

Drones and Raspberry Pi Exploration for Kids

A short supervised introduction to devices, sensors and LED programming

FA-0785 · 1 hour

Embedded Systems and Hardware

Introduction

Discover how drones and Raspberry Pi computers work through age-appropriate demonstrations and a supervised LED activity. Explore remote control, sensors and simple programming commands to spark further STEM learning. A drone demonstration or simulator is optional; the session does not require building a drone or integrating every drone with a Raspberry Pi.

Learning outcomes

- Recognise common drone components and applications.
- Describe Raspberry Pi as a small computer with programmable connections.
- Explain remote-control and sensor concepts at a beginner level.
- Follow a prepared Python example that turns an LED on and off.
- Recognise simple drone-control commands in a supported demonstration or simulator.

Prerequisites

No prior programming experience is required. The prepared supervised activity uses a Raspberry Pi, LED, suitable current-limiting resistor, jumper wires and code snippets. A mini drone or compatible simulator may be used for demonstrations.

Training outline

1. Introduction — 5 minutes

- What drones are and where they are used.
- Raspberry Pi as a small programmable computer.

2. Drone demonstration — 10 minutes

- Observe a supervised mini-drone demonstration if available, or a prepared visual example.
- Identify propellers, sensors and controller.
- Discuss remote control and sensor data.

3. Raspberry Pi exploration — 10 minutes

- Recognise GPIO, USB and display connections on the selected board.
- Discuss example projects such as robotics and home automation.

4. LED control — 15 minutes

- Follow the facilitator's prepared LED/resistor/GPIO circuit.
- Observe or edit a short Python snippet to turn the LED on and off.
- Explore how code changes affect the output.

5. Drone programming demonstration — 15 minutes

- Discuss take-off, landing and movement commands.
- Observe a short example using the selected drone's supported interface or a prepared simulator; capabilities depend on the device.

6. Wrap-up and questions — 5 minutes

Review the discoveries, ask questions and identify further supervised projects.