QUICK INFO

Age:	Lessons:
12+	**19**

1x Pre-assembled robot

No. of students per kit:
2 students

Languages:
🇬🇧 English

SKU: AKX00066

DEVELOPED BY

EDUCATION

ARDUINO®
ALVIK

Go further with every move.

The Arduino Alvik is a powerful, precise, and versatile robot designed for programming and robotics education. It offers a diverse learning path through different programming languages, starting from block-based coding through Arduino C and MicroPython, enabling possibilities through students' school career to explore robotics, the IoT, and AI.

> **"** *My students have always loved Arduino because it unlocks their creative potential, and Alvik is no exception. Traditional robotics products have never been the "perfect fit" at our school, but with Alvik, Arduino has found the best balance between advanced features and ease of use for all learners. Equipped with numerous built-in sensors and supporting Micropython, students have no trouble getting started and experiencing immediate results. Best of all, you can upgrade the robot with additional external components, attach custom 3D printed parts, and connect online to become part of the Internet of Things. It's an absolute game-changer.*
>
> **Austin Gardner**, *El Altillo International School in Jerez, Spain*

KEY LEARNING VALUES

- ⊘ Enhances comprehension and retention of complex STEM concepts

- ⊘ Seamless transition from block-based programming to MicroPython

- ⊘ Develops coding skills

- ⊘ Fosters problem-solving and critical thinking skills through design challenges, and troubleshoot construction issues

- ⊘ Encourages creativity and teamwork

HOW DOES THE KIT WORK IN YOUR CLASSROOM?

Students program the robot to complete a set of challenges you'll find in the learning content. These challenges cover robotics, coding, and math. They all have a learning by doing approach and link to the real use of robots in industry.

HIGHLIGHT:
Extend the robot's structure with M3 screws and LEGO® connectors, and easily connect external sensors to plug-and-play connectors without soldering or complex wiring.
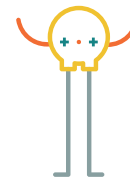
WHAT DOES THE KIT INCLUDE?

Hardware:
- Nano ESP32 board
- 1x Arduino Bot
- Rechargeable battery
- Sensors

Software:
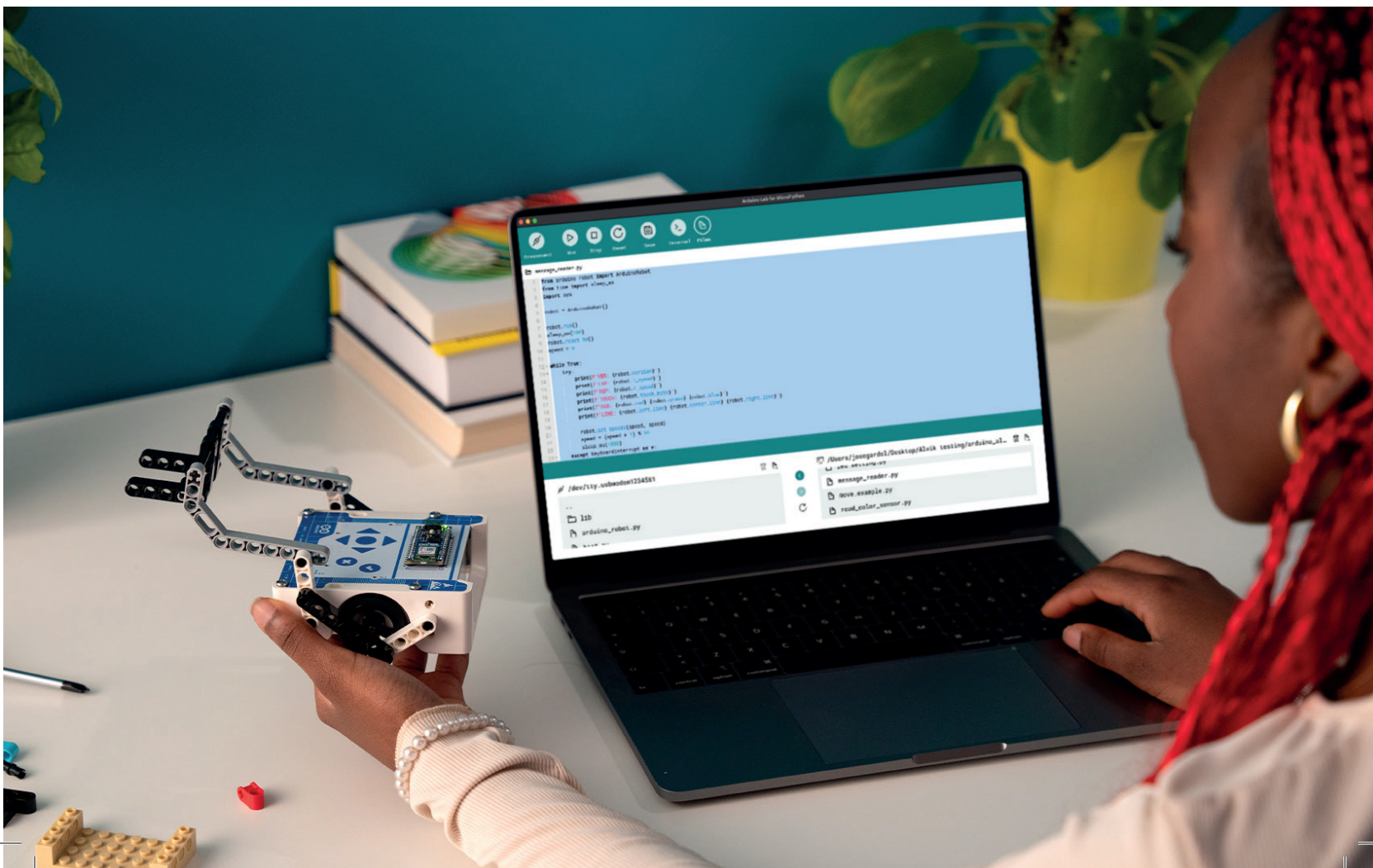- Arduino Lab for MicroPhyton
- Block-base (coming soon)

