photon

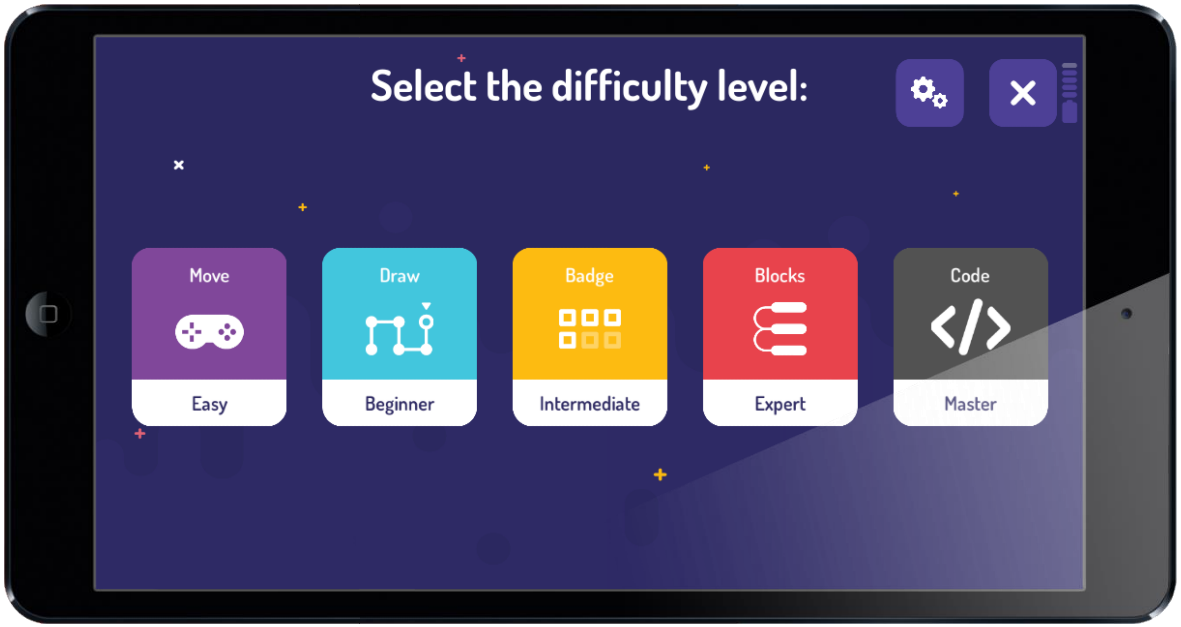
CODING

PHOTON CODING APP	3
DOWNLOADING	4-5
TURNING ON AND CONNECTING WITH ROBOT	6-8
FAULTY CONNECTION WITH ROBOT	9
UPDATE	10
STARTING SCREEN	11
CHARGING	12
INTERFACES	13
PHOTON DRAW	14-15
PHOTON BADGE	16-17
PHOTON BLOCKS	18-19
PHOTON CODE	20-21
INTERACTIONS	22
QUESTIONS AND ANSWERS	23-31

PHOTON CODING APP

In **Photon Coding App** – opposite to **Photon Robot or Photon Edu App** – children do not have to accomplish any tasks.

In **Photon Coding app** children have free access to all programming interfaces and can program Photon according to their wished. The only limit is their imagination. The ways of programming Photon depend on children knowledge and preferences.



DOWNLOADING

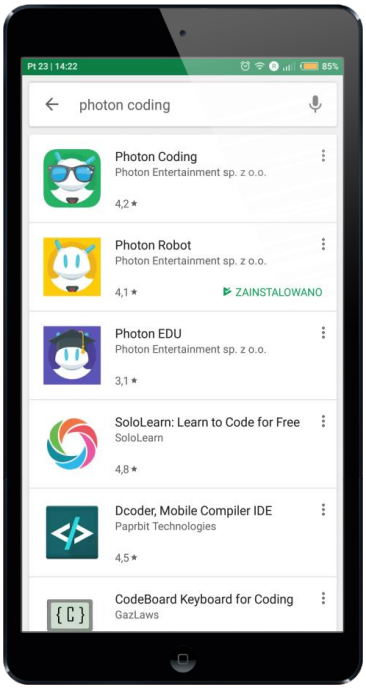
Devices with Android system

GET IT ON Google Play

1. In searching bar type: „Photon Coding". From the list of apps, choose the one with green icon and press on it.

2. The next step is to press „download". If your device is not supported by this app, google play store will inform you about it.

