

# E.O.R.L.2

## user guide

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An interactive coding and programming robot  
designed specially for the EYFS, KS1 and KS2



**HOPE**  
is all you need

## Features:

- Light sensor
- Can turn any number of degrees
- Detachable pointer
- 5 colour LEDs
- Built-in MP3 Player
- Digitally controlled motor
- Up to 250 step program memory
- Programmable lights and sounds
- Custom sounds can be uploaded by USB
- Compatible with Scratch 2.0 on PC

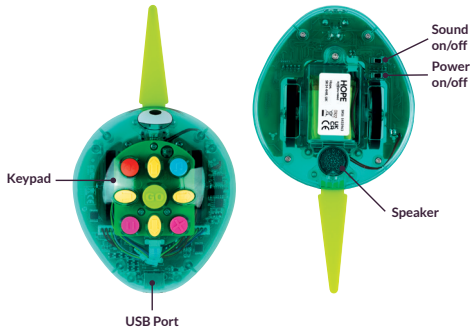


## Introduction:

E.a.R.L 2 is a brand-new floor robot, packed with new features that make learning fun. With all of the features of E.a.R.L and the same transparent body, pupils will love creating and debugging simple programs and being able to see exactly how he works inside. Plus, E.a.R.L 2 has exciting new features, including light sensors, a detachable pointer and the ability to turn in any number of degrees, meaning you can cover even more of the curriculum.

## Getting started:

Before using E.a.R.L 2 for the first time, please fully charge by connecting E.a.R.L 2 to a USB port or USB charger, using the cable provided (see charging section below): or place into the E.a.R.L docking station.



## Charging:

Using the USB lead provided, connect E.a.R.L 2 to any USB port or USB charger. E.a.R.L 2's eye will light red to show it is charging. When E.a.R.L 2 is fully charged, the eye will light green. E.a.R.L 2 will be completely charged in less than 3 hours. Please note, always fully charge E.a.R.L 2 before storing for long periods.

## Changing the battery:

In the unlikely event that the battery becomes defective, the battery may be accessed by removing the battery hatch using a screwdriver. The battery can then be unplugged from E.a.R.L 2 and an exact replacement fitted. Refit the battery hatch and secure using the screw.

## Switching on:



There are two slide switches located next to the battery hatch. The first switch is for sound and the second for power. Normally both switches will be in the "on" position when in use, but if a number of E.a.R.L's are being used at the same time, the sound can be turned off by moving the sound switch to the "speaker off" position.

When E.a.R.L 2 is switched on, the LEDs will light for 3 seconds to indicate the remaining battery charge and E.a.R.L will play a sound.

- 60 – 100% Green
- 30 – 60% Amber
- 10 – 30% Red

If E.a.R.L 2's battery charge is less than 10%, the eye will change to red to indicate that recharging is required.

## Sleep mode:

If no buttons are pressed for 5 minutes, E.a.R.L 2 will go into a very low power sleep mode in order to conserve the battery. Pressing any button will wake E.a.R.L 2. Any programmed steps are retained when E.a.R.L 2 wakes from sleep mode.

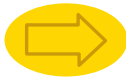
## Programming E.a.R.L. 2:

When E.a.R.L. 2 is switched on for the first time, the program memory will be empty.

When E.a.R.L. 2 is switched on thereafter, E.a.R.L. 2 will remember the last sequence that was entered. We recommend that the "X" clear button is pressed whenever E.a.R.L. 2 is switched on to clear program memory.



Insert a light effect program



Turn right 90°



Insert a sound effect program



Turn left 90°



Clear the entire program



Move forward 15cm



Insert a pause program step



Move backwards 15cm



Run the program

E.a.R.L. 2 can remember up to 250 commands, allowing your pupils to explore increasingly complex sequences and programs as their learning progresses.

Each forward and backward command will make E.a.R.L. 2 move a 15cm step. The turn left and turn right buttons will make E.a.R.L. 2 turn 90° on the spot. The pause button inserts a short pause into the program. When the "GO" button is pressed E.a.R.L. 2 will execute each command of the sequence in order. There is a short pause and sound at the end of each step. To stop the program at any time, just press the clear "X" button. Pressing the clear "X" button again will clear the memory. The light and sound effect keys can be used to extend the learning opportunities and give pupils cues as to the progress of E.a.R.L. 2 through a sequence.

## Uploading sounds:

When you connect E.a.R.L. 2 to a PC or Mac, E.a.R.L. will appear as a Mass Storage Device (just like a memory stick). In the "ZH" folder you will find an MP3 sound for each of the default system sounds. If E.a.R.L. does not appear as a Mass Storage Device, press and hold the "GO" button until E.a.R.L. 2's LEDs flash green. E.a.R.L. 2 is now in MSD mode.



You can customise these sounds by replacing the existing files with your own MP3 sounds; just rename your files to match the existing ones. Please note, make sure to make a backup so you can revert to the original sounds should you wish. You can also add a sound for each of the buttons on the key pad. The sound will be played each time the button is pressed when programming and when that program step is reached when the "GO" button is pressed. Just rename your MP3 file to match the following format:



You could record some of the children speaking the commands and upload the files to E.a.R.L. 2 so they can hear their own commands when E.a.R.L. 2 is in action!

