MELS
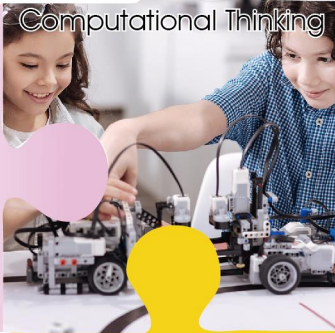
Maths & Higher Order Thinking Skills

STEM

Computational Thinking

Hands-Skills

MELS Centre
(Ages: 2–15)

Lesson contents

44 sounds

There are 24 consonant sounds and 20 vowel sounds in the English language.

/p/	/b/	/k/	/d/	/f/
/g/	/h/	/r/	/l/	/t/
/dʒ/	/n/	/m/	/θ/	/w/
/s/	/j/	/z/	/v/	
/ŋ/	/tʃ/	/ʃ/	/ʒ/	/ð/

/æ/	/e/	/i/	/ɒ/ /ʌ/
/eɪ/	/iː/	/aɪ/	/əʊ/
/uː/	/ʊ/	/ɔː/	/ɑː/
/ɜː/	/aʊ/	/ɔɪ/	/eə/
/ɪə/	/ʊə/	/ə/	

24 Consonant sounds   20 Vowel sounds

3 levels

The 44 sounds can be divided into 3 levels according to the phonemes.
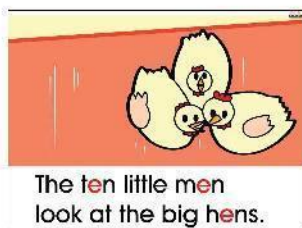
pink

a-z
/æ/ - /z/

blue

blog, flat, clap, romp
(blending sounds)
bell, egg
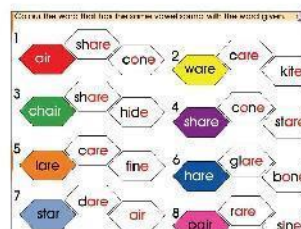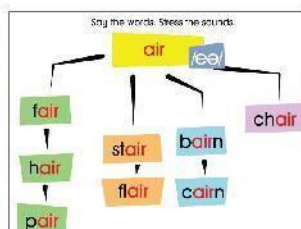(double consonants)
ship, thin, ring, sink
(digraphs)
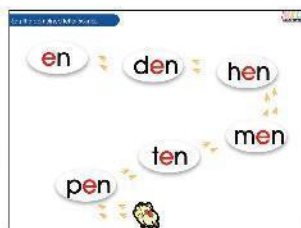
green

/ɪə/ hear, here, heer
/eɪ/ sale, aim, bay
/ɔː/ cork, tall, core

K1   K2   K3

Books preview

The ten little men look at the big hens.

en den hen
ten men
pen

Sound practice
pen
hen ten
red
vet men

Feelings

My loving mum sits me
on a big, big chair.
She combs my hair.
To take me to the fair.
Oh mum, I feel so good.

You really care.
At the fair I stopped to stare
at a mare and a rare hare.

Say the words. Stress the sounds.
air /eə/
fair
hair
pair
stair
flair
bairn
cairn
chair

1 share cone 2 ware care kite
3 share chair hide 4 share cone stare
5 lare care fine 6 hare glare bone
7 dare star air 8 pair rare sine

The app teaching includes real images, video clips, interactive animations and more to aid teaching.

Connect your mobile devices with big display units wirelessly toincrease the interactivities among teachers and learners.