3. When downloading is completed, you can click „open" button and start your coding journey.

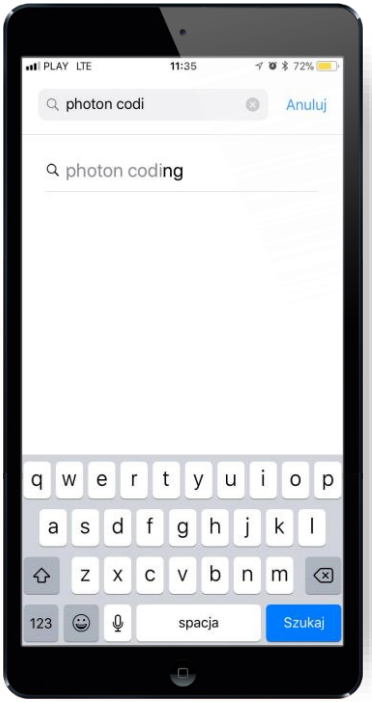


DOWNLOADING

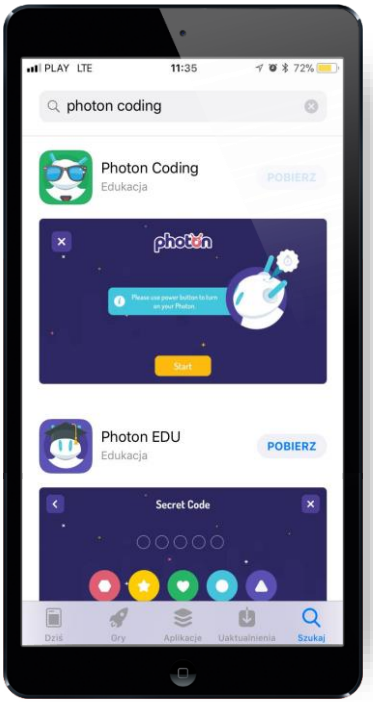
Devices with iOS system

Download on the App Store

1. Type: „Photon Coding" in the searching area.



2. Find Photon Coding green icon on the list of apps and click „Download" button in order to download the app..

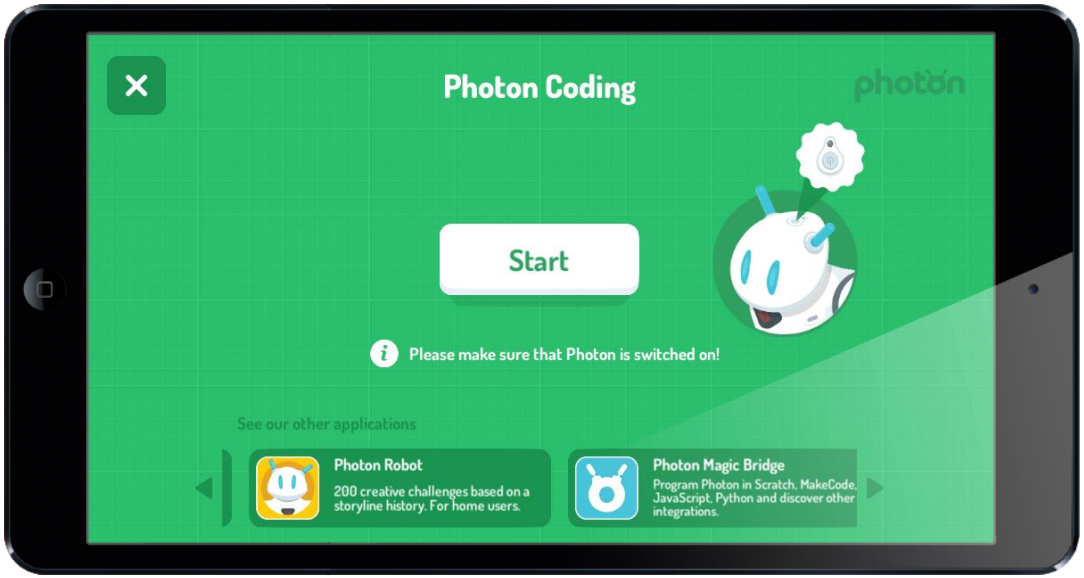


3. Now go back to your main screen and open the app.

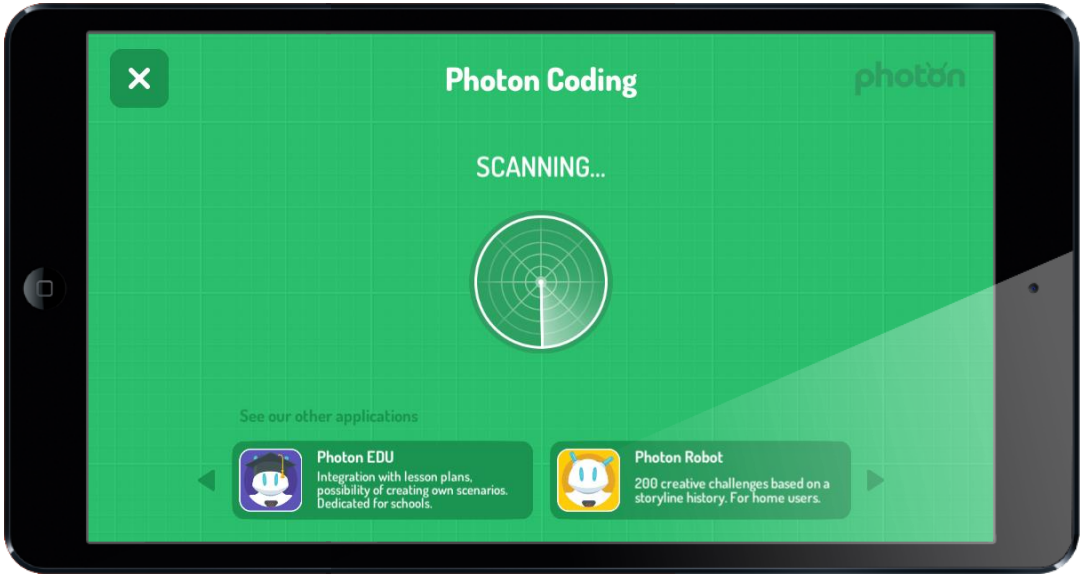
TURNING ON AND CONNECTING WITH A ROBOT

To turn your Photon on, press and hold the switch on button placed on the robot's head for 2 seconds. Robot's antenae and eyes will start blinking.

Turn on the app and press „Start" on the first screen.

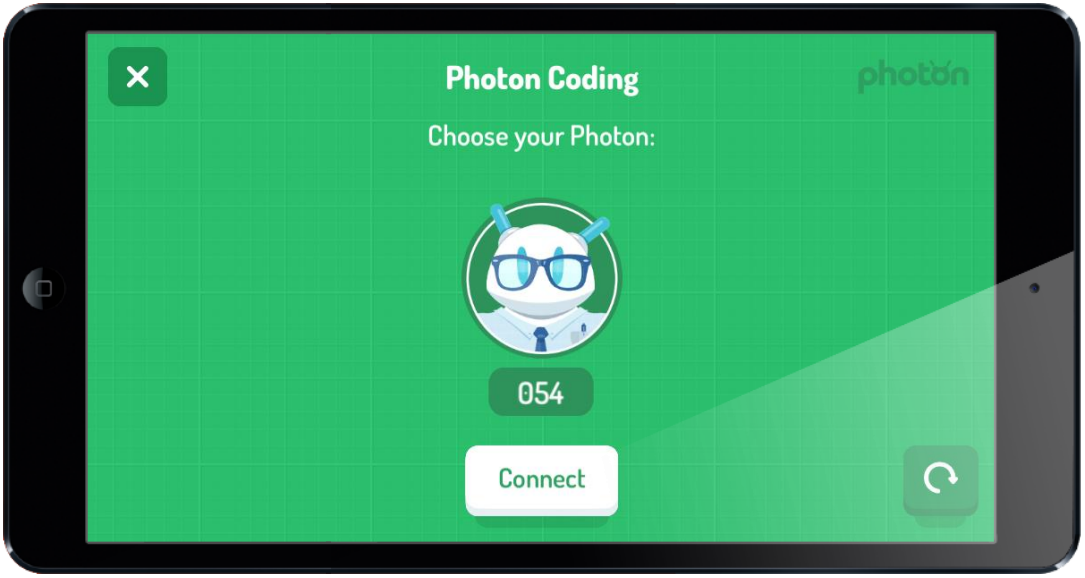


Application will search for active robots.