## Programming E.a.R.L 2 using Scratch

Scratch is a project of the Lifelong Kindergarten Group at the MIT Media Lab. It is provided free of charge. To begin using Scratch, just follow these simple steps:

1. Download the free Scratch 2.0 offline editor from <https://scratch.mit.edu/download/scratch2> to the PC or Network you will be using E.a.R.L 2 with.
  2. Follow the instructions and install Scratch 2.0.
  3. Install the latest E.a.R.L Scratch helper from the E.a.R.L Hope landing and/or product page onto your device. You may require administration rights to complete this. Once the program has opened, please choose the 'Advanced Blocks' option.
- UK: [www.hope-education.co.uk/earl-has-landed](http://www.hope-education.co.uk/earl-has-landed)  
 International: [www.findel-international.com/earl-has-landed](http://www.findel-international.com/earl-has-landed)
4. Switch E.a.R.L 2 on, then using the USB lead provided, connect E.a.R.L 2 to a USB port on your PC. Press and hold the "GO" button for 5 seconds. The LEDs will flash blue, E.a.R.L 2 will be detected by your computer, and the necessary driver will be loaded automatically. Please note, it may be necessary to restart your PC.

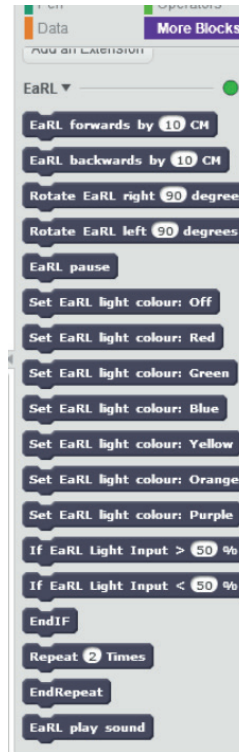


Start Scratch

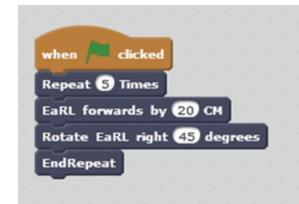
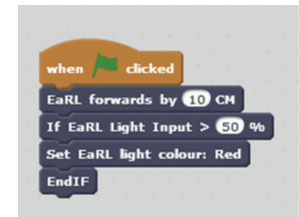


All the necessary software is now installed on your computer. Switch your E.a.R.L 2 on and connect to a USB port on your computer. Press and hold the "GO" button for 5 seconds until E.a.R.L 2's LEDs flash blue, signalling E.a.R.L 2 is now in Scratch mode. Double click the E.a.R.L Scratch Helper icon to launch it. Check there is a tick under the image of E.a.R.L to show that it is connected. If the tick isn't present, check the USB connection.

Click on "Start Scratch" and the E.a.R.L Scratch Helper will launch Scratch for you. Just click on "More Blocks" and you will find the custom blocks needed to control E.a.R.L 2. You can use these blocks to build your program.



You must use an "Event" to start your program. When you have finished creating your program, simply trigger the event you have chosen. In this example, click on the green flag to send the code to E.a.R.L 2. E.a.R.L 2 will make a sound to confirm the program has transferred. You can now unplug E.a.R.L 2 from your PC and press "GO" to run the program. Please note that the motors are disabled when E.a.R.L 2 is connected to a computer.



To find out more about how you can use Scratch, including new advanced blocks, download the free learning resources and getting started guides at:  
 UK: [www.hope-education.co.uk/earl-has-landed](http://www.hope-education.co.uk/earl-has-landed)  
 International: [www.findel-international.com/earl-has-landed](http://www.findel-international.com/earl-has-landed)

## Important information:

**WARNING** choking hazard - small parts not suitable for children under 3 years.

**WARNING** strangulation hazard - USB lead should only be used by an adult.

Please retain these instructions for future reference.

Non-rechargeable batteries are not to be recharged.

Rechargeable batteries are only to be charged under adult supervision.

The supply terminals are not to be short-circuited.

Regularly examine for damage to the cord, plug, enclosure and other parts. In the event of any damage, the toy and charger must not be used until the damage has been repaired.

Batteries should only be replaced by an adult.

Do not allow E.a.R.L 2 to come into contact with water or other liquids.

In the event of a static discharge, your E.a.R.L 2 may malfunction. In this case, please switch it off and then back on again to reset it.

## Care and maintenance:

If necessary, wipe E.a.R.L 2 gently with a clean damp cloth. Do not use solvents or abrasives.

## Specification:

Battery type	Rechargeable 3.7v lithium battery
Battery capacity	1.2AH
Charging time	3 hours (typical)
Battery life	8 hours in normal use
Turn accuracy	90° ± 1°
Forward/backward	15cm ± 0.5mm
Program memory	250 steps
Sound memory	300 s
Sound format	MP3
Lights	RGB LEDs

## Warranty information

E.a.R.L 2 is guaranteed for a period of one year from the date of delivery to the customer. This warranty does not apply to defects resulting from the action of a user such as misuse, improper wiring, any operations outside of its specification, improper maintenance or repair, or unauthorised modification.

Our liability is limited to repair or replacement of the product. Any failure during the warranty period should be referred to our customer services team.



### Disposal of Waste Electrical and Electronic Equipment (WEEE)

Do not dispose of this product with household waste. For the proper treatment, recovery and recycling please take this product to an appropriate collection point. If you are unsure where this is, contact your Local Authority. By disposing of this product correctly you will be providing positive help to the environment.



### WARNING!

Not suitable for children under 3 years.  
Small parts - choking hazard



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**HOPE**  
is all you need

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