"a" for apple
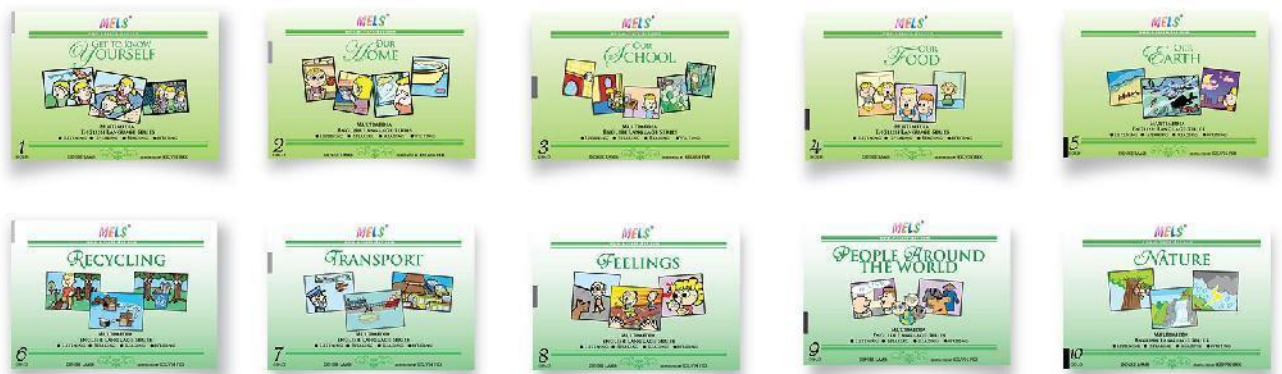"a" for ant
the sound of "a" is aa a

Textbooks

K1

K2

K3

For further information,

Teaching Software

Flash Cards

Monthly Assessment

Teaching Guide

Lesson contents

K1 first half	K1 second half	K2 first half	K2 second half
Get to know "one" Big and small; Tall and short; Many and few	Get to know "six" Breaking down numbers:6; Squence:1-6; Estimation	Numbers:0,1,2 Breaking down numbers:2	Indentify numbers:11,12; Place values (ones and tens)
Get to know "two" shapes(circle;triangle; rectangle)	Get to know "seven" Breaking down numbers:7; Squence:1-7; Estimation:height	Numbers:3 and 4 Breaking down numbers:3 and 4 addition and subtraction	Indentify numbers:13,14; Addition with concept of breaking down numbers
Get to know "three" colours(red,yellow, purple,orange, blue,green)	Get to know "eight" Breaking down numbers:8; Squence:1-8; Estimation:weight	Numbers:5 and 6 Breaking down numbers:5 and 6 addition and subtraction	Indentify numbers:15,16; Subtraction with concept of breaking down numbers
Get to know "four" colours and shapes	Get to know "nine" Breaking down numbers:9; Squence:1-9 Estimation:distance	Numbers:7 and 8 Breaking down numbers:7 and 8 addition and subtraction	Indentify numbers:17,18; Addition with the number
Get to know "five" Breaking down numbers:2-5	Get to know "ten" Breaking down numbers:10; Squence:1-10 Estimation:volume	Numbers:9 and 10 Breaking down numbers:9 and 10 addition and subtraction	Indentify numbers:19,20; Subtraction with the number

K3 first half		K3 second half	
Sequence:1-10; Breaking down numbers 8-10 Addition within 10 (Problem solving); Subtraction within 10 (Problem solving); Sequence:1-20; Breaking down numbers 12-15 Problem solving Addition and Subtraction(20)	Sequence:1-30; time; Problem solving Addition and Subtraction(30) Sequence:1-40; Ones and tens; Problem solving Addition and Subtraction(40) Sequence:1-50; coins; Problem solving Addition and Subtraction(30)	Sequence:1-60; Two-digit addition(no regrouping); Two-digit subtraction (no regrouping); Fraction Sequence:1-70; Two-digit and one -digit addition(regrouping); time; Problem solving (addition with regrouping) Sequence:1-80; Two-digit and one-digit subtraction (regrouping); time; Problem solving (subtraction with regrouping); Calendar	Sequence:1-90; Two-digit and two-digit addition (regrouping); time; Problem solving (addition with regrouping); Introduction to 2-D shapes Sequence:1-100; Finding 3-D shapes; Two-digit and two-digit subtraction (regrouping); time; Problem solving (subtraction with regrouping);

