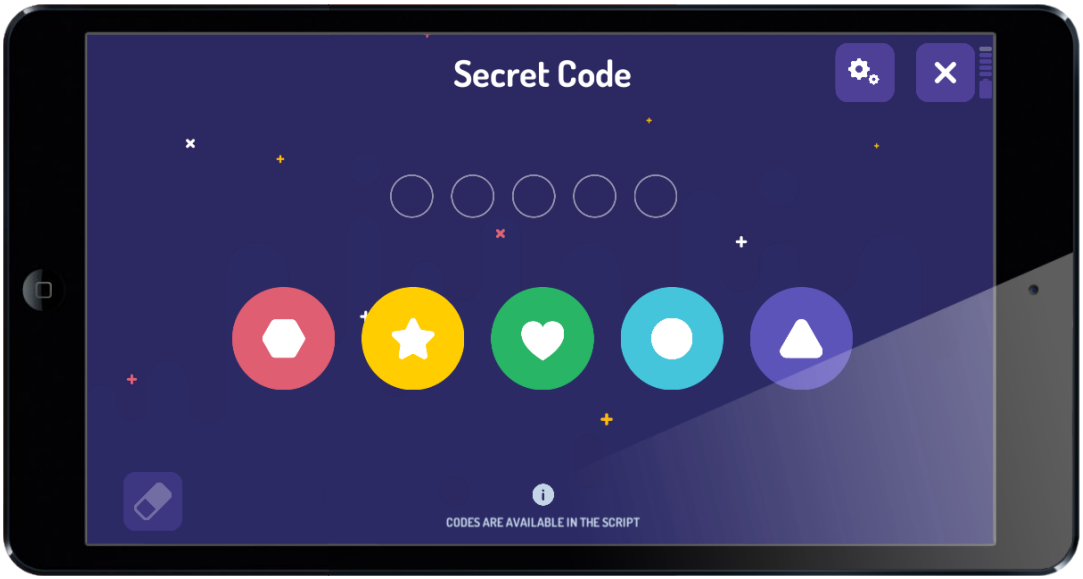
photon

EDU

PHOTON EDU APP

Photon Edu app was created for schools and other educational institutions. It helps teachers conduct interesting lesson with 100% control of the application features that children have access to at the moment.

Application is fully integrated with Photon lesson plans.. Each lesson plan provides certain coding knowledge and helps practicing specific skills. The access to the electronic version of Photon Lessons Plans is provided with each Photon robot box.



Robot Photon is a modern didactic tool for educators. With guidance of a teacher, it encourages children to actively participate in classes.

DOWNLOADING

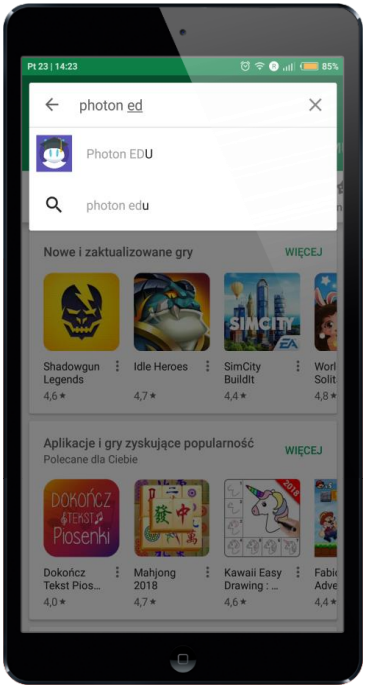
Devices with Android system

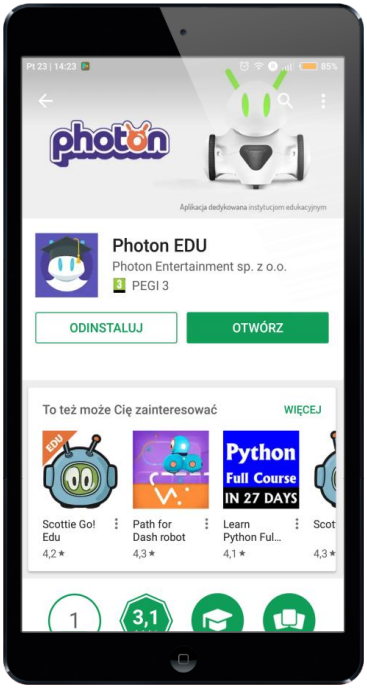
GET IT ON Google Play

1. Type: „Photon EDU” in the searching area.

2. The next step is to click „download”. If your device is not supported by the app, Google Play store will inform you about this fact.