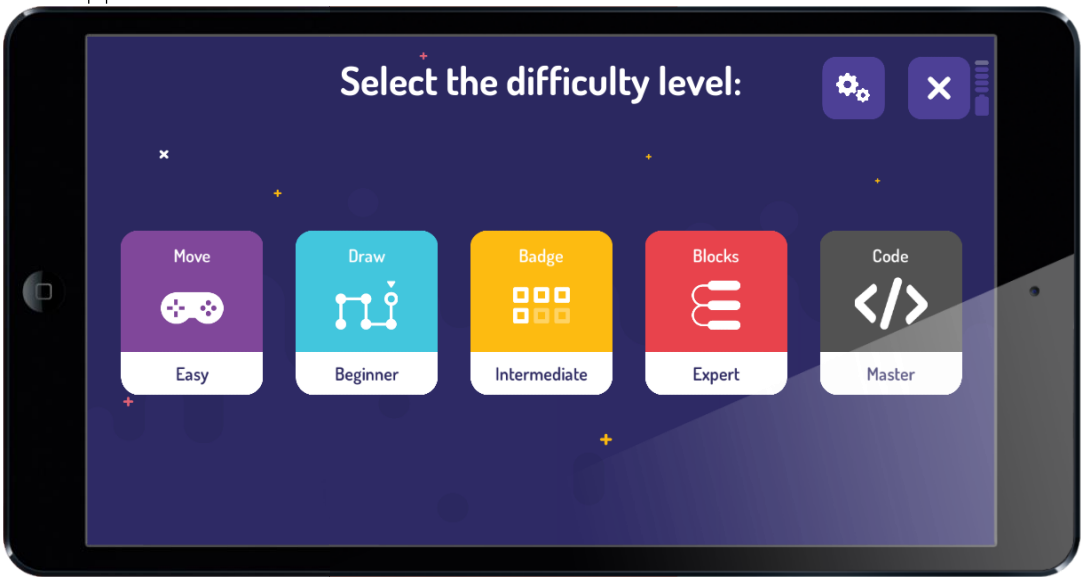


Each robot has its own ID number that helps to identify robots in the app. ID numer consists of 3 digits and it is placed on Photons bottom part.

Choose the robot you would like to connect your application with and click ‚Connect'



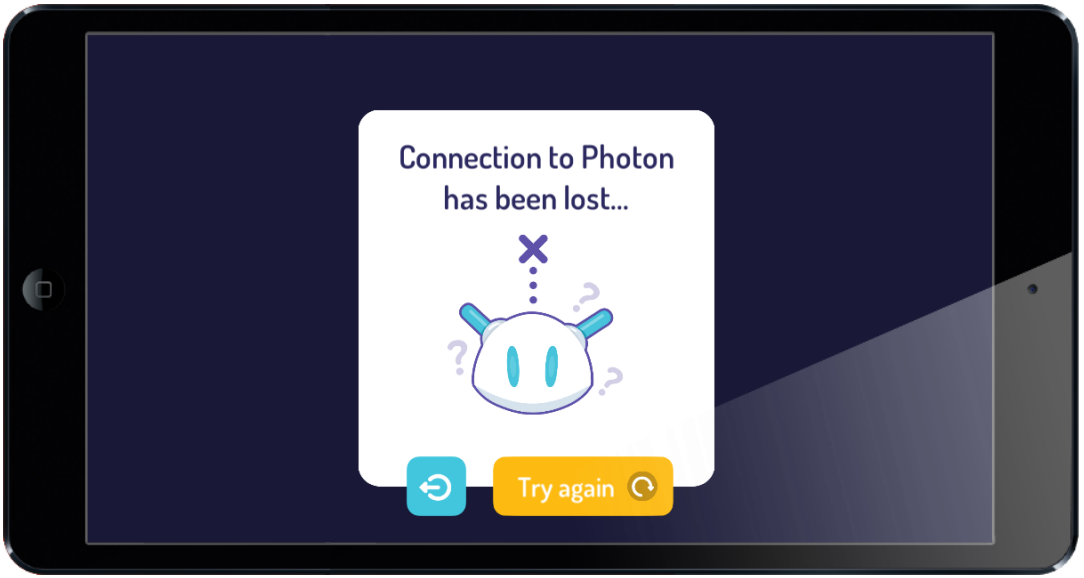
When connection is established a, „Connected" communicate will appear on the screen. Photons antennae and eyes will stop blinking and the next screen will appear.



