UKIT Education Solution

uKit Education Solution

Tailored for K-12 students

uKit Education Solution has been specifically tailored for students in K-12. It seamlessly incorporates AI knowledge, engineering literacy, and computer literacy into the curriculum, creating a comprehensive learning system. By focusing on enhancing students' AI literacy, computer science literacy, and 21st-century skills, it aims to foster their overall development.

- Inspire creativity
- Learn by doing
- Explore AI algorithms
- Foster computational thinking
- Expand STEAM education
- Connect with the real world
- Nourish future talents

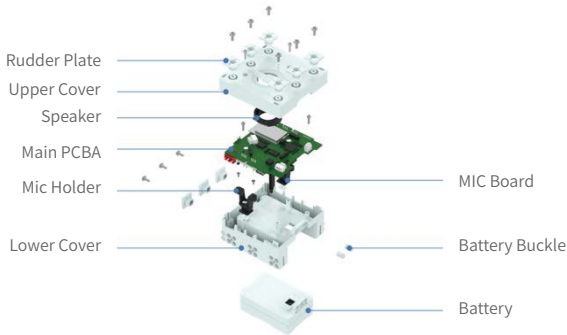| Buildable Programming Robot	• High-performance Controllers • High-quality Smart Sensors • Expandable Electric Accessories • 220+Types of Building Blocks • Compatible with Graphical Programming and • Python Programming
Curriculum System	• Regular Courses • Club Courses • Competition Courses
Comprehensive Services	• Consultation Service • Training Service • Teaching Support • Academic Research Support

Buildable Programming Robot

uKit AI Main Controller

Design for primary school

Rudder Plate
Upper Cover
Speaker
Main PCBA
Mic Holder
Lower Cover

MIC Board
Battery Buckle
Battery

32-bit MCU

IOT

Intelligent Vision

Intelligent Speech

Both WiFi and Bluetooth Connection

Graphical Programming

Trash sorting	
Handwritten numbers and letters	
Traffic sign	
Passenger detection	
Vehicle detection	

Intelligent Camera Module

Trash sorting | Handwritten numbers and letters | Traffic sign | Passenger detection | Vehicle detection

Gender recognition | Face recognition | License plate recognition | Emotion recognition | Color recognition

Track recognition | Tic-tac-toe recognition | QR code recognition | Mask detection | Ball tracking
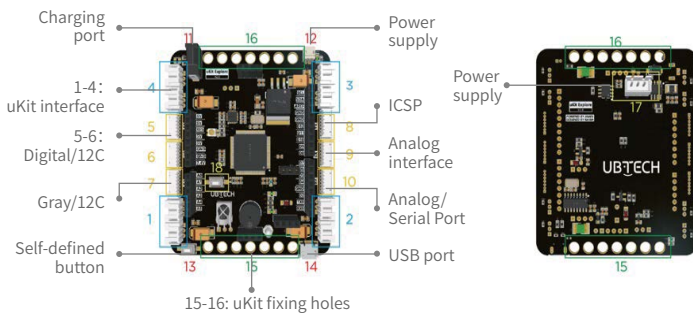
0.8 TOPS Arithmetic

Multi-Class Vision Algorithms Locally Running

Self-Training Vision Model Applications

uKit Explore Devoloping Board

Design for the higher grades of primary school to high school

Charging port
1-4: uKit interface
5-6: Digital/12C
Gray/12C
Self-defined button

Power supply
ICSP
Analog interface
Analog/ Serial Port
USB port

15-16: uKit fixing holes

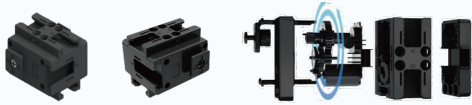Power supply

Open-sourced Development Board

Based on Arduino

Both Bluetooth and USB Connection

Python Programming Text Coding

Servo and DC Motor

Servo

- 360° rotation
- 1/238 deceleration
- 4kg.cm torque
- 0.1 sec/60° rotation speed

DC Motor

- 360° rotation
- 140±10% RPM No-load speed
- 2.2kg.cm torque

Sensors

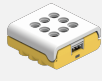|					
Motor	Servo	Touch Sensor	Eye Lamp	2.4 Inc LCD Screen	LED Strip Hub
Temperature & Humidity Sensor	Infrared Sensor	Sound Sensor	Light Sensor	LED Light Strip	Bluetooth controller (Optional)

Building Blocks

220+ Types of Building Blocks

7
types of gears

20+
types of connectors

**200+**
types of decorative parts

Curriculum System

The curriculum is designed to focus on international guideline standards such as CSTA, AI4K12 and also UBTECH Artificial Intelligence Knowledge Mapping. The curriculum design integrates the concepts of large units and PBL projects and adopts the "5E" model to provide scientific guidelines for teaching and learning practices.