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



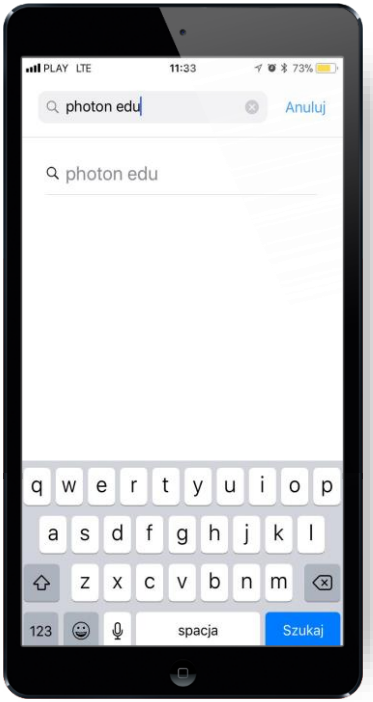


DOWNLOADING

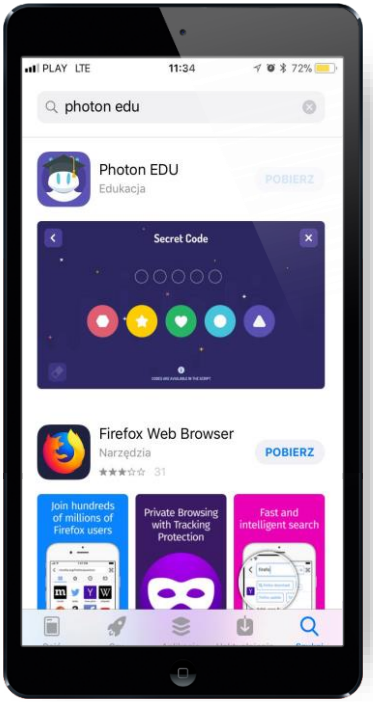
Devices with iOS system

Download on the App Store

1. Type: „Photon EDU” in the searching area.

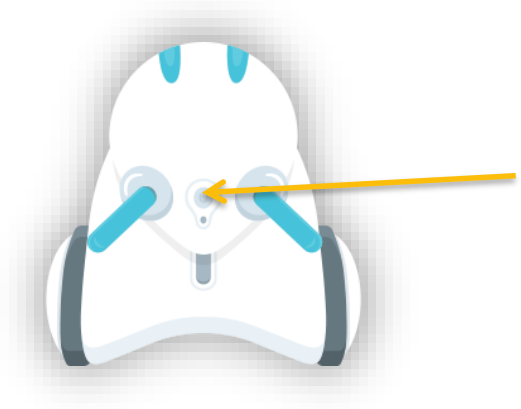


2. Find Photon EDU purple icon on the list of apps and click „Download” button in order to download the app..



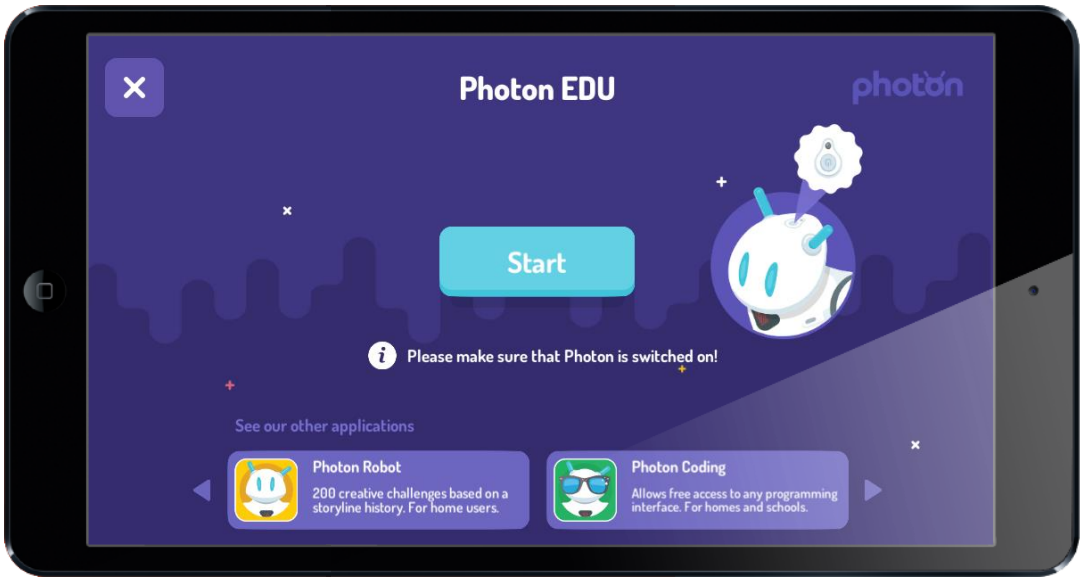
3. Now go back to your main screen and open the app.

TURNING ON AND CONNECTING WITH ROBOT

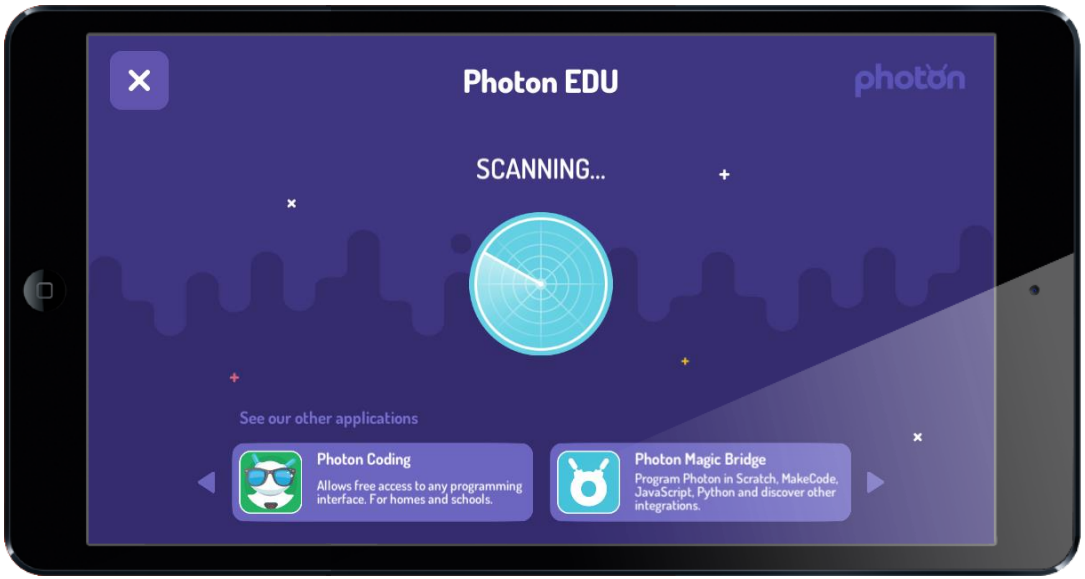


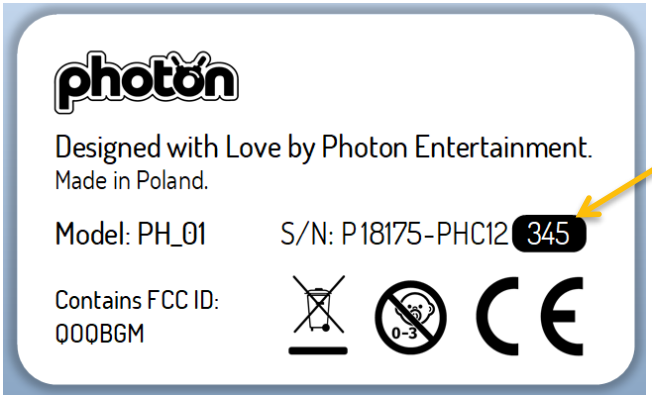
To turn on your Photon, press and hold the switch on button placed on the robot's head for 2 seconds. Robot's antenae and eyes will start blinking.