FAULTY CONNECTION WITH ROBOT

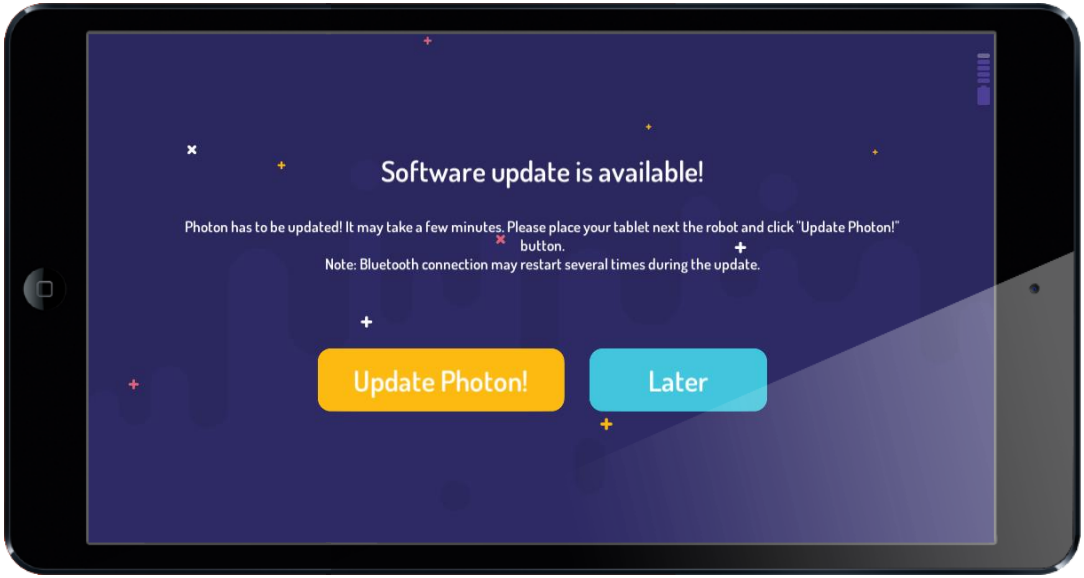
If you cannot connect with a robot or the application is not detecting your Photon, you should turn the robot and your mobile device off and turn them back on. If this is not helping, please check the FAQ section on our website https://photonrobot.com/faq/. You can find a lot of helpful information there.

If nothing helps, please contact ou Support Centre email at: support@photonrobot.com via phone at: +48667254321.



UPDATE

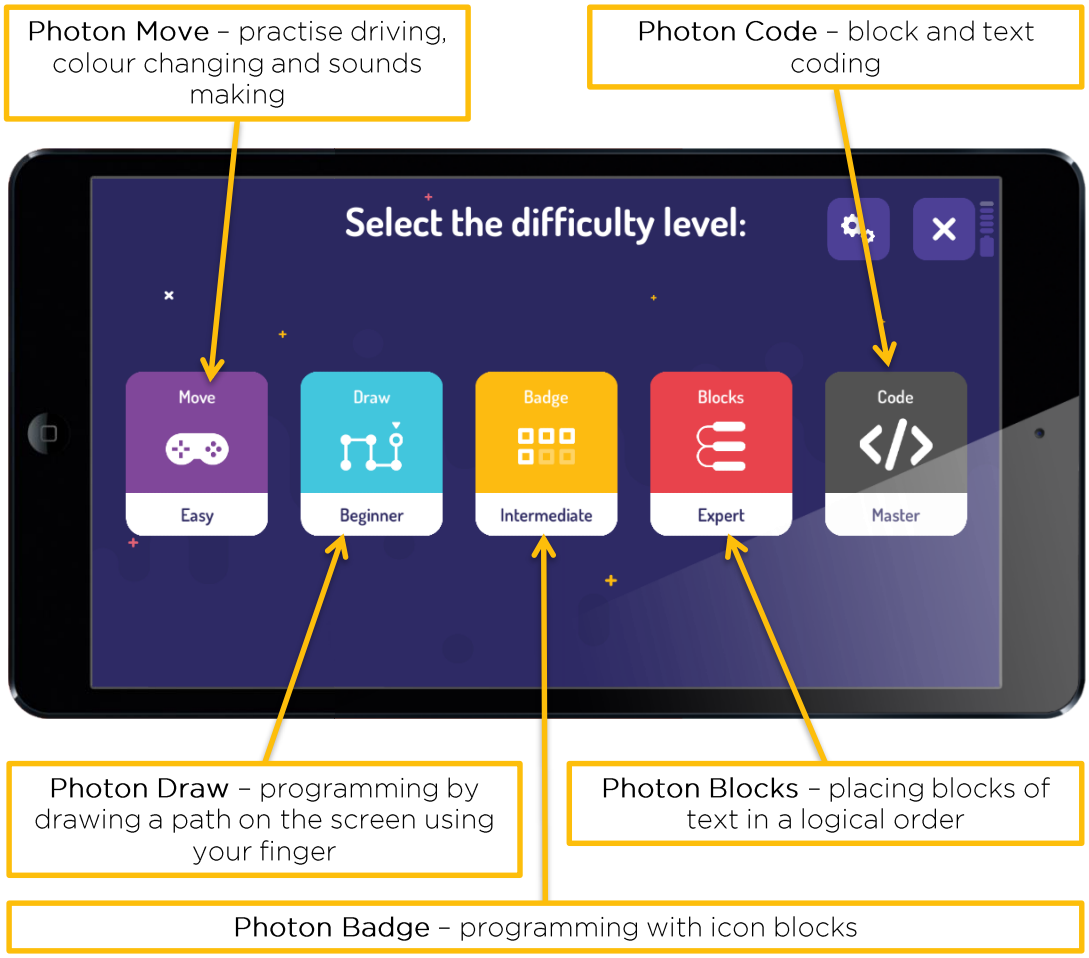
From time to time robot's software needs to be updated. Application will inform you about this fact by showing the following informative screen:



Do not turn your robot and mobile device off while the update is in progress. After clicking the „Update Photon!" button new software will be installed. While updating, Photon's antennae and eyes will be blinking irregularly. After a couple of minutes Photon will make a turning off noise and turn on again. When the update is finished, a communicate will appear on the screen.

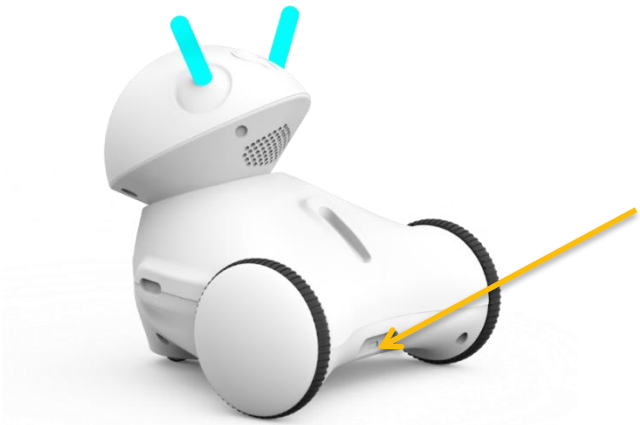
STARTING SCREEN

After you run the app, the below screen will be displayed. You can choose the interface you would like to use. The detailed descriptions of the interfaces can be found at pages 13-24.



