photon

BEFORE YOU START

www.photonrobot.com

BEFORE YOU BEGIN

Introduction to conducting classes with the **Photon** robot.

Dear Teacher!

We have prepared a series of scenarios, that implements the basic programming terms. In the following file, before you start, you will find all the information you need to get started with the prepared materials.

If you need more information, we will be happy to help if you contact us by email:

edu@photonrobot.com

Guide:

1. **What do you need to conduct classes with Photon?**
2. **I have a Photon and a device, what's next?**
3. **Connect to Photon and start your adventure with programming.**
4. **Useful codes:**
5. **How to use scenarios?**
6. **Understanding the lesson structure.**
7. **Using materials with all available programming interfaces (recommended for special interests group and programming schools)**

1. What do you need to conduct classes with Photon?

1. To conduct classes based on the programming scenarios, you need a Photon robot (the recommended number for programming scenarios is one robot for four people).

2. Tablet or Smartphone with Android or iOS system or computer with Windows and macOS system. Installed Photon Edu, Photon Coding or the Magic Bridge application (How to install the application - see below).

3. Photon educational mat or any other mat with the chessboard theme.

2. I have a Photon and a device, what's next?

Install the **Photon Edu**, **Photon Coding** or **Magic Bridge** application. How? Hardware requirements available on the website: www.photonrobot.com

Device with iOS system:

1. Go to **App Store** and find **Photon Edu.**

2. Enter the application marked with this icon:

3. Press „Download".

4. Do exactly the same with The Photon Coding app, which is marked with this icon:

Android device:

1. Go to **Google Play store** and find **Photon Edu.**

2. Enter the application marked with this icon:

3. Press „Install".

4. Do exactly the same with The Photon Coding app, which is marked with this icon:

Computers with Windows systems:

1. Go to the website: **www.photonrobot.com** and download the application on your computer:

3. Connect to Photon and start your adventure with programming.

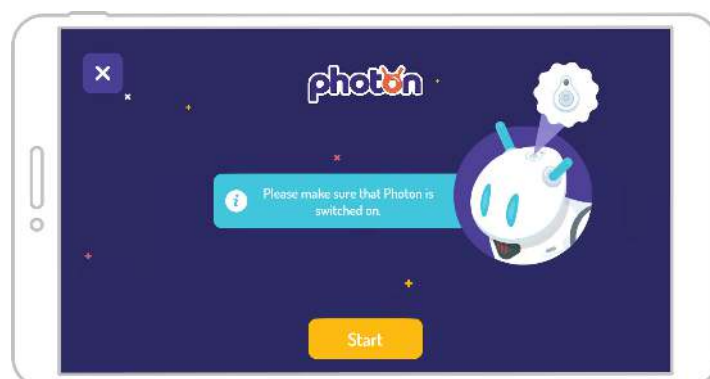What do I need to do to start learning with Photon?

1. Run the application Photon Edu.

2. Turn on Photon by holding the button located between the antennae for two seconds.

3. If, after launching the application, the information shown below is displayed, click „allow". Otherwise, you may have a problem with connecting to the robot.
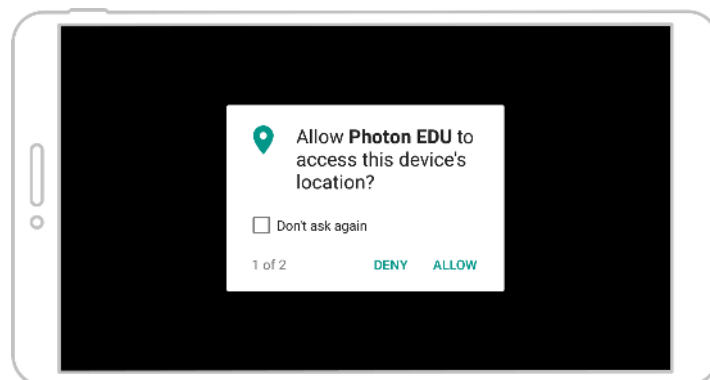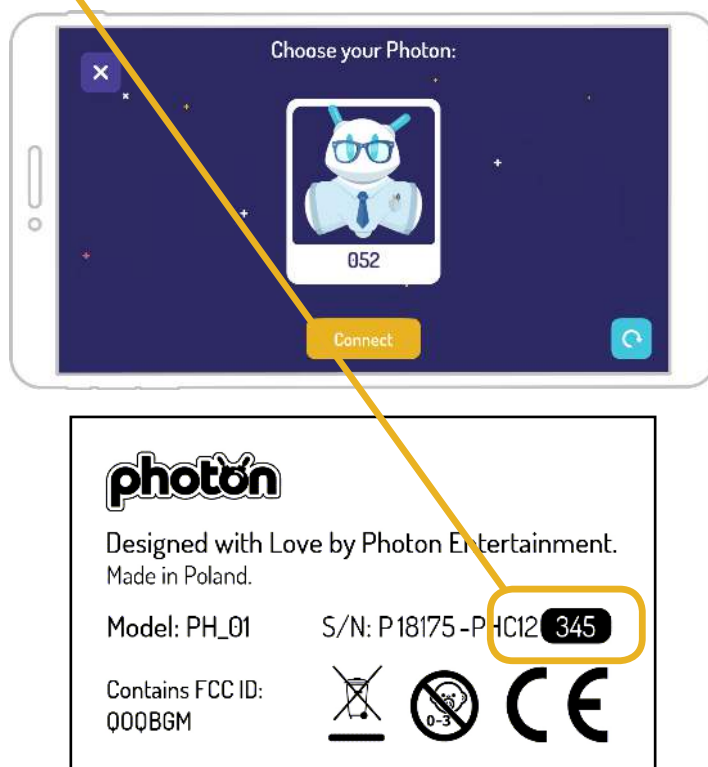

