Photon

A Universal Didactic Tool

The Interdisciplinary Photon Robot was designed to work with both younger and older students. Teachers can either use the specifically prepared lesson plans or create their own to teach anything from humanities and science to basic & advanced coding.

History, art, language arts, math, geography, and physics are just a few examples of what the robot can help teach. What's more, the robot can be used at every level of education; from kindergarten, all the way to grade 12.

Beyond Traditional Education:

All you need to conduct electrifying classes:

The robot is intuitive in use and ready for work right out of the box.

Dedicated free mobile and desktop apps are straightforward and compatible with most devices.

Hundreds of lesson plans and ideas are available online and in print.

Compatible with:

Desktop Applications Available

(Windows / Chromebook / MAC)

- **Photon Magic Bridge** - a dedicated application for PCs, enabling integration of the robot with a computer
- **Scratch (2.0 and 3.0)** - the most famous and appreciated tool for learning coding
- **Microsoft MakeCode** - block and script programming
- **Javascript** - enables the robot to be programmed using the world's most popular scripting language
- **Photon EDU** and all available interfaces (Draw, Badge, Blocks and Code)

With the Basic Bundle, Teachers Receive:

- Digital database full of lesson plans and additional teaching materials
- Photon EDU app,
- Photon Robot,
- MicroUSB cable, user's manual.

Benefits of Using Photon Robot

Photon is an interdisciplinary robot that helps teach core subjects from kindergarten all the way to grade 12.

Ready-made lesson plans for each subject - no need to spend extra hours preparing them for each class.

A technologically advanced toolkit that keeps students occupied, entertained, and eager to learn.

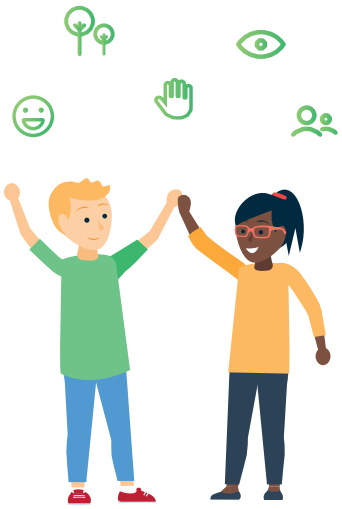
Parents pay special attention to the teaching aids available, and the robot raises the status of the institution.

One Photon Robot can be shared between teachers, independently of what they teach.

By setting up a personal profile, teachers may save lesson plans which can later be shared with educators from across the globe.

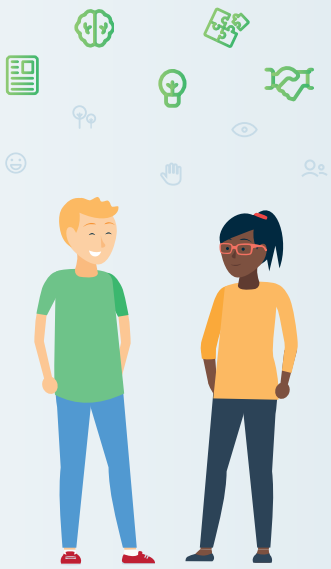
Developing Competencies on Every Stage of Education

Pre-Kindergarten and Kindergarten



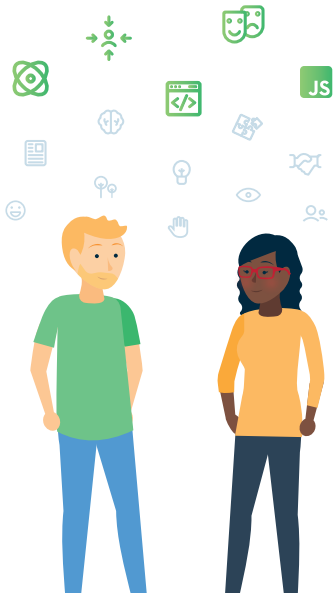
Children eagerly engage in controlling the robot's movements by using simple interfaces. They can use a tablet to draw the robot's route with their fingers, stack symbol blocks, or improve their fine motor skills by using a simple joystick interface. It's entirely up to the user whether the robot moves through space, shops at a local mall, or takes a walk through a forest.

Plan how the robot interacts with children; it can express happiness when petted, respond to touch by changing the color of its antennae, show fear in response to noise, or sound an alarm when it detects an obstacle.



Elementary Education

At this stage, we can use the robot in a range of subjects, such as history, language arts, biology, or geography. Students use intuitive Photon apps to program the robot using symbols or by stacking text blocks. All activities have elements of project-based and integrated teaching and can be complemented by educational mats and flashcards. For example, students can program how the robot should react when encountering an obstacle. They can also transform it into handy objects, such as a bedside lamp or a decision-making assistant.