CHARGING

Robot Photon as any other electric device needs to be charged. One full charging (max. 2h 45min) gives you up to 8 hours of play. If Photon requires charging, it will send signals such as blinking antennae and ears and being hungry sound („am, am"). You can charge Photon with any standard charger with micro-usb plug (Wire with micro-usb plug included)



Charging plug is located in the rear. When Photon is being charged, its antennae are blinking using red colour. When battery is full Photon' antennae' colour changes to green. When this happens, you can unplug your robot and start playing.

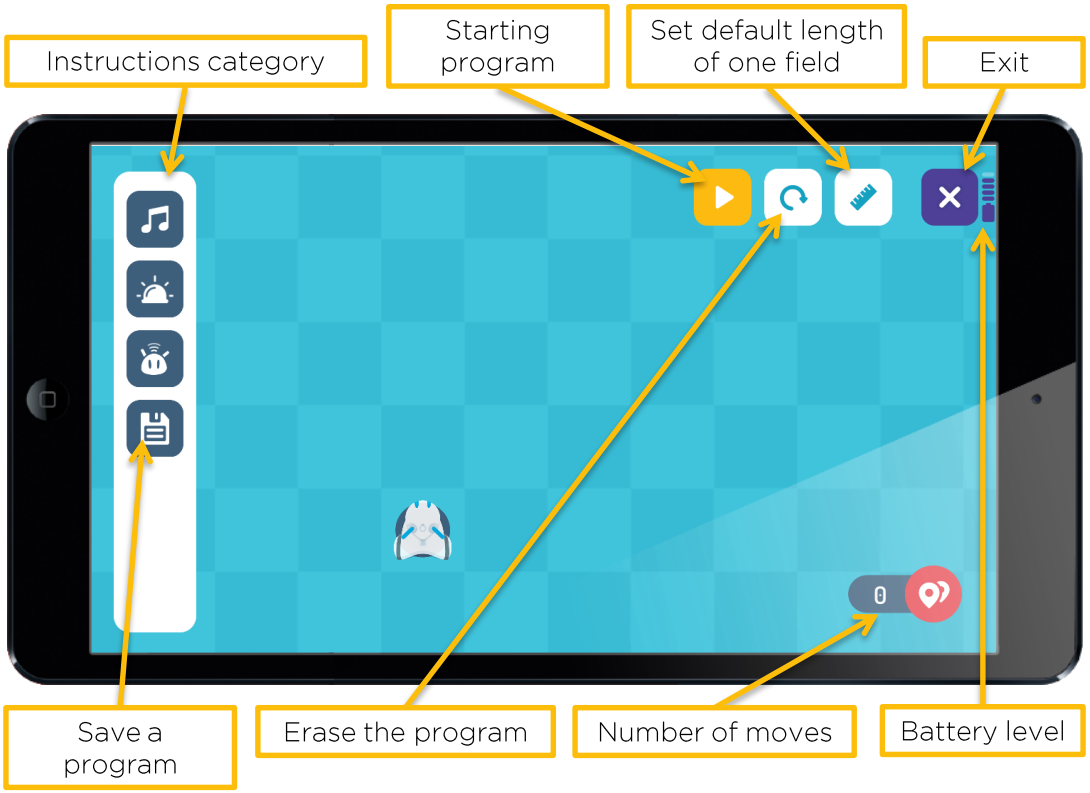
Robot has a lithium-ion 2600 mAh battery. It allows you to play for 8 hours straight. Charging time is no longer than 2h 45min.

INTERFACES

All the Photon applications were created to be as user-friendly and as simple and intuitive as possible. Each of Photon apps has the same symbols placed in the same places thanks to which children do not need to learn how to use of the applications separately.

All interfaces mentioned below are available in all 3 Photon applications: Robot, Coding and Edu.

Below you can see the icons, that do not change their location – no matter which app you use.