Books preview
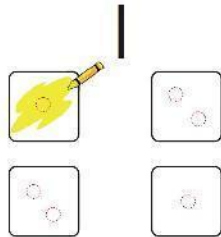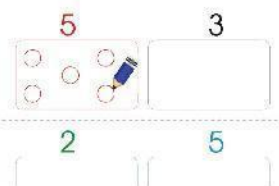

Counting
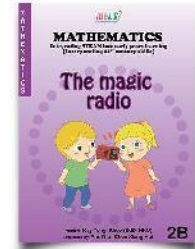

Identify numbers
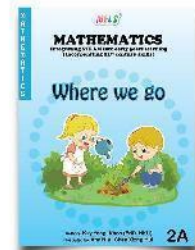

Problem solving

Mathematical concepts

练习（立体图形）

Identify 3-D shapes

Textbooks
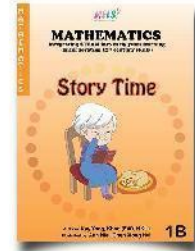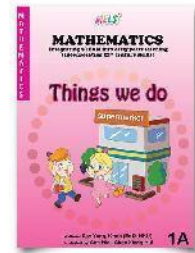
Things we do — 1A

Story Time — 1B

K1

Where we go — 2A

The magic radio — 2B

K2

Mark and his family — 3A

The library — 3B

K3
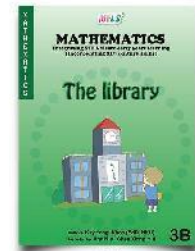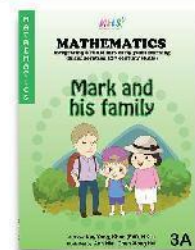
Lesson contents

24 Essential scientific concepts

Help children to "get to know" these concepts by "understanding a story", forming a new mental model with videos and working it out with experiments.

1. Our five senses `A` `F`	1. States of matter `C` `E`	1. Float and sink in water `A`
2. Light and shadow `D` `E`	2. Energy `F`	2. Force `C`
3. Human features `A` `E`	3. Plants `E` `G`	3. Homes of animals `C`
4. Shapes and colours `A` `G`	4. Animal reproduction `E`	4. Magnet `E`
5. Living and non-living things `A` `G`	5. Mixing colours `E`	5. Recycling `C`
6. Healthy diet `A` `D`	6. Food chains `D`	6. Measurement `B`
7. Sound `A` `E`	7. Insects `A`	7. Paper `C`
8. Animal kingdom `A` `F`	8. Electricity `F`	8. People and living things `F`

K1   K2   K3

8 learning objectives

Nurture children to master the 8 learning objectives as below through the provided Science experiments and develop the potential.

`A` Classification	`E` Observation
`B` Measurement	`F` Critical thinking
`C` Prediction	`G` Exploration
`D` Problem solving	`H` Discussion

4 types of **skills**   4 types of **behaviour**

Books preview

Textbooks

SCIENCE 1A

SCIENCE 1B

K1

SCIENCE 2A

SCIENCE 2B

K2

SCIENCE 3A

SCIENCE 3B

K3

Kandungan Pembelajaran
A-Z & 25 Tema Pembelajaran

Memperkembangkan komunikasi lisan, asas literasi dan memupuk keupayaan memahami, mengungkap dan menghargai Bahasa indah melalui bercerita dan berpuisi.

A-Z

Mendengar dan menyebut abjad
Menyebut dan membunyikan huruf vocal
Membaca bahan bacaan mudah

Membunyikan suku kata terbuka (KV+KV)

Membaca perkataan dengan suku kata terbuka
Membaca frasa yang mengandungi perkataan dengan suku kata terbuka
Membaca dan menceritakan semula daripada bahan bacaan yang dibaca

Membunyikan suku kata terbuka/tertutup

terbuka/tertutup
(KVK, V+KV, V+KVK, KV+KVK, KVK+KV; KVK+KVK; diftong)
Membaca dan memahami ayat mudah dengan sebutan yang betul
Membaca dan menceritakan semula daripada bahan bacaan yang dibaca