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



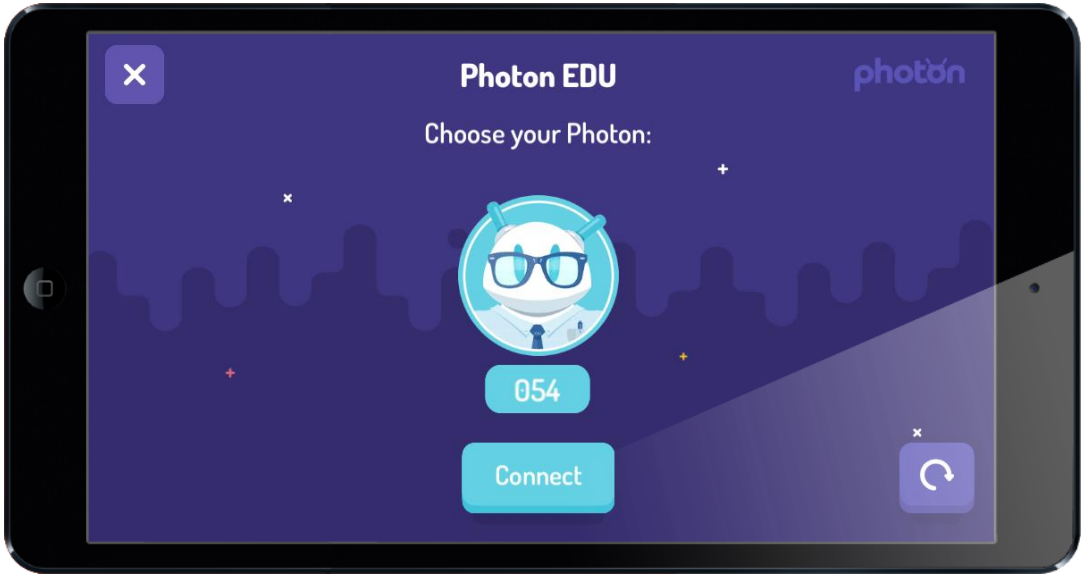
Application will search for active robots.



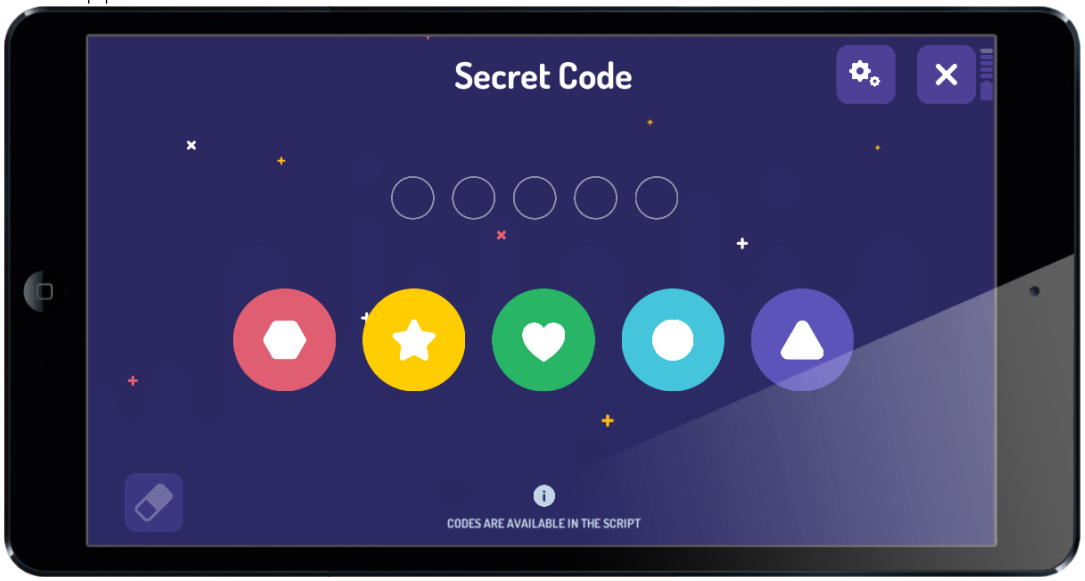


Each robot has its own ID number that helps to identify robots in the app. ID numer consists of 3 digits and it is placed on Photons bottom part.

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



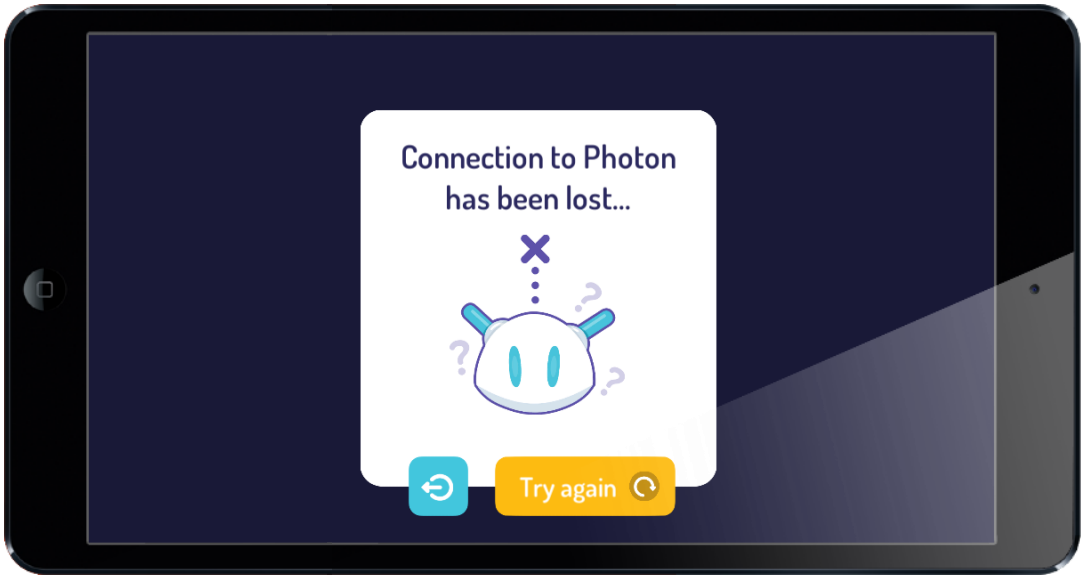
When connection is established a, „Connected" communicate will appear on the screen. Photons antennae and eyes will stop blinking and the next screen will appear.