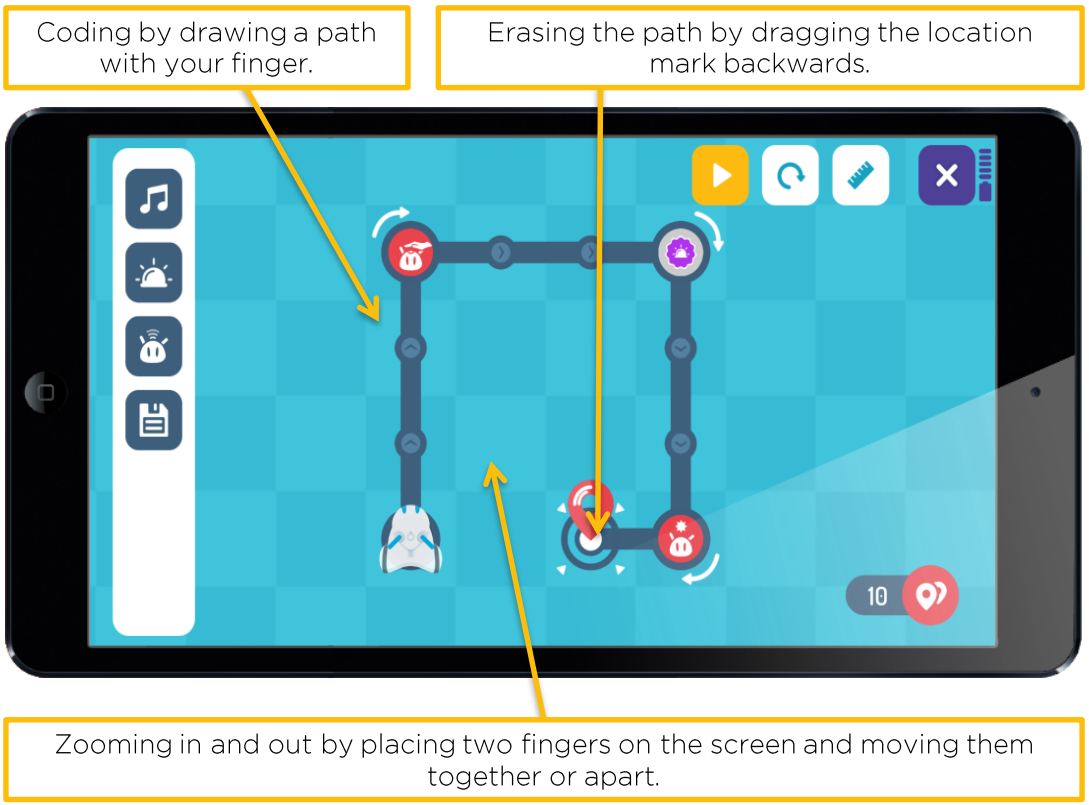


PHOTON DRAW

Photon Draw was created for the youngest children. Even 3-4 years old kids are able to code by drawing a path on the screen by using their finger to do so.

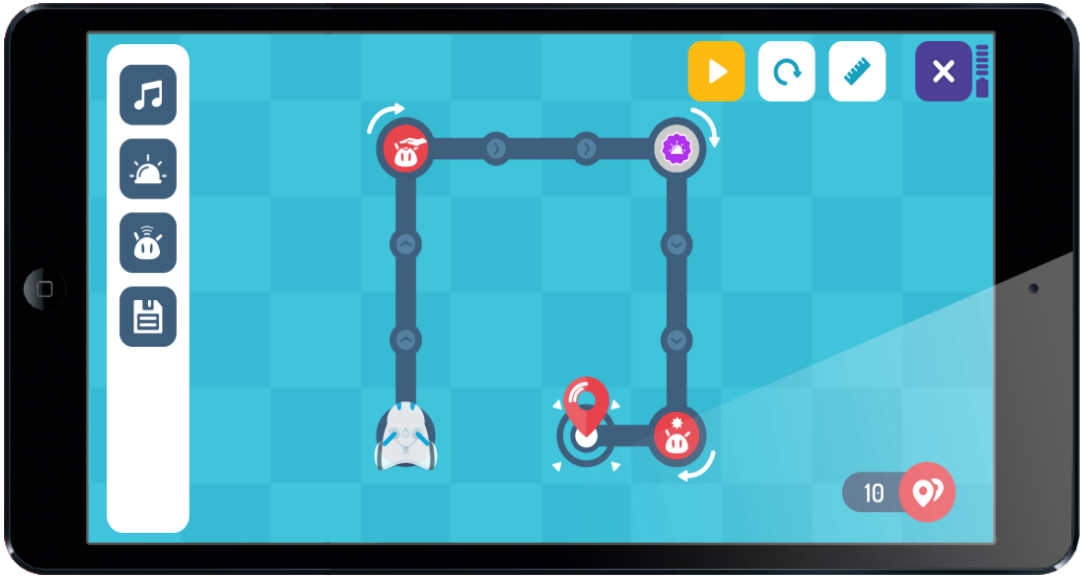
Develops:

- Manual skills
- Spatial orientation
- Understanding the logical order of events



PHOTON DRAW

When your path is ready, you can place actions and interations with Photon by drag and dropping them onto the circular areas on the path. Choose sounds, colours or interactions from the left side panel.



Side panel categories are in the same location in all Photons apps interfaces..

Sounds. Sounds of animals, emotions and custom.

Colours. Colours of antennae, eyes or both.

Interactions. Interactions based on Photon's sensors.

PHOTON BADGE

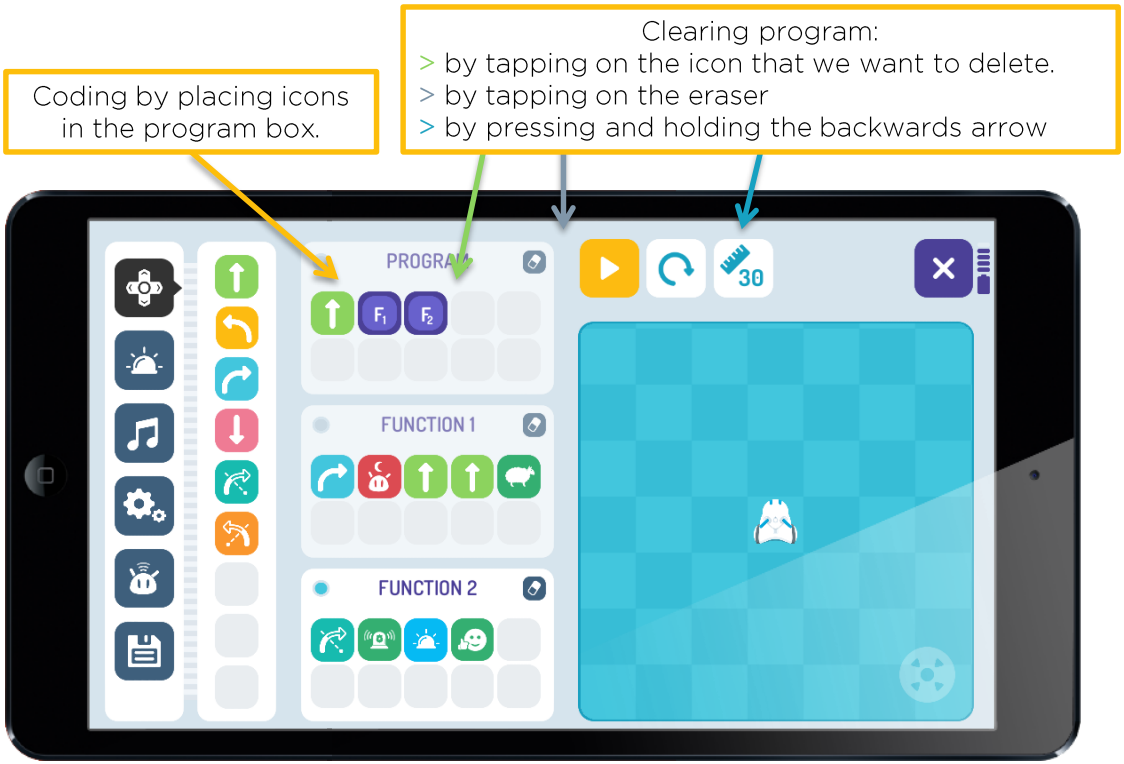
Photon Badge was created for children who can understand more complicated logical sequences. Projecting robot's program with simple instructions symbols.