**4.** When you run the application, click „start".

5. The tablet searches for all enabled robots in the given room.

6. Select your Photon from the list and click „connect". The number of your robot can be found on the sticker underneath.

Choose your Photon:

052

Connect

phoƀon

Designed with Love by Photon Entertainment.
Made in Poland.

Model: PH_01   S/N: P18175-PHC12 **345**

Contains FCC ID:
QQQBGM

7. Once connected, your robot's antennae will stop flashing and the application will go to the screen where you should enter the „Secret code".

Secret Code

CODES ARE AVAILABLE IN THE SCRIPT
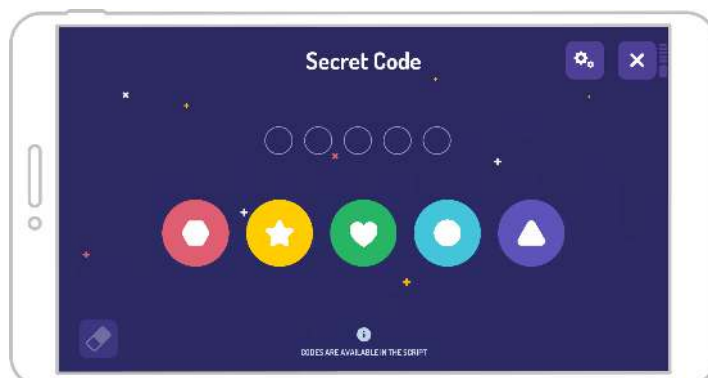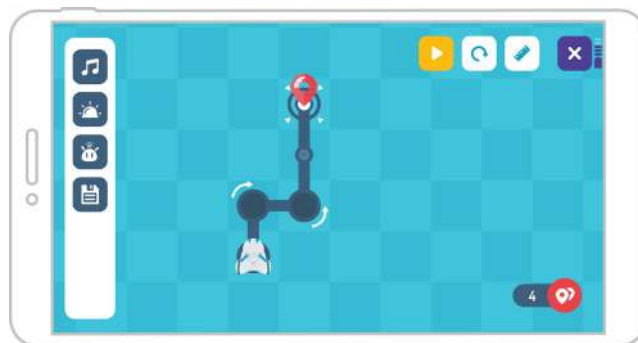
4. Useful codes:

Photon Move (for children of all ages):
screen that allows you to control the robot using a joystick.

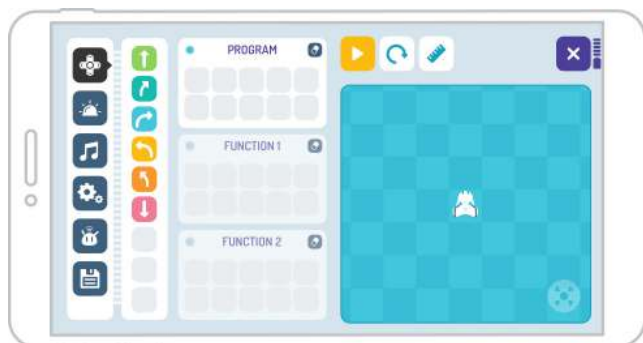## Photon Draw (5 - 6 years):
screen that allows you to program your robot by drawing a path on the screen
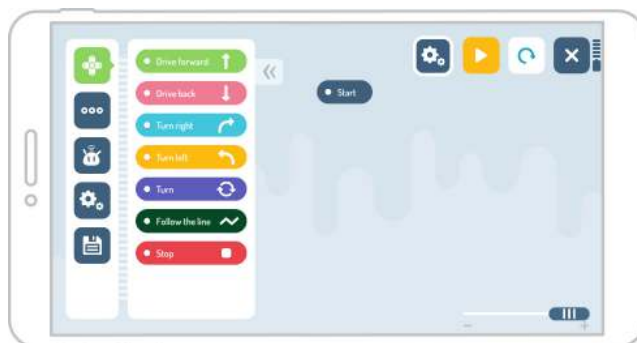

