



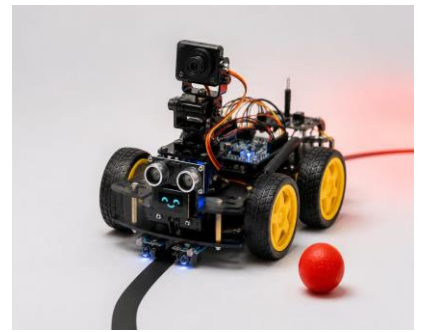
# ROBOSPARK INTERMEDIATE

APPLIED ROBOTICS · AGES 12–16

12–16 YEARS

AI-POWERED ROBOTICS TRACK

CODE. BUILD.  
LEVEL UP.



The next step after block-based coding. Through four hands-on modules, students build real Python and Arduino C++ skills, wire and fuse multiple sensors, run a guided computer-vision pipeline, design and 3D-print their own parts, and bring it all together in an AI-powered Companion Robot for a live Showcase Day.

12–16

AGE GROUP

12

MONTHS  
DURATION

2

SESSIONS  
PER WEEK

60

MINS /  
SESSION

4

MODULES

EN/AR

BILINGUAL

✓

CERTIFICATE

## PROGRAM OVERVIEW

Ascend's bridge robotics course for Champs who've outgrown block-based coding — moving into real Python, Arduino C++, sensor fusion, and guided AI vision.

### COMPANION ROBOT CAN:

- ✓ Combine Arduino + Raspberry Pi
- ✓ Detect and track objects by camera
- ✓ React using multi-sensor fusion
- ✓ Hold a scripted voice interaction
- ✓ Be presented at a live Showcase Day

## TWELVE-MONTH ROADMAP

- 1 Circuits to Code**  
Months 1–3 — Move from block code into Python & Arduino C++; build an Obstacle-Avoiding Buggy.
- 2 Sensors That Think**  
Months 3–6 — Layer multiple sensors into smart behaviors; build a Smart Line-Following Robot.
- 3 Eyes for Robots**  
Months 6–9 — Guided OpenCV pipeline and 3D-printed parts; build an AI Vision Turret.
- 4 Robot With a Voice**  
Months 9–12 — First Raspberry Pi setup and voice interaction; build the AI Companion Robot.

## SKILLS STUDENTS GAIN

- ✓ Python & Arduino C++
- ✓ Breadboard Circuits & Multimeter
- ✓ Multi-Sensor Fusion
- ✓ Guided OpenCV Object Detection
- ✓ CAD Design (Tinkercad/Fusion 360)
- ✓ 3D Printing
- ✓ Raspberry Pi Setup
- ✓ Voice Interaction Basics
- ✓ Build Logs & Documentation
- ✓ Engineering Presentations

## PROGRAMME DETAILS

**Level:** Intermediate (Ages 12–16)

**Duration:** 12 Months · 4 Modules

**Schedule:** 2 Sessions/Week · 60 min · Teacher-Led

**Format:** Small-Group · Bilingual (EN/AR)

**Includes:** Lifetime Material Access + Certificate

**Assessment:** Phase Demos + Build Logs + Final Showcase

START NOW

ENROLL IN ROBOSPARK  
INTERMEDIATE

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BUILD TODAY. INNOVATE  
TOMORROW.