



Kaohsiung American School **Skyrock STEAM Camp**

| **For Micro Kids** GRD 1-2 |

Skyrock courses and camps are where kids learn in radically new ways. We help parents prepare their kids for the future while providing them with experiences that generate serious joy and lasting pride.

As Taiwan's #1 provider of Science, Technology, Engineering, Arts and Math—STEAM—courses and camps, we cover the entire spectrum. We offer a holistic education to prepare and grow kids into well-rounded thinkers and creators for the 21st century!





Invention

Improves hands-on skills by building projects with hardware tools and physical materials.

This curriculum introduces kids to making things with their hands and tinkering with materials to build amazing creations. Together with skilled instructors, your child will learn how to use electrical components, craft materials, and their creativity to complete fun science and engineering projects and challenges.

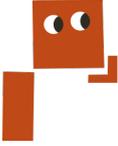
With a range of mechanisms and electrical components that move, light up, and make noise, kids gain STEAM skills by learning how past technologies are built. Kids also learn to combine these concepts with DIY tools and materials to invent new things of their own!

Some of the things we will make:

- A variety of classic animation mechanisms such as the phenakistoscope and zoetrope
- A hockey table game based on magnets
- An electronic board game
- A color-changing LED night light.

Some of the things we will learn:

- How to use craft materials and basic maker tools safely.
- How to think like an inventor.
- Engineering and physics concepts around mechanisms, electricity, light, energy and motion.



Robotics

Introduces mechatronics—combining hardware and software to build robots and smart devices

In this basic introduction to mechatronics, kids use an assortment of blocks, gears, wheels and axles, levers, pulleys, and other mechanical elements in combination with electronics. We will use these to make interactive, exploration-based projects that get kids building, testing, and improving just like real engineers do!

Exploring real-world tasks with a hands-on approach, we build on mechanical principles and start seeing what can be achieved when a little code gets added to a physical hardware object. Students gain a deeper understanding of science and engineering concepts and processes by being challenged to build machines that complete tasks.

Some of the things we will build:

- Simple machines.
- Energy harvesting devices.
- And more!

Some of the things we will learn:

- Mechanical principles by exploring, investigating, and solving tasks with machines.



Establishes computer science thinking with software projects and exciting games.

In this introductory curriculum to coding, kids will use the best platforms in the world designed to break down complex computer science concepts into age-appropriate learning activities. We use multiple tools for this curriculum including Scratch, a block-coding platform developed by MIT.

Together with skilled coding instructors, your child will learn about logic, loops, and conditionals while making games and solving puzzles built around code. This is a great starting point for children with limited digital literacy skills to get them to start using a computer like a pro! Our goal here is to inspire kids into becoming not just a consumer of technology, but a creator of it.

Some of the things we will code:

- Interactive games that keep score.
- Mazes that are tricky to navigate.
- Logic puzzles with surprises.
- Image and video recognition demonstrations.
- And more!

Some of the things we will learn:

- How to decompose and recognize patterns.
- Sequencing and conditional logic.
- How to use functions and loops.
- Game design principles.