Textbooks & Workbooks

1A

1B

K1

2A

2B

K2

3A

3B

K3

课程内容

本课程将让儿童掌握语言的基本技能：听话说话阅读和书写、协助儿童积累新知识和新经验

- 看图识字
- 朗读简单的儿歌
- 认识和说出基本笔画的名称

- 汉语拼音
- 认识短语 & 理解阅读
- 朗读简单的故事/儿歌
- 针对故事内容发问

- 认识基本部首和偏旁
- 针对故事内容发问
- 从教材中认识生字
- 理解故事角色、情节与内容

Textbooks & Workbooks

华文1A

华文1B

K1

华文2A

华文2B

K2

华文3A

华文3B

K3

Lesson contents
4 groups of fine motor skills training

Children learn to colour with their whole arm.

whole arm

They also learn to pinch, knead and twist to create shapes.

whole hand

Train the children to push the string through the holes accurately. This will increase the accuracy of the pincer movement.

pincer

Children will manipulate objects with their fingers and to help train their muscles they will perform activities.

pincher

10 themes
Engaging children with different themes and toys to help them improve their fine motor skills.

On the beach

Safari

Night scene

The funfair

The kitchen

Museum

The garden

A stage performance

Castle at the seaside

Playland

Lesson contents
1 story theme + 4 types of toys that train muscles

Engage the children with animations of different themes, then introduce toys that will train their muscle. This can motivate children to learn and the learning process becomes more interesting.

The animation simulates movements for children to imitate.

Flow for teaching:

Children will watch the videos and follow the movement to complete the task.
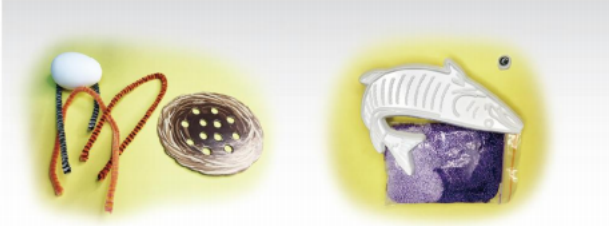
Month 1:
On the beach

Month 2:
Safari
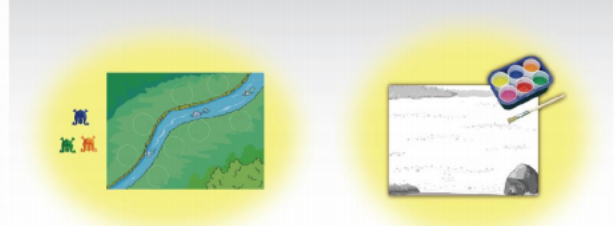
Month 3:
Night scene
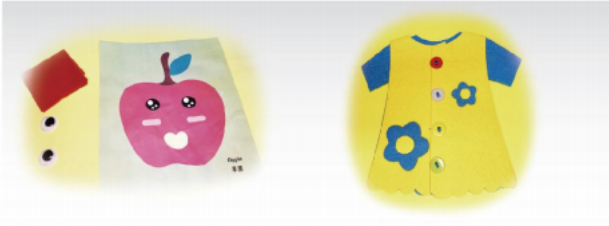
Month 4:
The funfair
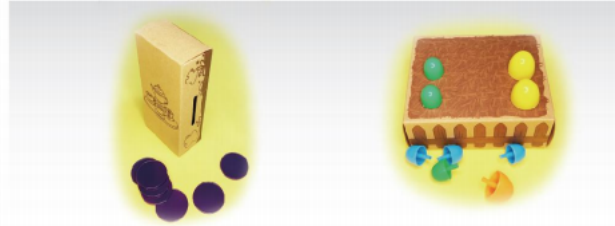
Month 5:
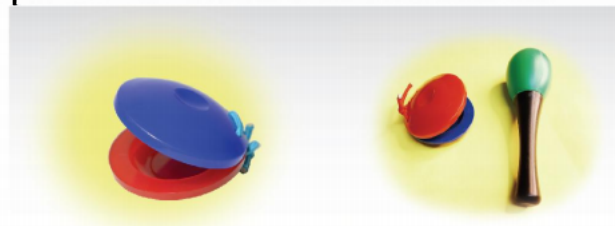**The kitchen**
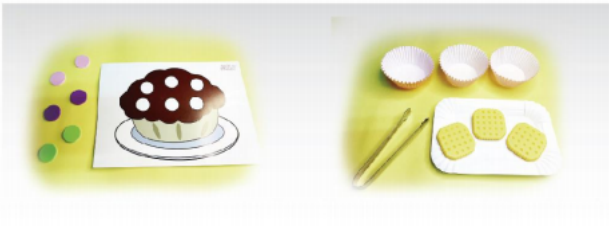
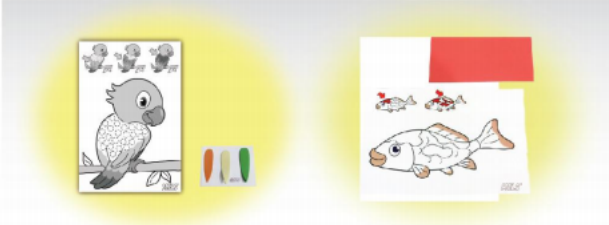**Month 6:**
Museum