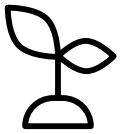


Secondary Education

In this age group, Photon products are used primarily in teaching advanced physics, robotics, and programming. Students can build on the skills acquired in previous years by creating more advanced programs using Photon Code, Scratch, or MakeCode. Moreover, the more advanced students may write authentic, text-based code in Python or JavaScript!

Comprehensive Development With Photon

The interdisciplinary Photon Robot was designed to work with both younger and older students. Teachers can either use specifically prepared lesson plans or create their own, to teach any subject. Furthermore, the robot can be used at every level of education, from kindergarten, all the way to 12th grade. Teach about planets and the solar system by taking the robot for a walk in space; take it onto a meadow to learn about plants and bees; take it into a city to talk about road safety. The robot can be used to introduce colors, animals, or geometrical figures, or even to explain the concept of sustainable energy.

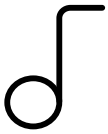


Natural Sciences

From basic information about plants and animals to learning about the entire natural ecosystem, different chemical reactions, or even the solar system. The robot can be used in teaching any of the science subjects to help introduce new topics and explain new phenomena.

Language Arts

Photon is an excellent tool for teaching both native and foreign languages. Using educational storytelling mats and illustrations, children can improve their storytelling skills by talking about the robot's adventures.



Arts

A 3D printer can be used to make classes more fun. Print out accessories that make the activities more interesting and give the robot a new use. A great example would be the permanent marker holder that allows children to program the robot's movements and create their own drawings. Children may also create masks, costumes, and accessories for the robots to wear. Then, they may dress the robots in costumes and have them perform specific roles, such as acting out a scene from a story or dancing to a previously discussed music genre.

Physical Development

Use Photon Robot as a guide to conduct various motor activities and promote children's physical development. Children can imitate the robot's movements and dances. They can also lead it towards a specific field on the mat representing a physical or an everyday activity (like tying shoelaces, fastening buttons) and then performing it.

Download Lesson Plans

Decode your emotions >

Winter full of lights >

Once upon a time >

Learning spacial orientation >

Expanding Scientific Minds

The robot can move around its axis with an accuracy of 5 degrees, which makes it a great tool for introducing concepts of measuring angles and geometric figures. Students can also decide the robot's movements with an accuracy of 0.5 in. Furthermore, by using an attachable permanent marker grip, you can draw any geometrical figure. This creates many opportunities to carry out experiment-based activities on measuring or unit conversion. Photon is also great for carrying out games aimed at consolidating mathematical operations and memorizing numbers. With the robot's help, students can match the result to an operation or decide whether the result is correct or not.

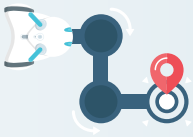
Coding Simplified

The Photon EDU app contains unique programming methods that allow students to gradually discover the world of coding. Each subsequent interface builds on the skills previously acquired and introduces new, more advanced capabilities.

Programming Fundamentals

By purchasing the basic version of the robot, teachers receive a complete toolkit that will support both them and their students in programming classes. We have developed an innovative approach that helps students discover the secrets of programming in a fun, approachable way. Thousands of teachers from all around the world have observed increased enthusiasm and involvement among students when working with Photon.

What's in Our App?



Photon Draw

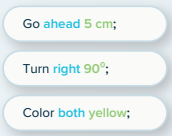
Set the robot's route by drawing it with a finger. Perfect for learning the robot's basic capabilities.

Photon Badge

Program the robot with the help of instructive symbols. Introduce logical planning of the robot's route.

Photon Blocks

Program the robot by stacking blocks containing symbols known from previous interfaces. Teaches how to build more complex programs.



Photon Code

Arrange text code sequences in form of blocks learned from the previous interface.

Advanced Programming Simplified

Brace Students for the Modern Job Market

When working with our robot, students develop their programming skills by implementing in real life the programs they have created. That way, they grow better acquainted with the technology and have an opportunity to learn scripting languages used by professional programmers. Using the robot stimulates students to create problem simulations, develop the robot's algorithms, and then test their assumptions in a physical setting.

Code Using the Most Popular Tools

Scratch

A great entry-level tool for the youngest programmers. Build code in a user-friendly interface. Stack code blocks and program the Photon Robot, create animations, text, stories, music, and more.

Python

Python is the most popular coding language for new programmers. It has great readability and is one of the entry-level languages. Like JavaScript, Python is one of the most desirable languages on the job market.

JavaScript

One of the most used coding languages. It's widely used in web development and helps create interactive websites and mobile apps.

Robot Photon and Magic Bridge Help Students:

- Learn commonly used programming languages, such as JavaScript and Python.
- Learn to enjoy programming and become a committed team member.
- Learn to participate in project work.
- Develop key competencies required in the modern job market.

