced sensors, the Sphero BOLT provides for collaborative STEAM activities with robotics and technology!

DEVELOPMENT ENVIRONMENT

BLOCKS

Beginner coders can utilize the Scratch block-based programming interface.

TEXT

Pros can use Javascript and write text programs like a boss!

**Works with Chrome, Android, iOS, macOS and Windows*

CURRICULUM

Get started with movement, light, sound activities, with the Sphero BOLT. Through STEAM-based activities that will stimulate students' creativitiy, they will learn foundational Computer Science (CS) concepts.

SKILLS

- STEAM Skills
- Problem Solving
- Creativity
- Robotics

CONCEPTS COVERED

- Controls
- Comparators
- Events
- Variables
- Functions

WHAT'S INCLUDED

Professional Development for Educators
Teacher's Guide (Including Lesson Plans)
Slides & Students' Handouts
Ongoing Tech Support

Hardware
- Sphero Bolt

Development Environment
- Scratch Block Based Programming Interface
- JavaScript

PROJECTS

- Maze Mayhem
- Magic 8 - Ball
- Spinning Top
- Dance Party
- Tractor Pull
- Radio
- Infection & Many more!

DURATION

Module 01 - 8 hrs
Module 02 - 8hrs

SUITABLE AGE

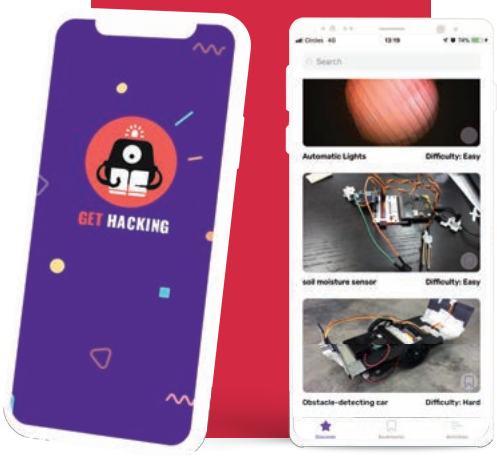
9 years old & above!

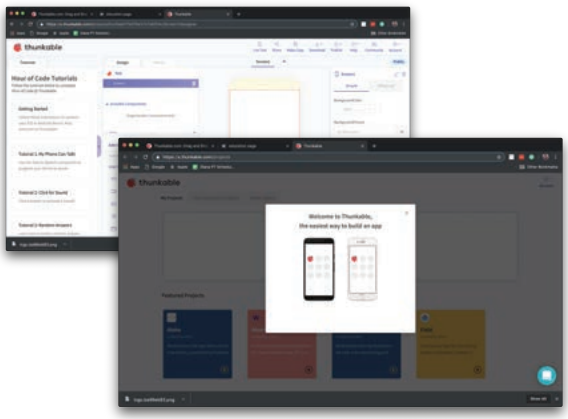
PLATFORM

MOBILE DEVELOPMENT WITH THUNKABLE

Mobile Development is an exciting field for many - it's the possibility of being able to build something that can be used on their own phones (or on their friends' and families').

However, learning to code with tradition mobile app frameworks is challenging.





SO.. WHAT IS THUNKABLE?

Thunkable, based on MIT App Inventor, is a beginner-friendly programming interface to create mobile apps for the Android and iOS.

HOW DOES IT WORK?

Using a drag-and-drop block-based programming language, users can design and implement fully functional apps installable on actual Android and iOS devices.

CURRICULUM

Students will go through the complete development cycle of designing and coding functional apps.

SKILLS

- Problem-Solving
- User Interface & User Experience Design
- Decomposition
- Prototyping

CONCEPTS COVERED

- Variables
- Conditionals
- Functions
- Events
- Layouts

WHAT'S INCLUDED

Professional Development for Educators
Teacher's Guide (Including Lesson Plans)
Slides & Students' Handouts
Ongoing Tech Support

Development Environment
- Thunkable

PROJECTS

- Hello World App
- Button Tapping Game App
- Interactive Quiz App
- Translator App & many more!