Develop:

Spatial imagination

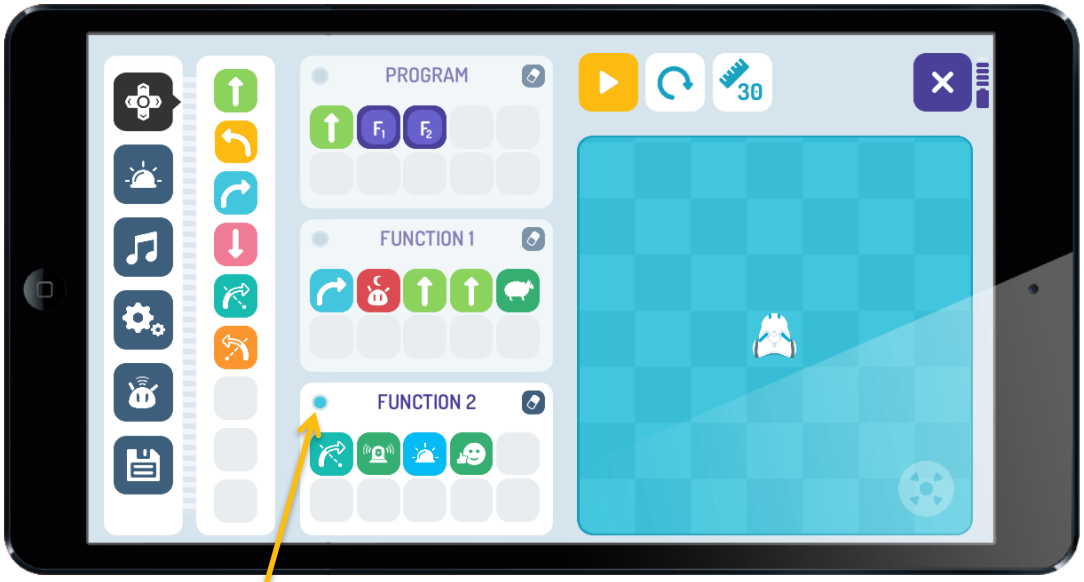
Planning, predicting

Algorithmics (repeatability of activities)



PHOTON BADGE

Blocks can be drag and dropped to a chosen function box. One of the function boxes can also be "highlighted„ so that a click on the appropriate icon would automatically place the icon in the selected function.



FUNCTION HIGHLIGHTING

Moves. Movement icons.

Colours. Colours of antennae, eyes or both.

Sounds. Sounds of animals, emotions and custom.

Functions. Function 1 and 2 icons.

Interactions. Instructions connected with Photon's sensors.

PHOTON BLOCKS

Photon Blocks was created for children that already know how to read. At this point of development, children are able to understand complex operations by placing colourful block in a logical order (from the top to the bottom).

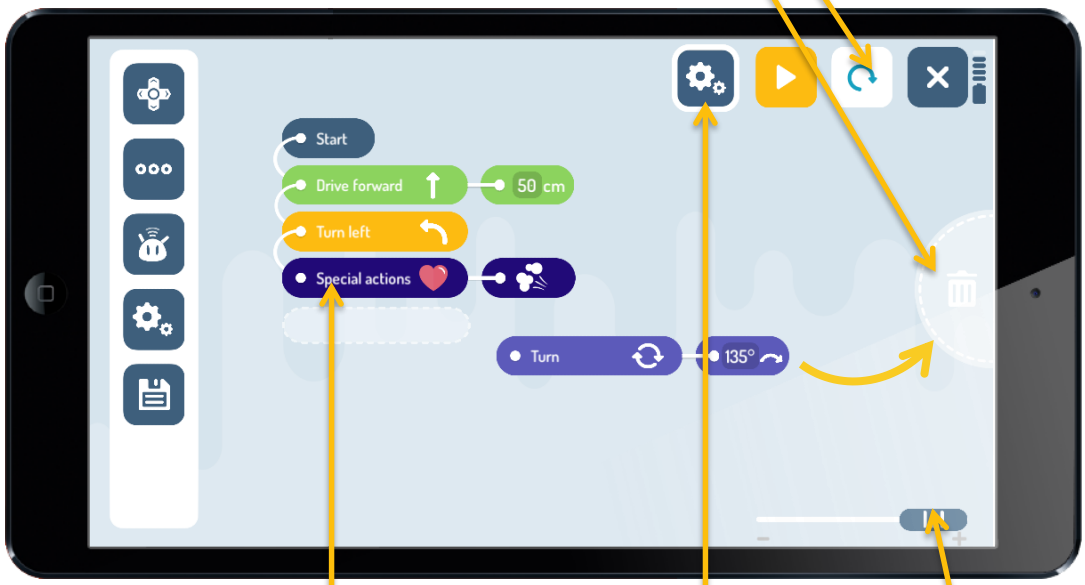
Develops:

Creating complex programs

Exisiting programs optimisation

Early bugs detection

Erasing the program:
• by pressing and holding the arrow
• by dragging the chosen instruction into the bin that appears on the right side of the screen