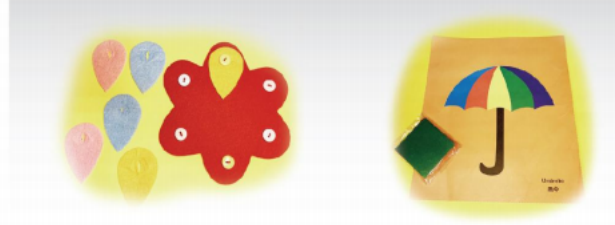**Month 7:**
The garden
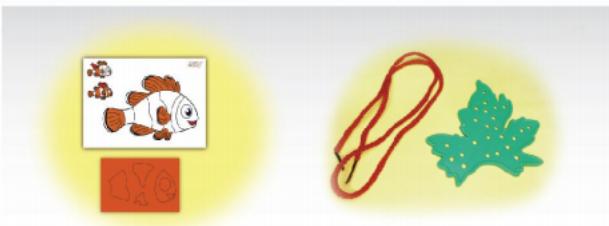
Month 8:
A stage
performance

Month 9:
Castle at the
seaside

Month 10:
Playland

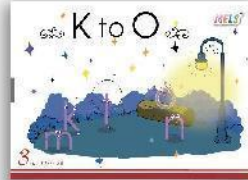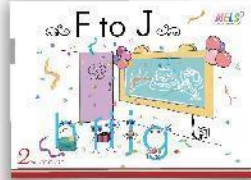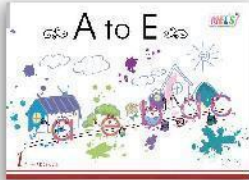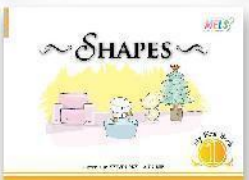****Product item availability may subject to change without prior notice.**

Lesson contents
6 general knowledge

These cognitive development books are specially designed for children aged 2-4.
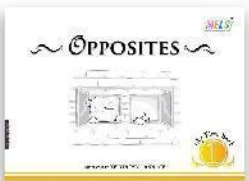
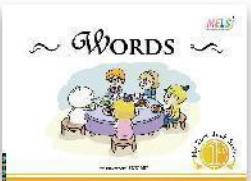A to E

F to J

K to O

P to T

U to Z

Alphabet A-Z

Shapes

Colours

Counting: 1-10
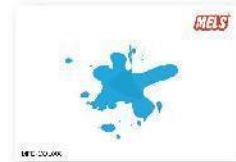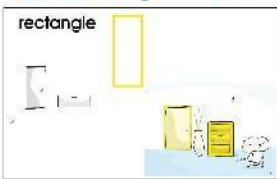
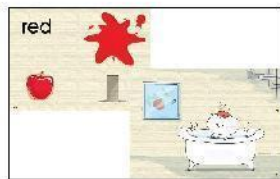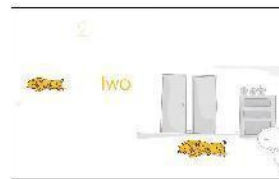Opposites