DURATION

Module 01 - 8 hrs
Module 02 - 8hrs

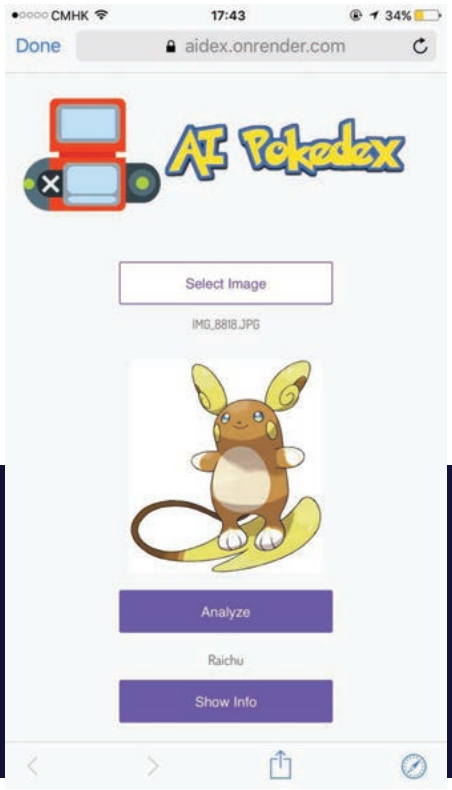
SUITABLE AGE

9 years old & above!

PLATFORM

AI EXPLORATIONS IN PYTHON

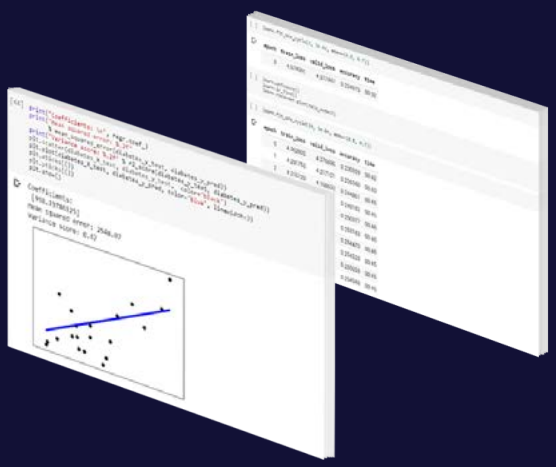
Be introduced to coding in Python in the domain of Artificial Intelligence (AI). Explore machine learning algorithms, understand the underpinnings and mechanisms by which we are able to train machines to perform tasks such as image recognition, text analysis and predictions.



PROTOTYPE WITH MACHINE LEARNING

The course leverages on high-level machine learning libraries such as fast.ai and scikit-learn to enable participants to quickly prototype machine learning-based projects.

Through the hands-on coding, they gain a deeper appreciation of the considerations for building machine learning projects. Combined with discussions on the ethics of AI, participants will be able to discern the potential, limitations and impact of machine learning in our future.



CURRICULUM

Students are introduced to the fundamental Machine Learning (ML) technologies and algorithms with hands-on projects.

SKILLS

- Python
- fast.ai
- Scikit-learn

CONCEPTS COVERED

- AI Ethics
- Regression
- Text Analysis
- Image Classification

WHAT'S INCLUDED

Professional Development for Educators
Teacher's Guide (Including Lesson Plans)
Slides & Students' Handouts
Ongoing Tech Support

Development Environment
- Python
- Jupyter Notebook

PROJECTS

- Sales Prediction
- Pokemon Classifier
- Sentiment Analysis

& many more!

DURATION

Module 01 - 8 hrs
Module 02 - 8 hrs
Module 03 - 8 hrs

SUITABLE AGE

13 years old & above!

OUR EXPERIENCE

We have been in technology education since 2012. We love tinkering with new technologies, and have brought many different ones into the classroom, including:

- Micro-controllers such as Arduino and micro:bit
- Robotics such as Sphero Bolt, KIBO, Dash and Dot
- Game development in Scratch, Python and Unity
- Web development in HTML/CSS/JS, React
- Mobile app development in Swift and Thunkable
- Data science and machine learning in Python, pandas, numpy and scikit-learn

OUR BELIEFS

VISION

EVERYONE SHOULD BE EMPOWERED TO ENJOY CREATING WITH TECHNOLOGY.