FAULTY CONNECTION WITH A ROBOT

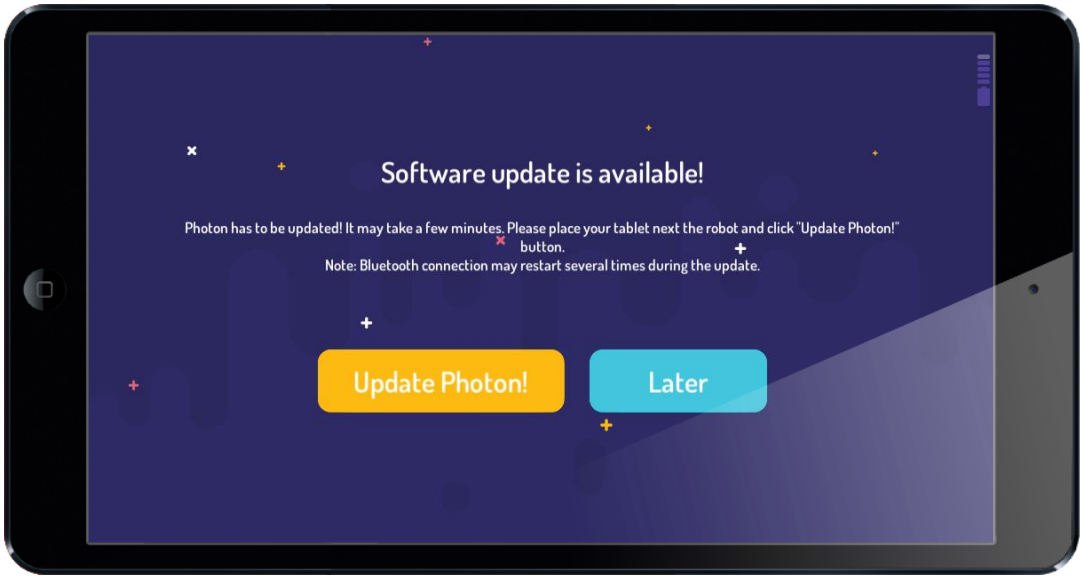
If you cannot connect with a robot or the application is not detecting your Photon, you should turn the robot and your mobile device off and turn them back on. If this is not helping, please check the FAQ section on our website https://photonrobot.com/faq/. You can find a lot of helpful information there.

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



UPDATE

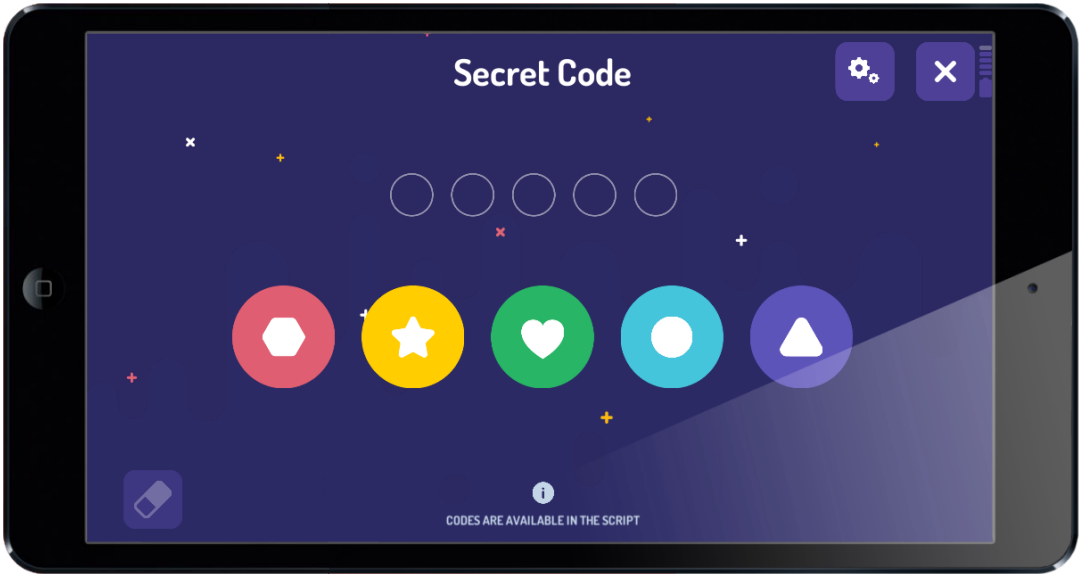
From time to time robot's software needs to be updated. Application will inform you about this fact by showing the following informative screen:

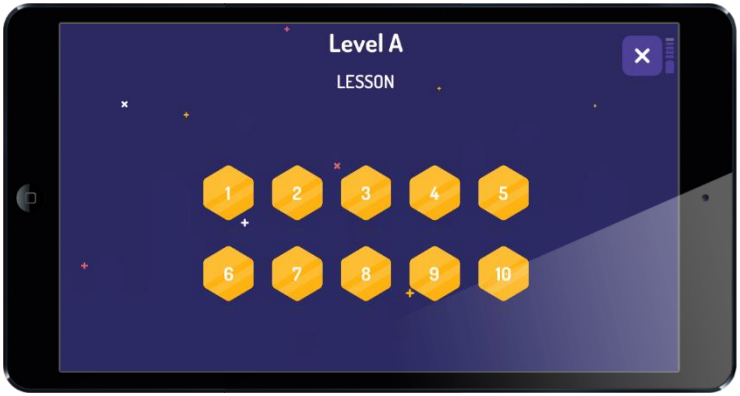


Do not turn your robot and mobile device off while the update is in progress. After clicking the „Update Photon!" button new software will be installed. While updating, Photon's antennae and eyes will be blinking irregularly. After a couple of minutes Photon will make a turning off noise and turn on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

STARTING SCREEN

After correctly connecting the application with your Photon, a screen with Secret Code input will appear. Here you need to type a lesson plan code provided in Photon Lesson Plans booklet. Each lesson plan begins with a secret identification code. There are 3 types of secret codes – leading you to a chosen lesson, chosen interface or chosen level.





LEVEL A screen – here you can find a list of all 10 lesson plans included in the level A.