Words

Suitable for
N1 or K1 students

FLASH CARD

blue

six

6

mother

Books preview

rectangle
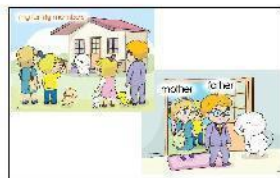
Shapes

red

Colours

two

Counting: 1-10

tall   short

Opposites

Words

Aa
apple

Alphabet A-Z

For further information,

Teaching Software

Flash Cards

Monthly Assessment

Teaching Guide

STEM⁺ & Computational Thinking

The four key aspects: Algorithms, Pattern Recognition, Decomposition and Abstraction.

The Delivery Robot

Self-Driving Car

The Professor And The Crown

My Grandpa's Spectacles

Sam's Story

Design My Backyard

MELS STEM⁺

Joe And His Family

Escape From The Prison

Jack And Jill And Their New House

The Robotic Cleaner
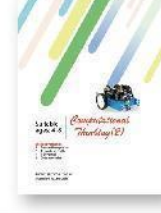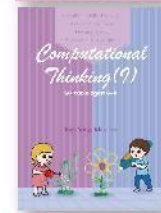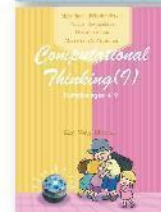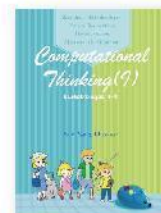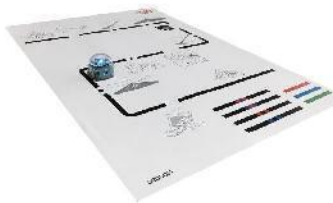
The Robbery

Life When Mum's Away

The course has three levels. Each level will apply different robots to solve problems.

Ages 5-8

level 1

Introduce four fundamental concepts in computing: read the codes; write the codes; apply the codes to solve problems & find various ways to solve a problem.

Arrange solutions in steps Split a problem into steps Compare different solutions Solve a problem with the above methods

Get to know three basic colour codes; apply these codes to program a robotic car; introduce additional three best and only solution in various circumstances.

Creating the awareness in 3D printing: how to join different objects; create a 2D solid surface; tracing a 3D object & 3D printing to solve problems.
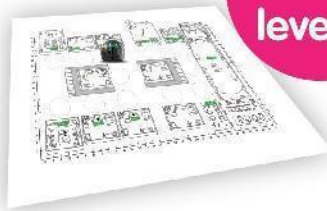
level 2
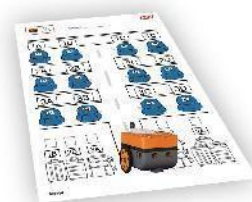
Learn to measure the distance and execute the program; set the various directions; set the various speeds & solve a problem by considering the various distances (measure and set)/directions and speeds.

Introduction to Block Coding: Moving Forward & Directions; Write the block coding skills to solve the problem; Introduction to the new function: Pause; Introduction to sound/light coding.

Create a 2D surface of various designs, Join the 2D surfaces into a 3D object; Create 3D objects; Solve a problem with 3D creations.

Monitor the movement by adjusting speeds/durations, setting directions for a 2D movement activity; plan steps with different directions and distances; generalize a routine activity by setting steps with various speeds, distances, durations and directions.

level 3
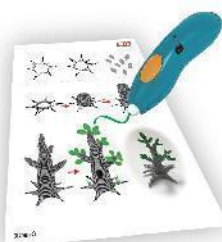
Use remote controllers to move the robots; set the robots to avoid objects; introduction to the idea of looping; solve a logistic problem by moving goods from one point to another.

3D Pen to create a flower tree, to create tree, a sit-up equipment and form a 3D landscaping view.

learn to operate the robot to move forward and to turn to left/right hand side; Set the codes with the app– direction, speed and siren; Set the text message on the LED display; Solve the problem with the various codes.