Photon Badge (6 - 8 years):
screen that allows you to program your robot using badges

Photon Blocks (8 - 10 years):
screen that allows programming by connecting and configuring blocks

Photon Code (10 - 12 years):
screen that allows you to create sequences similar to real programming

5. How do I use the scenarios?

Scenarios for implementing basic programming concepts include the following chapters:

1. **Algorithms and sequences**
2. **Bug, debugging**
3. **Functions**
4. **Interactions with the robot**
5. **Loops**
6. **Conditional statements - „If" and „while"**
7. **Variables**

In each section, you will find the files marked with one of the following symbols:

Introduction:
familiarizing with the terms

Offline activity:
task to perform without the use of a robot

Introduction to programming - explanation of instruction used in a given chapter. Divided into interfaces of programming:

Photon Badge   **Photon Blocks**   **Photon Code**

Tasks to perform with Photon, using one of the levels of programming:

Photon Badge   **Photon Blocks**   **Photon Code**

Conclusion
end of classes

Depending on whether these are your first classes with Photon or not, you can modify and select only those activities that you need to conduct classes.

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6. Understanding the lesson structure:

Here is an example of how to plan a lesson based on the class scenarios. **The first lesson** focuses on offline activities, which introduces new coding terms in the task- based hands on approach. **Subsequent activities** helps familiarize with the programming interface. **The third lesson** focuses on practicing the new concepts using Photon and applications.

CHAPTER 1

First lesson - 10 - minute introduction + 3 x 10 - minute offline activity + 5 - minute summary = 45 minutes

The second lesson, depending on the age group with which you work, we have separated 3 paths - 10 - minute introduction + 30 - minute familiarization with the interface + 5 - minute summary = 45 minutes

7 - 9 years	9 - 11 years	11 - 13 years

Third lesson - 10 - minute introduction + 30 - minute activity with Photon + 5 - minute summary = 45 minutes

7 - 9 years	9 - 11 years	11 - 13 years

After going through all the lessons in Chapter 1, go to Chapter 2.

CHAPTER 2

7. Using materials with all available programming interfaces (recommended for special interests group and programming schools)

CHAPTER 1

First lesson - 10 - minute introduction + 3 x 10 - minute offline activity + 5 - minute summary = 45 minutes

Second lesson – 10 - minute introduction + 30 - minute familiarization with the Photon Badge 30 minutes + 5 - minute summary = 45 minutes

Third lesson – 10 - minute introduction + 30 - minute activity using Photon and Photon Badge + 5 - minute summary = 45 minutes

Fourth lesson – 10 - minute introduction + 30 - minute familiarization with Photon Badge + 5 - minute summary = 45 minutes

Fifth lesson – 10 - minute introduction + 30 - minute activity with Photon and Photon Badge 30 + 5 - minute summary = 45 minutes

Sixth lesson – 10 - minute introduction + 30 - minute familiarization with Photon Code interface + 5 - minute summary = 45 minutes

Seventh lesson – 10 - minute introduction + 30 - minute activity with Photon and Photon Code + 5 - minute summary = 45 minutes

CHAPTER 2

Workflow with scenarios divided into age groups:

JUNIOR
recomended age:
7 - 9 years

Chapter 1
algorythms and sequences

Chapter 2
bug and debugging

Chapter 3
functions

Chapter 4
interactions with the robot

SCOUT
recomended age:
9 - 11 years

Chapter 1
algorythms and sequences*

Chapter 2
bug and debugging*

Chapter 3
functions*

Chapter 4
interactions with the robot*

Chapter 5
loops

Chapter 6
conditionals

EXPERT
recomended age:
11 - 13 years

Chapter 1
algorythms and sequences*

Chapter 2
bug and debugging*

Chapter 3
functions*

Chapter 4
interactions with the robot*

Chapter 5
loops*

Chapter 6
conditionals*

Chapter 7
variables

* going from the lower level to the more difficult one, in the chapters marked with an asterisk use only introducing section to the interface.