SAMPLE LESSON PLAN

LEVEL A - LESSON 7

Subject: „The Spring is coming" – consolidation of knowledge on the changes taking place in nature during Spring with the use of Photon, the educational robot.

Aims:

- To learn to use modern technology safely.
- To learn to understand proverbs,
- To create word associations with specific concepts,
- To translate visual sequences into motor sequences,
- To practice top-down attention and memorization,
- To improve hand-eye coordination,
- To develop concentration and auditory perception skills.

Educational aids:

- Photon the Robot,
- Tablet,
- Educational mat,
- Printed symbols of arrows,
- Printed weather symbols: sun, rain, storm, snow.

Sample scenario:

SPRING IS THE TIME OF THE YEAR...

„Spring is the time of the year, when it is summer in the sun, and winter in the shade."
Charles Dickens

Ask the children if they have ever been on holiday to a cold country. What was it like? Was it windy? Did it snow? Ask the children if they have heard a thunderstorm. What was it like? What was the rain like" Were they frightened? Read the proverb again and ask the children to explain its meaning. Once the children understand the proverb, hang printed arrows on the board and explain their meaning. Ask the children to focus on the weather characteristics. Explain the rules of the game to the children. On words:

„storm" – they should take a step forward.
„snow" – turn to the right.
„sun" – step back.
„rain" – turn to the left.

Ask children: *„Can we compare spring to soup? Yes, we can, because weather in spring is a mixture of sun, rain and sometimes snow, all mixed together like vegetables in a soup. Please stand in front of me in a row. I will now be preparing soup. I am adding some sun, then the storm to the pot. I am adding two pinches of snow and three teaspoons of rain„.*

Initially it is difficult for children to turn without taking a step. After the first correctly performed sequence, choose a child to help you prepare the soup. Perform the movement sequence, as directed, together with the rest of the group.

SAMPLE LESSON PLAN

Note: The arrow symbols are taken from the application and are supposed to introduce the children to the new programming interface.

SIGNS OF SPRING

Ask six children to sit around the educational mat. Give one of them the robot and tell them to turn their back to the others. Ask another child to say one word associated with SPRING. The child holding Photon has to identify the speaker by his/her voice. The guessing child cannot say aloud who he/she thinks it is. Ask this child to put Photon on the mat and program its way to the identified person. If the guess is correct, choose another pair of children. Again, appoint the speaker and the guesser. Continue the game.

SPRING WAKES UP NATURE TO LIFE

Ask the children to stand in a circle, and you stand in the middle. Take Photon and stretch out your hands in front of you. Tell the children that today Photon will become an assistant of theLady Spring, whose task it is to wake up hibernating animals and bring plants back to life. Turn around with Photon and point at a child of your choice. Ask the child to use mime the following:

A bear waking up from sleep
Leaves bursting out of buds and appearing on trees
Birds coming back from warm regions of the world
Frogs waking up and jumping for joy
Sun gently warming up our faces
Flowers turning towards the sun
Children have fun playing in the playground.

Sample program:

SIGNS OF SPRING

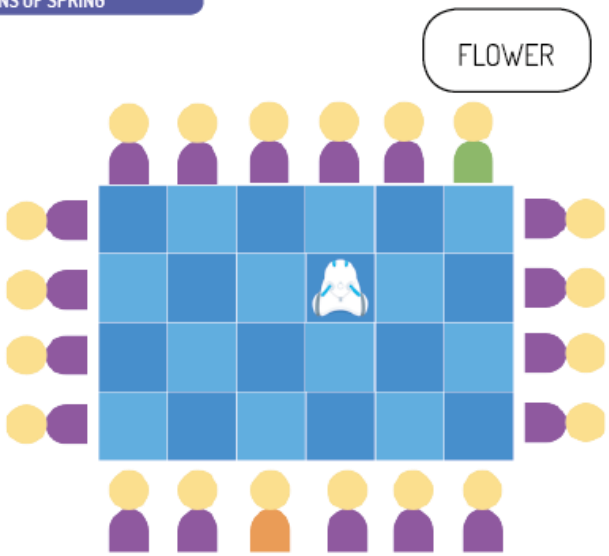
robot's path to the „speaker":

SAMPLE LESSON PLAN

Attachments:

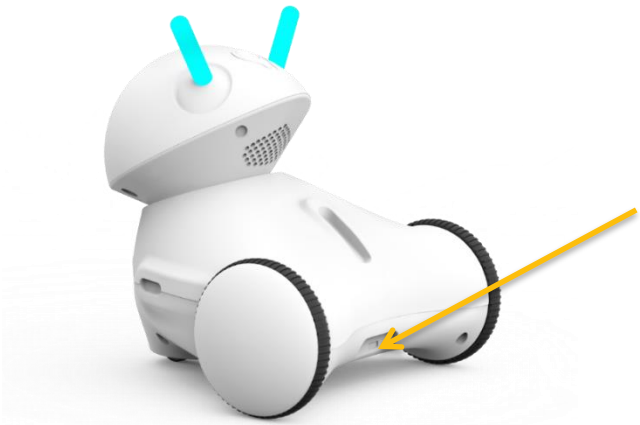
SPRING IS THE TIME OF THE YEAR

SIGNS OF SPRING



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.