UBTECH Artificial Intelligence Knowledge Mapping

Awareness & understanding

Technology utilization & application

AI Literacy
Computer Vision /
Voice Interaction /
Motion Control /
Autonomous Vehicle
…

Ethics & social responsibility

Cooperative Innovation
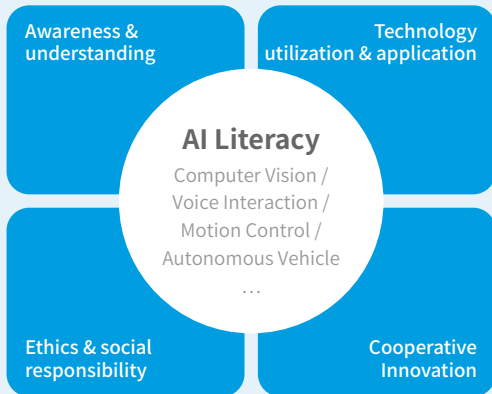
5E Model

The curriculum design integrates the concepts of large units and PBL projects and adopts the "5E" model to provide scientific guidelines for teaching and learning practices.

Engage

Explore

Explain

Elaborate

Evaluate
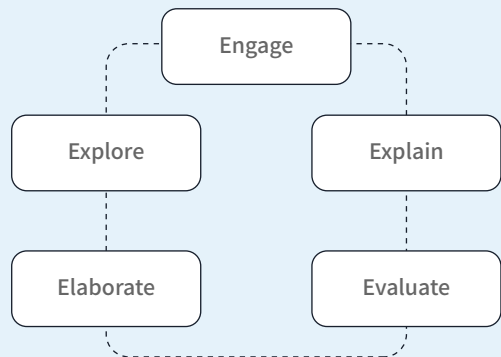
Designed for Beginners

Meets the psychological development and learning characteristics of studentsfrom the lower primary grades to high school.

Connecting AI to Real Life

The course is based on the realistic application of AI, with perception, representation and reasoning, machine learning, natural interaction, and social responsibility as the main content, and the goal of AI core literacy cultivation.
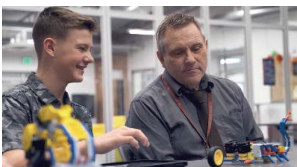

### Wide Coverage of AI Technology

Helps students learn and understand mainstream AI technology and application scenarios and prepare for new AI talents.

The uKit curriculum offers a comprehensive range of AI and robotic educational resources designed to enhance AI literacy and develop 21st century skills among students from primary to middle school. The objective is to nurture the younger generation in preparation for the future of AI-driven technology.
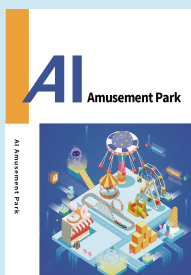
Middle School
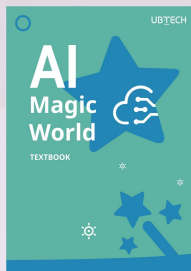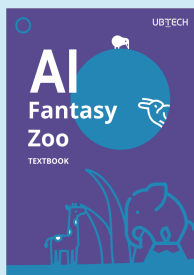

AI Magic World
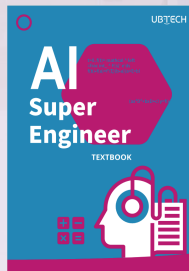
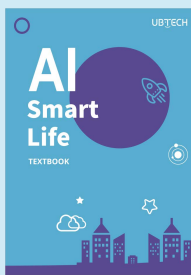AI Super Engineer