Introduction to Block –Coding The logic of "If–then" The light sensor The temperature sensor

Theories of essential knowledge in Machine Learning, Artificial Intelligence and Computational thinking

Ages 8-12

Level 1: Computational Thinking with essential coding skills & setting IOT devices
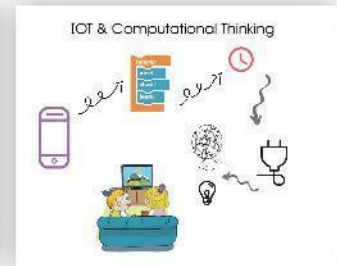

Coding IOT with CT

Learn to code the robot.
Solve the tasks with coding skills.

Coding IOT with CT

Learn to code the robot.
Solve the tasks with coding skills.

IOT & Computational Thinking

I am here!

Learn to set the IOT devices.
Design automation by coding the IOT devices.

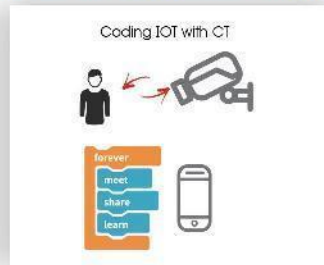IOT & Computational Thinking

Learn to set the IOT devices.
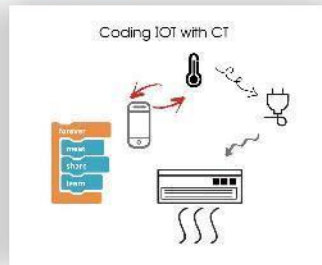Join the IOT devices with coding skills.

Level 2: Computational Thinking with essential coding skills & setting IOT devices

Coding IOT with CT

Learn the codes to control the robot.
Code the robot to solve the delivery tasks.

Coding IOT with CT

Learn the codes to control the CCTV.
Code the robot to solve the recording tasks.

Coding IOT with CT

Learn to code/set the IOT devices.
Automate the home IOT devices with codes.

IOT & Computational Thinking

Learn to set the BLE tracking devices.
Automate tasks in a smart environment.

Ages 12-16

Level 4: Computational Thinking with Microbit projects & Cyber Security and Privacy

Coding IOT with CT

Setting microbit and Robot.
Code the robot with microbit

Coding IOT with CT

Remote Burglar Alarm

Learn the basic communication with microbits.
A remote Burglar Alarm project.

The security and privacy

Cyber Bullying and Privacy

CYBERSECURITY

Preventive measures in cyber bullying.
Games to learn the concept of cyber privacy.

Coding IOT with CT

SMART HOME

The communication between objects (IOT).
A Smart Home Project

Level 5: Computational Thinking with Arduino projects & Augmented Reality

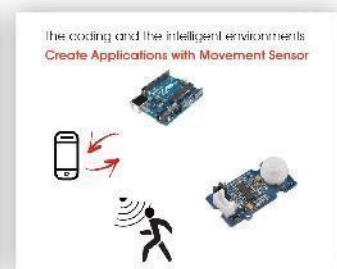The coding and the intelligent environments
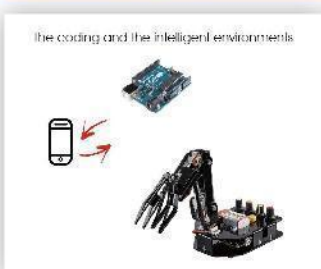
Get to know basic functions of Arduino.
Code the robot arms with Arduino.

The coding and the intelligent environments

Create Applications with Distance Sensor

Attach an external sensor to Arduino.
An Arduino project with the Distance Sensor

The VR and the intelligent environments

Experiencing Applications with AR

Get to know basic Augmented Reality (AR).
Get to know the functions of AR in real life.

The coding and the intelligent environments

Create Applications with Movement Sensor

Attach an external sensor to Arduino 2.
An Arduino project with the Motion Sensor

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