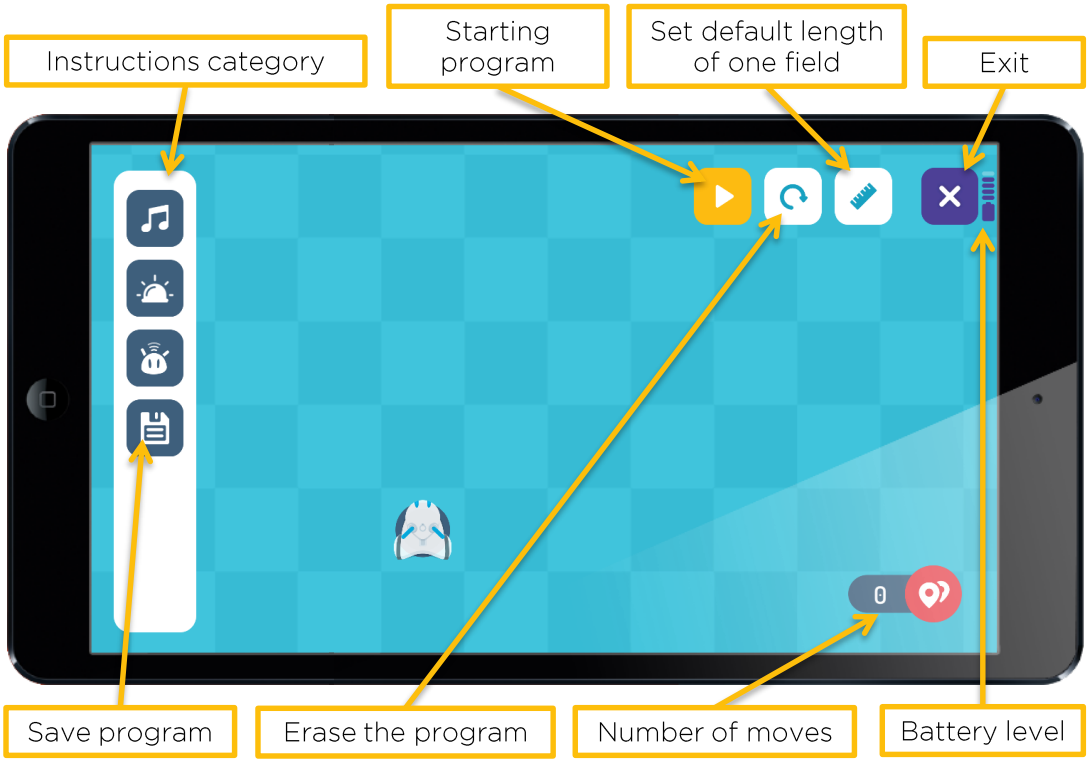
Robot has a lithium-ion 2600 mAh battery. It allows you to play for 8 hours straight. Charging time is no longer than 2h 45min.

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.

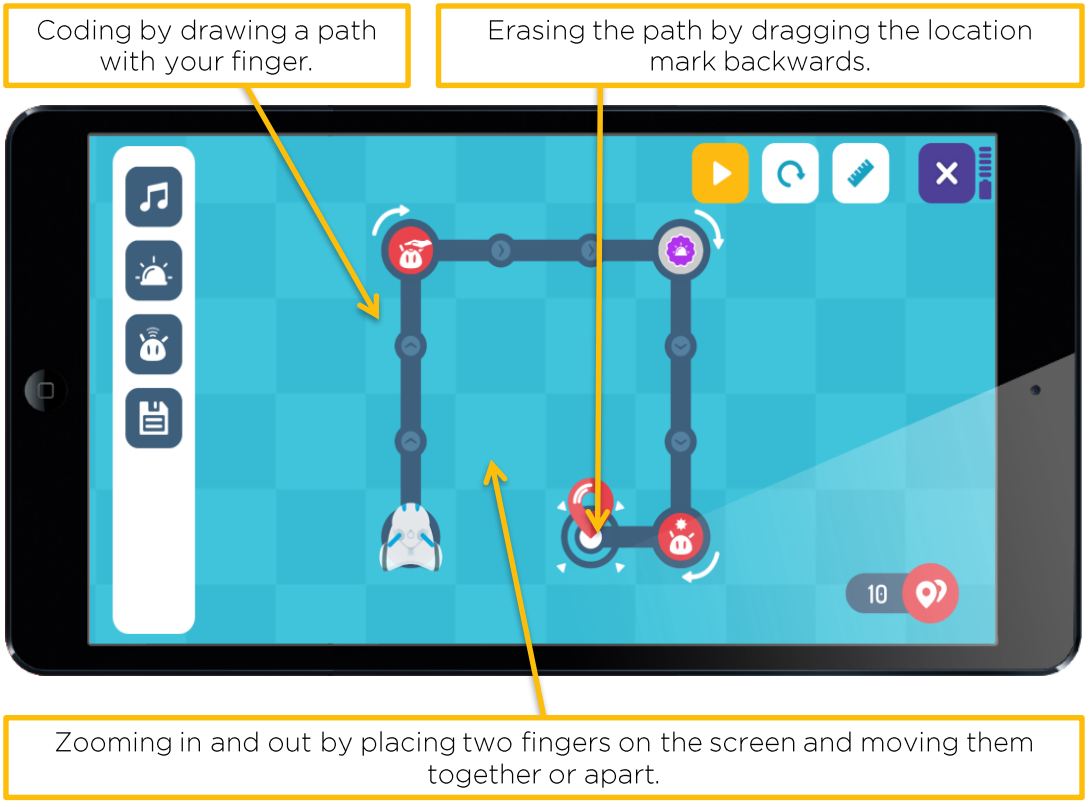


PHOTON DRAW

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.

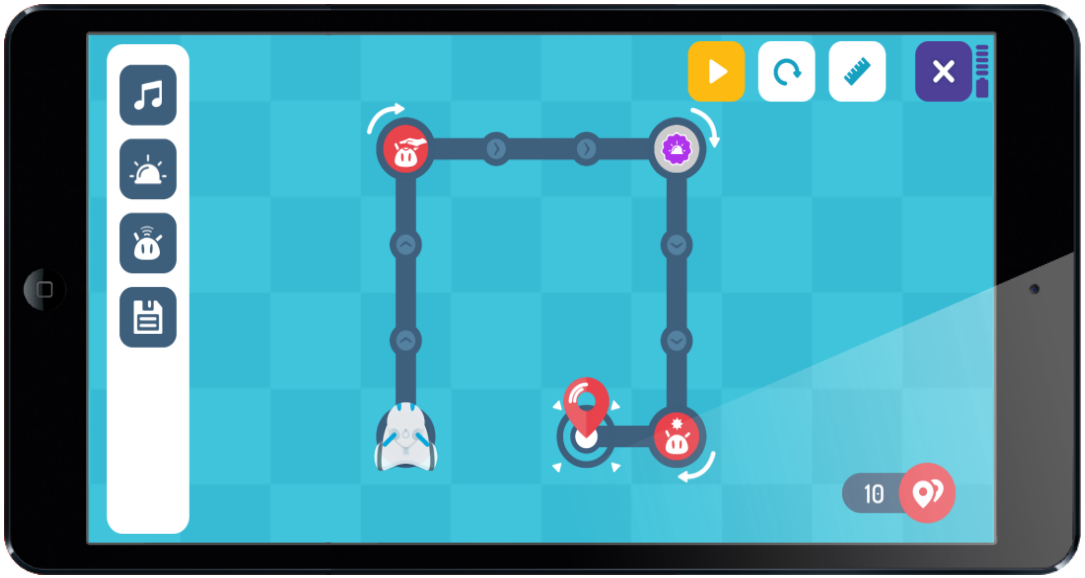
Develops:

- 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

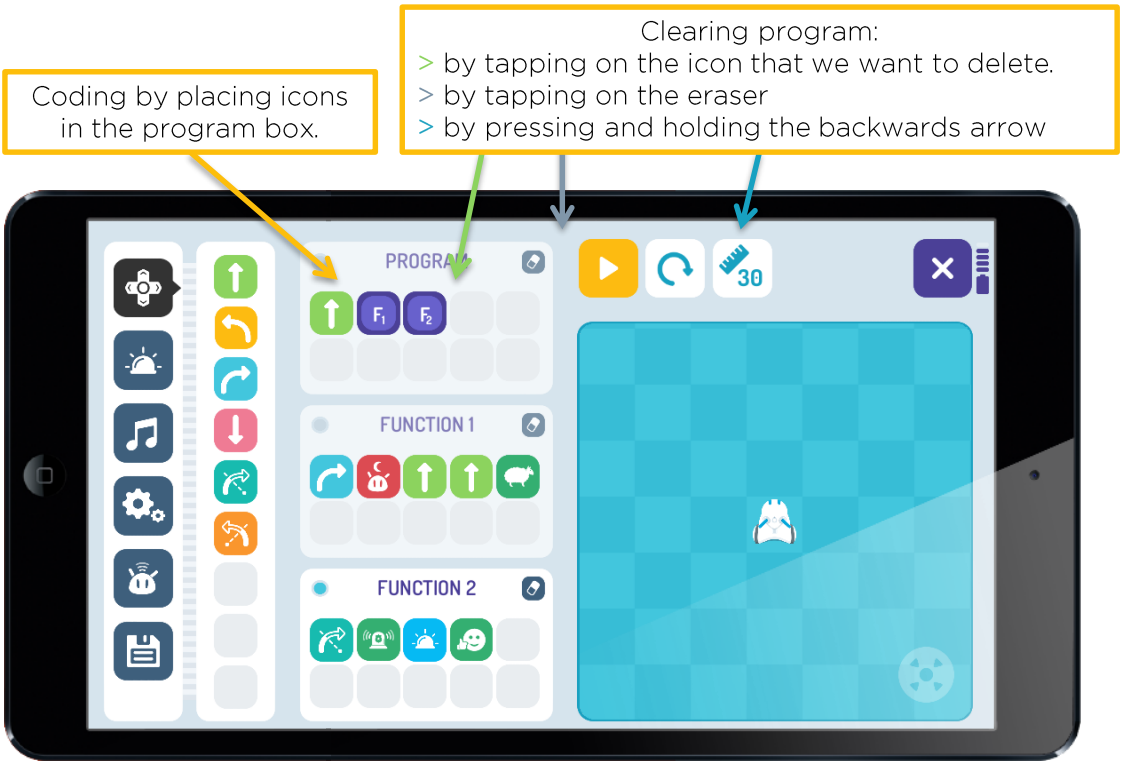
Photon Badge was created for children who can understand more complicated logical sequences. Projecting robot's program with simple instructions symbols.

Develop:

Spatial imagination

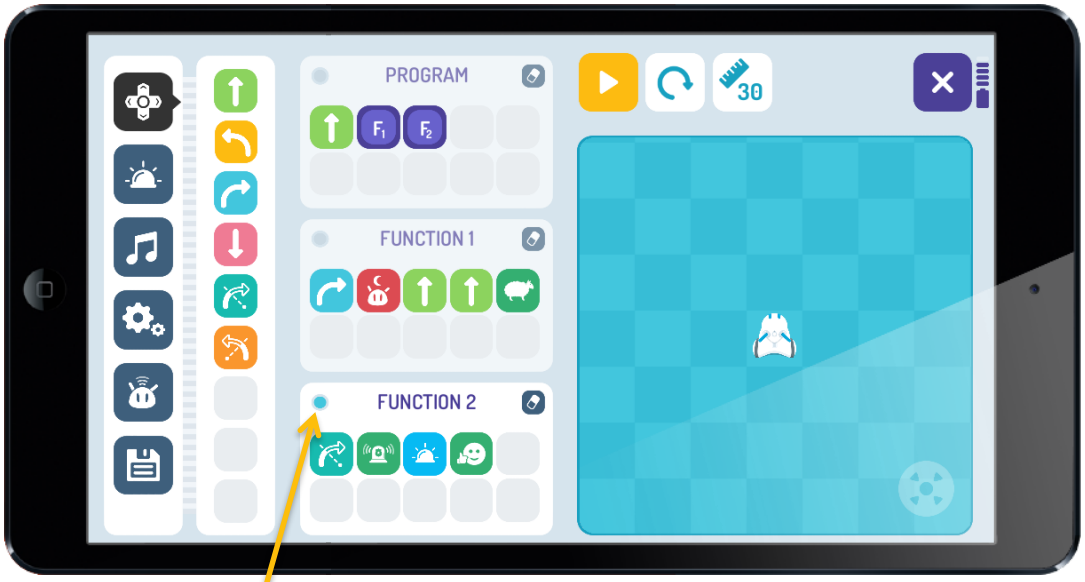
Planning, predicting

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.