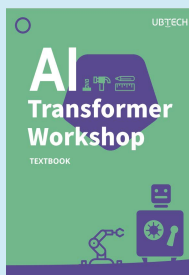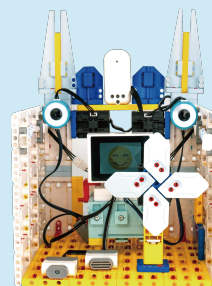## Primary School

AI Amusement Park

AI Future Community

AI Fantasy Zoo

AI Smart Life

AI Transformer Workshop

Primary School Curriculum

Curriculum Name	AI Fantasy Zoo	AI Smart Life	AI Amusement Park	AI Future Community	AI Transformer Workshop
Class Hour	30 Class Hours				
Recommended Grades	Grade 1-2/Primary	Grade 2-3/Primary	Grade 3-4/Primary	Grade 4-5/Primary	Grade 5-6/Primary
Programming Level	CSTA 1B			CSTA 2	CSTA 1B
AI Capabilities	Experience artificial intelligence		Robot Sensing , AI Perception		Practice artificial intelligence
Learning Tools	uKit EDU APP	uKit EDU APP	uCode		uCode/uKit Explore APP
	AI Fantasy Zoo Kit	AI Smart Life Kit	AI Amusement Park Kit	AI Future Community + Venue Map Kit	AI Transformer Workshop Kit
Interdisciplinary speciality	Maths, Science, Physics, IT				
Recommended Grades	Machine perception and execution				
	From simple machinery to artificially intelligent robots				

AI Fantasy Zoo

TEXTBOOK
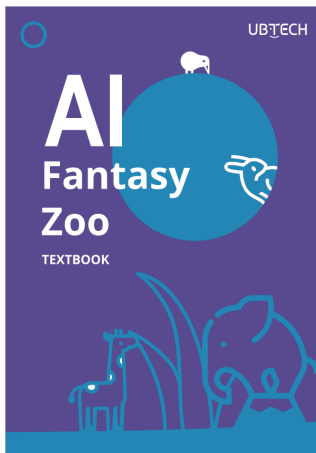
18 topics
30 class hours

Recommended for
Primary School/Grade1-2

Curriculum Description

Students observe and understand the physical characteristics and composition of animals, use building blocks to build animal models, and use graphical programming software to design model programs, so that "small animals" have functions such as perception, movement, and sound production, and make animal models "live".

AI Core Literacy and Skills

Awareness and Understanding

Problem Solving

Innovation and Design Thinking
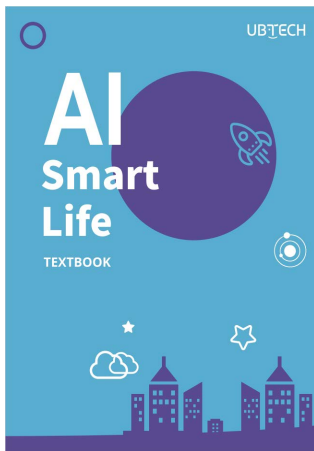
Engineering Thinking

Information Processing

AI Fantasy Zoo Kit

uKit AI Main Controller	×1
Sensor &Servo	×9
Blocks	×600+

Programming Tool
uKit Edu

UBTECH

AI Smart Life

TEXTBOOK

16 topics
30 class hours

Recommended for
Primary School/Grade2-3

Curriculum Description

Learn all kinds of sensors and complete the challenges by building models.This course on Smart Life is designed to help students acquire mathematical knowledge of angles and knowledge of decisions and loops. Students will develop and maintain curiosity and enthusiasm about artificial intelligence, develop the ability to create, learn, think, and communicate, recognize the changes caused by technology, and keep pace with the times.