MISSION

WE AIM TO INSPIRE DELIGHT AND WONDER WITH TECHNOLOGY, BY BECOMING THE BEST EDUCATORS AND CRAFTERS IN THE FIELD.

SKILLS THAT ARE IMPORTANT TO US: COMMUNICATIONS, COLLABORATIONS CRITICAL & INVENTING THINKING

We love to collaborate and extend our expertise, to reach out and touch the lives of more people.

WE ARE LEADING INNOVATION IN TECHNOLOGY EDUCATION!

We have worked with the Info-communications Media Development Authority (IMDA) of Singapore to enter schools as a:

- Pioneer vendor for the Infocomm Learning Roadmap programme
- Pioneer vendor for Code For Fun Enrichment programme
- Pioneer industry partner for the Digital Maker programme
- Pioneer training partner for the Swift Coding Club in Singapore (initiative by IMDA & Apple)
- PlayMaker programme vendor bringing technology to preschools

---

- Certified member of Apple Consultants Network

Who's learned and made with us

SEPHORA NGEE ANN POLYTECHNIC CEDAR PRIMARY SCHOOL Temasek POLYTECHNIC DBS

TAKE A LOOK AT OUR VERY OWN WELL CRAFTED HANDMADE KITS!

Tinkerkit

Start your Digital Maker journey with the micro:bit and a variety of easy-to-use components! This kit comes with our custom Breakout Board and a wide variety of modules to help you to create dozens of amazing digital maker projects!

Game:Bit Kit

Get transported back to the 90s with our handheld micro:bit console. Code your own games on this 5x5 LED screen that's also a game controller! Learn how to construct games in tight spaces, bring it around and show it off to your friends!

Krazy Kar Kit

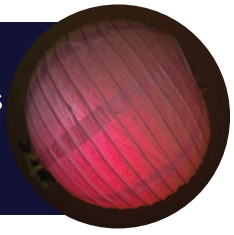
Make your very own micro:bit Krazy Kar! It's krazy because it can only move one wheel at a time, which we think is part of its appeal.

Shoot'Em Up Kit

Shoot down dragons and save your cows in this table-top shooter arcade. Create your own story and switch it up with customisable targets and obstacles!

Bling Blink Kit

Create your very own Automatic Rainbow Lamp to light up in dark rooms and a Bling Blink Bracelet - wristband's rainbow display! Finally, build yourself a Forget Me Not Pillbox, an alarm to remind you to get your daily vitamins in!



WE ALSO PROUDLY CARRY A WIDE VARIETY OF TECH TOYS!

Dash

Kids can watch their virtual coding turn into tangible learning experiences in real time as Dash, with its performance and multiple sensors, interacts with and responds to its surroundings.

littleBits

littleBits makes it easy for both teachers and students to engage in STEAM by using a universal, 21st-century language: electronic building blocks.

OzoBot

Award-winning robots for the next generation of coders. Evo and Bit robots are used in over 10,000 classrooms to teach kids to program and inspire creativity. Code them easily by drawing lines and using stickers.

Circuit Stickers

Circuit stickers blend circuit building and programming with arts and crafts. It's a friendly way to learn, design and create your own electronics.

Circuit Scribe

Explore conductivity & touch-sensitive circuits, and build an understanding of inputs, outputs and signal processing. Dive in a little deeper to learn about light sensing, drawing and timed circuits, piezoelectric materials, and more!

WANT TO PREPARE YOUR STUDENTS FOR THE FUTURE?

Find out more on how to bring our coding & tinkering curriculum into your classroom!

www.tinkercademy.com

hello@tinkercademy.com

+65 6917 6920

OUR PARTNERS:

TINKERCADEMY

Singapore

CLASSROOM STEAM EDUCATION

Hong Kong