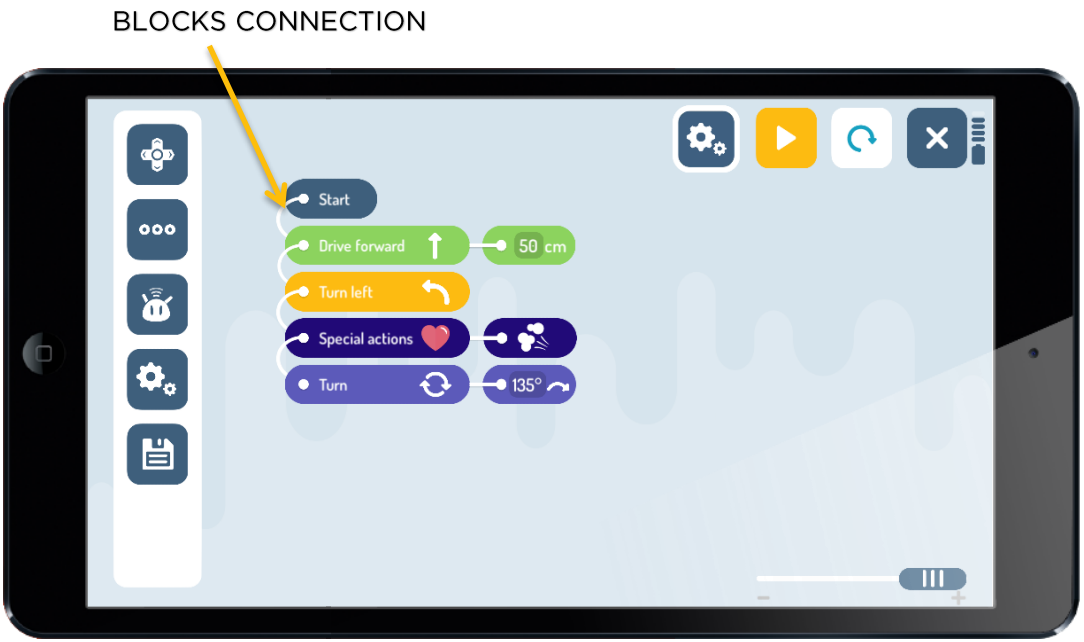
Coding by dragging colorful blocks

Switching between functions screens

Zoom in/out

PHOTON BLOCKS

When placing the block make sure that it is well connected to another one. If blocks are not connected propetly Photon would not execute the non-connected program part.



Move. Movement blocks.

Colours, Sounds and Special Actions. Colours of antennae, eyes or both, sounds of animals and emotions, special actions.

Interactions. Blocks connected with Photon's sensors.

Functions. Function 1, 2, 3 blocks, brake block.

PHOTON CODE

Photon Code was created to introduce children to real coding world. Kids drag blocks with part of code and place them in a correct order.

Develops:

- Knowledge of structure and syntax of the programming code
- Complex algorythmics
- Using sensors in code creating

Clearing program:
• by pressing and holding arrow
• by dragging the chosen instruction into the bin that appears on the right side of the screen

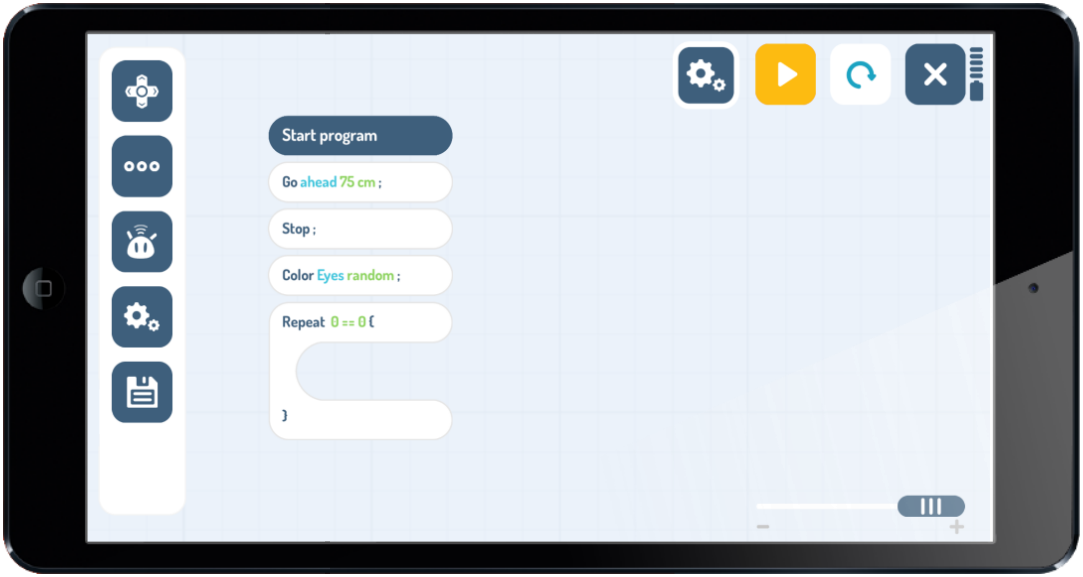
Coding by dragging colourful blocks

Switching between functions screens

Zoom in/out

PHOTON CODE

This interface is simillar to Photon Blocks but instead of symbols, the blocks are a part of a text code.



Move. Movement blocks.

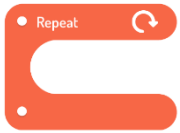
Colours, Sounds and Special Actions. Colours of antennae, eyes or both, sounds of animals and emotions, special actions.

Interactions. Blocks connected with Photon's sensors.

Functions. Function 1, 2, 3 blocks, brake block.

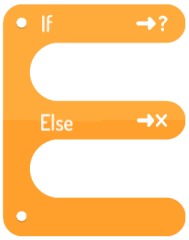
INTERACTIONS AND SENSORS

Robot waits for specific event, then moves on to the next instruction.
e.g. Wait for touch, than go 10 cm forward.



Robot repeats the event that is placed inside the block
e.g. Repeat 4 times the action of ,turn left.;

If a specific condition occures the robot follows the instruction which is placed inside the block.
e.g. If it is dark, change colour to blue.



If a specific condition occures the robot follows the instruction which is placed inside the upper part of the block, otherwise follow the instruction which is placed inside the lower part of the block.
e.g. If it is dark, change colour to blue, if not change colour to yellow.

Waiting time

Detect obstacles closer than/futher than

Reaction to touch or its lack

Reaction to intensity of light

Reaction for noise or its lack

Line tracking