AI Core Literacy and Skills

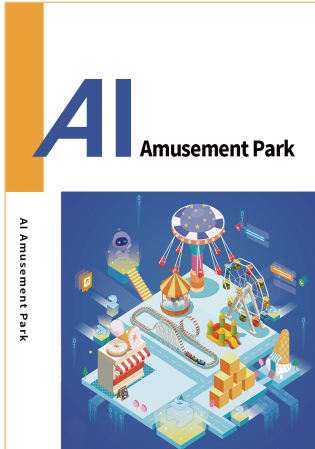| Awareness and Understanding | Problem Solving | Representation and Reasoning | Engineering Thinking | Logical Thinking | Information Processing |

AI Smart Life Kit

uKit AI Main Controller	×1	
Sensor &Servo	×15	
DC Motor	×1	
Blocks	×1000+	

Programming Tool
uKit Edu

AI Amusement Park

AI Amusement Park

15 topics
30 class hours

Recommended for
Primary School/Grade3-4

Curriculum Description

This course is based on the theme of "The Amazing Amusement Park" and integrates multidisciplinary knowledge into each topic. Students learn the knowledge of AI technology, mechanical structure, and programming, and understand the classical structure of robots and master methods of improving machine structure and debugging robot programs in the process of building Amazing Amusement Park by using engineering design thinking .

AI Core Literacy and Skills

Voice Interaction

Image Recognition

Gear Drive

Engineering Thinking

HMI

Information Processing

AI Amusement Park Kit

uKit AI Main Controller	×1
Sensor&Servo	×9
Camera	×1
LCD Screen	×1
LED Light Module	×1
DC Motor	×2
Blocks	×600+

Programming Tool
uCode

![AI Future Community](book cover)

AI Future Community

15 topics
30 class hours

Recommended for
Primary/Grade4-5

Curriculum Description

This course is based on the theme of community. Based on real-life cases and the theme of "AI Future Community", the course organically integrates AI and life cases and develops interesting and challenging AI learning activities based on project learning and problem-solving.

AI Core Literacy and Skills

Face Recognition

Speech Synthesis
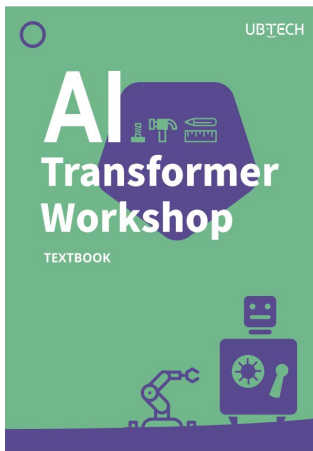
Machine Learning

Sensing

HMI

Information Processing

AI Future Community Kit

uKit AI Main Controller	×1
Sensor&Servo	×9
Camera	×1
LED Light Module	×1
Blocks	×400+

Programming Tool
uCode

AI Transformer Workshop

TEXTBOOK

17 topics
30 class hours

Recommended for
Primary School/Grade5-6

Curriculum Description

The Transformers course is designed to help students gain knowledge of programming logic.Students explore the principles and logic behind intelligence based on practical applications in real-life scenarios; design models, write programs, and feel the charm of "intelligent manufacturing".Driven by curiosity, students show their interest in exploring the conditions, process and cause of phenomena and events, and can transform their simple ideas into a model or object and design simple instruments, build items or complete tasks based on real needs. During their study, students dare to question, put forward ideas from different perspectives and develop a spirit of innovation.

AI Core Literacy and Skills

Awareness and Understanding

Representation and Reasoning

Problem Solving

Engineering Thinking

Logical Thinking

Information Processing

## AI Transformer Workshop Kit

uKit AI Main Controller	×1
Sensor &Servo	×24
Blocks	×900+

Programming Tool
uKit Explore

Middle School Curriculum

Curriculum Name	AI Magic World	AI Super Engineer
Class Hour	30 Class Hours	
Recommended Grades	Grade 6-7/Middle School	Grade 7-8/Middle School
Programming Level	CSTA 2	
AI Capabilities	Practice artificial intelligence	
Learning Tools	uCode	uKit Explore（Python）
	AI Magic World Kit	AI Future Town Kit
Interdisciplinary speciality	Maths, Science, Physics, IT	
Main lines of the course	Machine perception and execution	
	From simple machinery to artificially intelligent robots	

AI Magic World

TEXTBOOK

UBTECH
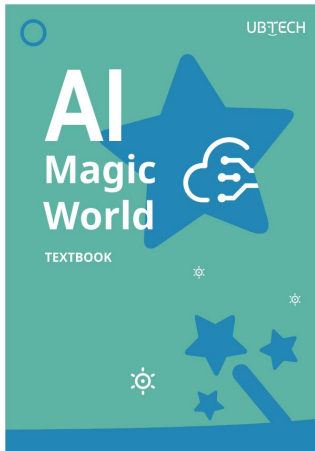
14 topics
30 class hours

Recommended for
Middle School/Grade7-8

Curriculum Description

Through this course, students learn to design uCode animations and games and the method of connecting, programming and debugging uKit smart hardware; experience AI and the charm of algorithms and programs; cultivate innovative spirit, improve practical ability, experience funs in hands-on production, and develop interest in AI and the ability to solve practical problems in the real life.