Download Lesson Plans

Mathematical race >

An algorithm of a friendship: Ada, Charles and the first computer program... >

Programming the Photon Robot in Python #1 Getting to know Photon and Python! >

Photon Robot + PC

A small device - a big game-changer. Magic Dongle enables the use of Photon Magic Bridge – an app that connects up to 8 Photon Robots to a computer and interactive whiteboard at the same time. By connecting it to a desktop computer, you can program the robot using Scratch 3.0, Scratch, Microsoft MakeCode, JavaScript, and Python.

Photon Robot + Mobile Device

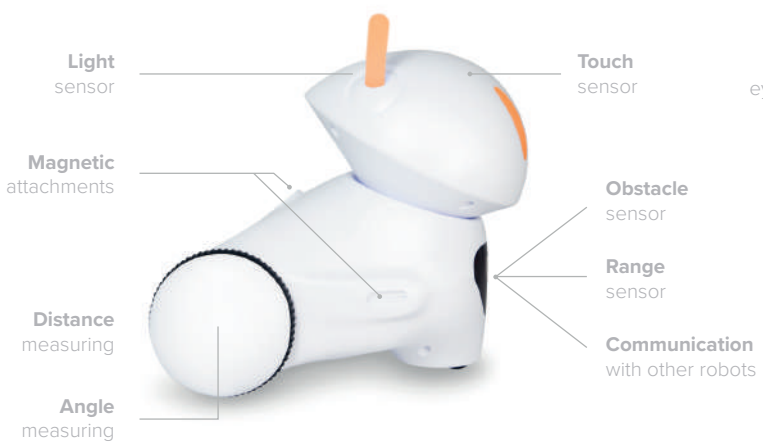
Photon Robot is fully integrated with our dedicated mobile apps and can be operated via tablets and smartphones.

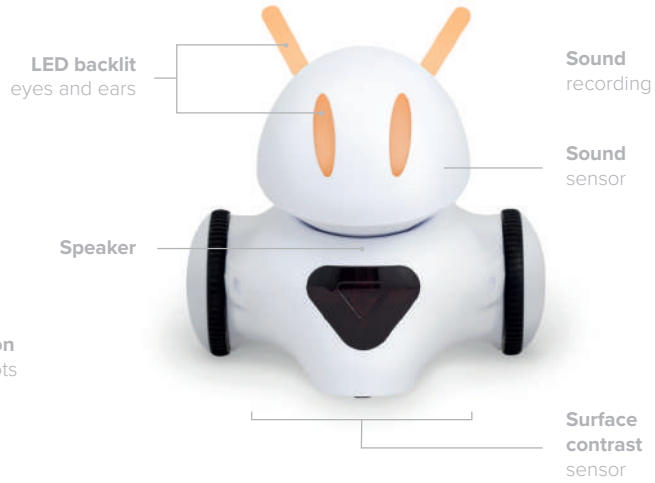
Photon Robot + Interactive Whiteboard

Connect the robot to a computer device and take advantage of an interactive whiteboard to engage the entire class.

Photon Robot + Interactive Floor Projector

Connect the robot to an interactive floor projector and let the virtual reality fun begin!





Highly-Advanced Sensors

The robot has numerous high-tech sensors that allow it to do what it does best - make your classes more fun and efficient. For example, thanks to the built-in touch sensor you can program the robot to go from place A to place B after you pet it.

Tech Specs

Weight: 690 g
Width: 172 mm / Length: 170 mm / Height 190 mm
Battery life up to 8 hours
Battery charging time up to 3 hours

Charging via the microUSB port
Power built-in Li-ion battery
Safety construction compact, closed
Housing materials PC and EARSTAR
Certificates CE (RoHS, EN-71)

Accessories

Photon Magic Dongle

A small device, a big game-changer. Magic Dongle enables the use of Photon Magic Bridge – an app that connects up to 8 Photon Robots to a computer and interactive whiteboard at the same time. By connecting it to a desktop computer, you can program the robot using Scratch 3.0, Scratch, Microsoft MakeCode, JavaScript, and Python.

Educational Mat

The mat consists of 24 square boxes that form a story map. By planning the Robot's route, students shape analytical skills, practice directions, estimate distances, test the developed program in a real-life setting.

Foam Mat

36 square puzzle-shaped boxes that teacher and students can join together however they like. By designing a route and planning the robot's path, students develop planning and analytical skills, practice directions, estimate distances, and verify the program's function in a real-life setting.

Flashcards

Both BASIC, as well as Alphabet and Numbers sets, can be used together with Educational Mats.

Magnetic Masks Basic Set

Give the robot a unique personality with a set of 6 magnetic masks. Inside of it, you will find 5 ready-made masks along with a white mask which your students can design however they like!

Magnetic Masks DIY Set

A set of 6 blank masks for students to design.

Stickers

Various designs and colors of stickers enable to personalize the robot during classes.