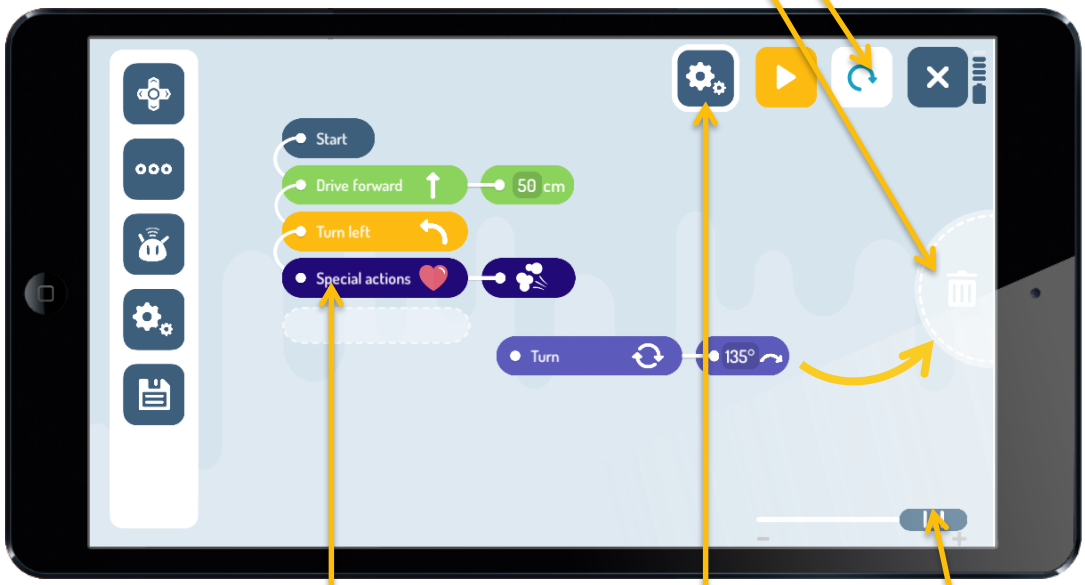
PHOTON BLOCKS

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



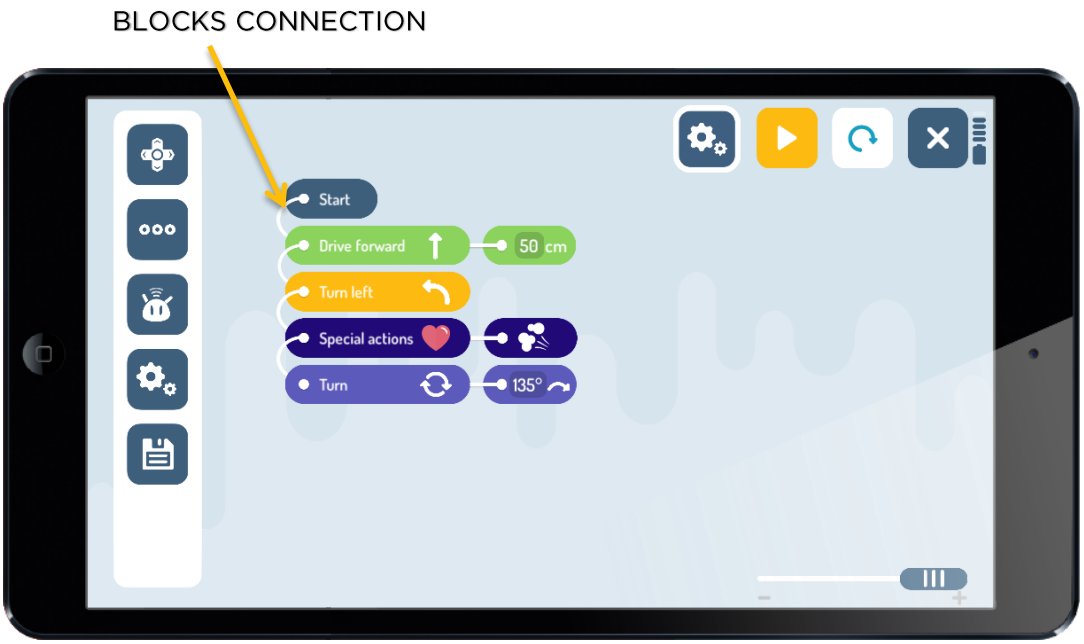
Coding by dragging colorful blocks

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

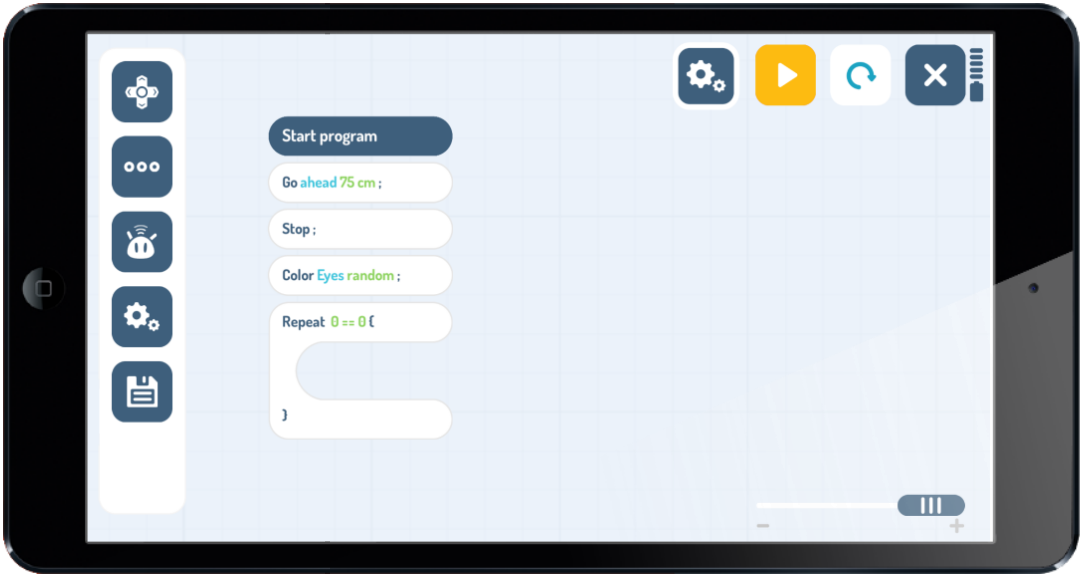
Coding by dragging colourful blocks

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.

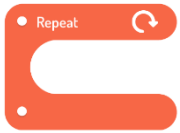
Colours, Sounds and Special Actions. Colours of antennae, eyes or both, sounds of animals and emotions, special actions.

Interactions. Blocks connected with Photon's sensors.

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

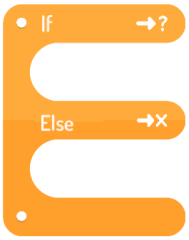
INTERACTIONS AND SENSORS

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