AI Core Literacy and Skills

Awareness and Understanding

Problem Solving

Representation and Reasoning

Engineering Thinking

Computing Thinking

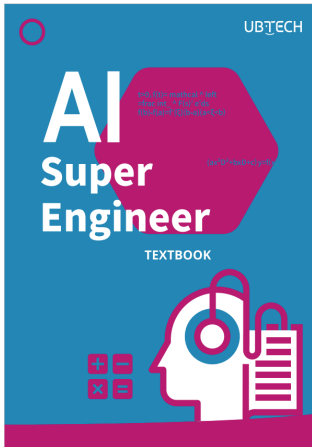Practical Ability

AI Magic World Kit

uKit AI Main Controller	×1
Sensor &Servo	×13
Blocks	×600+

Programming Tool
uCode

AI Super Engineer

TEXTBOOK

14 topics
30 class hours

Recommended for
Middle School/Grade8-9

Curriculum Description

Students learn to use graphical programming software, the Explore motherboard and common sensors and build transforming robots. They understand the principle of smart devices in daily life and in the fields of agriculture, industry and robots in the role as an engineer and propose optimization, and attempt to put ideas into practice. Students also develop logical thinking, hands-on skills and creativity, and develop an interest in artificial intelligence.

AI Core Literacy and Skills

Logical Thinking

Hands-on Ability

Engineering Thinking

Sensing

Innovation and Design Thinking

Information Processing

AI Super Engineer Kit

uKit AI Main Controller	×1
Sensor &Servo	×23
DC Motor	×1
Blocks	×1100+

Programming Tool
uKit Explore

Software and Programming Tools

uKit Edu APP
Android iOS

- · Graphical Programming
- · PRP Pose-record-play
- · Remote Control
- · 3D Building Guidance

uKit EDU APP is a programming software desgn for beginner.It support graphcial programming,PRP(pose-record-play) and multi-functional remote control. In the process of enjoying robot building and remote control, children can imperceptibly establish the thinking logic of space structure and code programming, which lays the foundation for their future AI learning.

uCode
Windows Apple

- · Graphical Programming
- · AI Hardware Open Patform
- · 3D Building Guidance
- · Upload Mode for Advanced Programming

uCode is a programing software combining software and hardware which has been developed by UBTECH and is specially designed for adolescent students aged 8-14. Programming is carried out by dragging building blocks instead of using a keyboard.uCode can not only be used to create interesting games and cartoon works, but also be used to program UBTECH hardware products, and even achieve a virtual reality capability by interacting software and hardware by means of combined programming to guide students to realize their creativity.
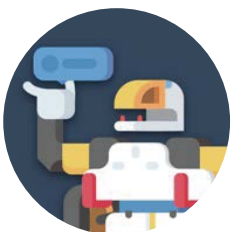
uKit Explore
Windows

- · Graphical Programming C/C++ Programming
- · Import Arduino IDE
- · C Language Code
- · Programming

uKit Explore is a software programming tool based on the open-source design of Arduino, which can be well combined with the uKit explore board to lead students into the colorful electronic world. The software has a wealth of sensor module interfaces, allowing students to experience the endless fun of electronic technology. The software supports access to multiple sensor modules and related peripherals and is compatible with various open-source sensor modules. The software provides PC programming tools and support for graphics programming.
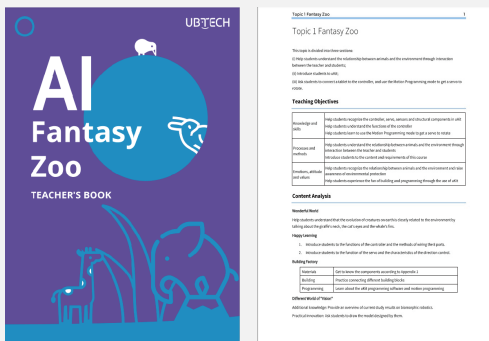
Curriculum Resources