Learning content
- Access to the Alvik online platform and dedicated support.

LEARN MORE AT

arduino.cc/education/arduino-alvik

Arduino Alvik

With Arduino Alvik, innovators, students, and educators can step into the world of programming and robotics at any level - helping you go further with every move.

Overview

Alvik simplifies coding and complex robot projects, enabling users of all levels to immerse themselves in the exciting world of programming and robotics. It's also a cross-discipline tool that bridges the gap between education and the future of robotics with CSTA and NGSS-aligned free courses. This innovative and versatile robot makes learning and creating more accessible and fun than ever before.

Key benefits include:

- **Start programming in no time:** Powered by the versatile Nano ESP32, Alvik streamlines the learning curve in robotics with its comprehensive programming suite that includes MicroPython and Arduino language. Designed to accommodate users of all skill levels, Alvik soon plans to introduce block-based coding, further enhancing accessibility for younger students and providing an engaging entry point into robotics design.
- **Unlock robotic potential with multiple integrated sensors:** Alvik's Time of Flight, RGB color and line-following array sensors, along with its 6-axis gyroscope and accelerometer, allow users to tackle a range of innovative, real-world projects. From an obstacle avoidance robot to a smart warehouse automation robot car, the possibilities are endless!
- **Design your own experience by expanding Alvik's capabilities:** Alvik comes equipped with LEGO® Technic™ connectors, allowing users to personalize the robot and expand its capabilities. Additionally, it features 8x M3 screw connectors for custom 3D or laser-cutter designs.
- **Amplify Alvik's flexibility for dynamic movement:** The Servo, I2C Grove, and I2C Qwiic connectors allow users to expand Alvik's potential and take robotics projects to a whole new level. Add motors for controlling movement and robotic arms, or integrate extra sensors for data collection and analysis – the choice is yours.

Other Features

Its small yet mighty design allows learners to bring imaginative ideas into reality, starting from your first ever line of code to the most complex technological developments. Alvik's pocket-size build makes it an ideal companion for various learning environments, whether that's in a classroom, makerspace, home, or even in your garage.

Alvik's rechargeable and easy-to-replace battery ensures continuous learning sessions and an uninterrupted creation experience. Replaceable batteries can also extend the overall lifespan of the robot, reducing the need to replace the entire unit when the original batteries degrade over time and saving costs.

CSTA and NGSS-Aligned Curriculum

The Alvik platform includes project-based learning lessons and activities with the MicroPython language. These encourage students and innovators to explore technology through hands-on collaboration, preparing them for real-world challenges.

The content includes getting started, hardware, software, and real-life use activities. These activities are designed to build learners' critical thinking, problem-solving, and teamwork skills. [Explore Robotics and MicroPython](#)

Need help?

Check the Arduino Forum for questions about the [Arduino Language](#), or how to make your own [projects with Arduino](#). You can also find out more about [Arduino Cloud for Schools here](#).

Tech specs

Alvik main controller	Arduino Nano ESP32 • **8MB of RAM** • u-blox® NORA-W106 (ESP32-S3) • Processor up to 240 MHz • ROM 384 kB + SRAM 512 kB • 16 MB External FLASH
Alvik on-board Core	STM32 Arm® Cortex®-M4 32 Bit
Power supply	**Nano ESP-32 USB-C**® rechargeable and **replaceable** 18650 Li-Ion battery (included)
Programming language	**MicroPython**, Arduino & *block-based programming
Connectivity	**Wi-Fi**®, Bluetooth® LE

Inputs	Time of Flight Distance Sensor - up to 350 cm RGB Color Sensor 6-axis Gyroscope-Accelerometer Line follower Array (x3) Touchable Buttons (x7)
Outputs	2x RGB LEDs 6V Motors - No- load speed 96rpm, No- load current 70mA
Extensions	LEGO® Technic™ connectors (x4) M3 screw connectors (x8) Servo motor I2C Grove I2C Qwiic

block-based programming will be supported soon.

Documentation

[Datasheet](#)
[API Overview](#)

Part no.- AKX00066
Barcode - 7630049204959