Based on AI Education Platform to meet the needs of easy teaching and learning.
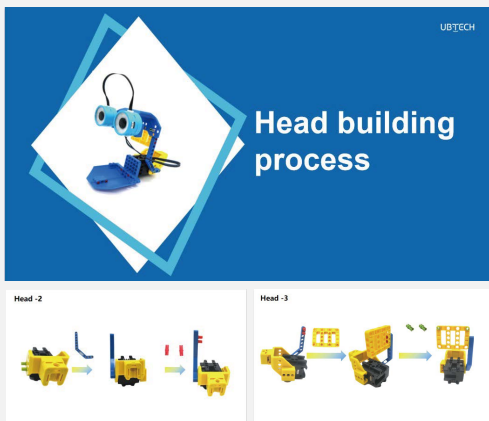

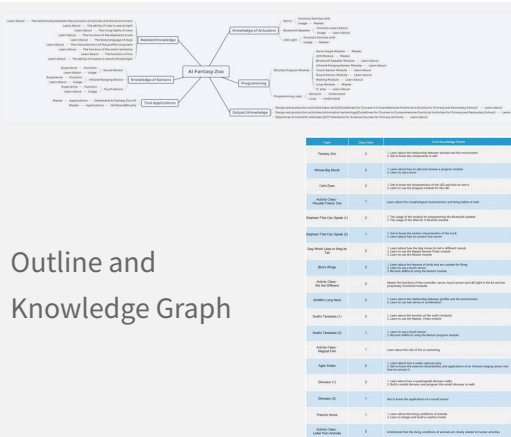Student's Textbook
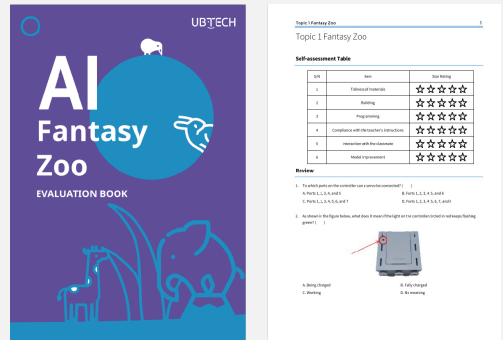
Student's Evaluation Book

Teacher's Book

Lesson Slide

Teacher's Book

Outline and Knowledge Graph

Comprehensive Services

Builds a multi-scenario AI education RaaS based on AI and robot technology

Founded in 2012, UBTECH Technology is a leading global enterprise in AI and humanoid robots.

UBTECH Artificial Intelligence Education solution is based on the company's self-developed full-stack technology for humanoid robots. With the technical advantages of AI and robots, UBTECH has continuously empowered AI education to provide quality courses and comprehensive AI education ecosystems.
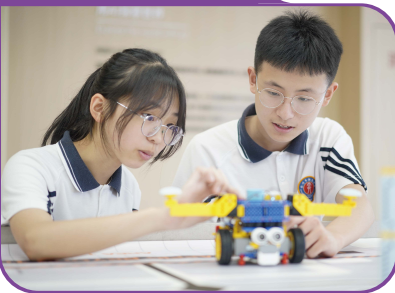
Innovation Talents Training

Industrial Application Talents Training

General AI & Scientific Literacy Improvement

RaaS
Robot as a Service

Service System

Consultation Service	Training Services
Teaching Support	Academic Research Support
Industrial Training	Career Guidance
Event Service	Achievement Exhibition Service
Assessment Service & Certification	Professional Construction
Job Skills Certification	. . .

Products and Content System

AI Hardware System

Assembled Robot · Multi-mimetic Robot · Humanoid Robot

Software System

uCode | uPython | Crealand

Content System

Platform Support System

Technology Platform

AI Education Platform

OMO Operation Management Platform

Ecological Resources

Society / Association	Experts and Scholars
Research Institutions	Enterprise Partnership

UBTECH EDUCATION