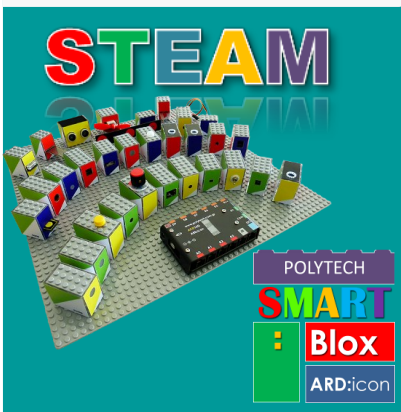


R&D Project

R&D Division



SMART:BLOX

POLYTECH SA is pleased to announce the implementation / completion of its new product **SMART:Blox**, a **modular, low cost, easy to use, flexible** and **diverse** set of hardware devices and software aiming to teach **Computer Programming** to young students within **STEAM educational curriculum** and which is a part of POLYTECH's General Education Laboratories.



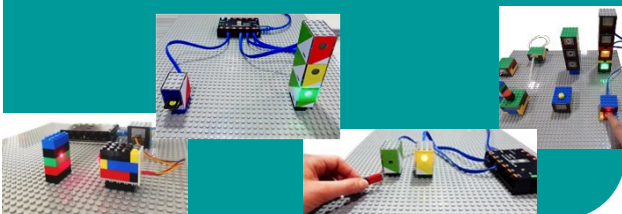
ARDicon CONTROLLER

Arduino compatible **ARM CPU** based controller, especially designed for **plug and play** setup of circuits, with no needs of wiring or electronics knowledge. Connects to any PC or Android PAD. **No wiring, no "spaghetti"** development boards, no electronics background needed.



SMART:Blox I/O Devices

SMART:Blox device sets can be used for teaching and conducting experiments in the field of **Natural Sciences** (Physics, Chemistry, Biology / Ecology) with data acquisition and digital process, **Technology** (electronic devices for electronic control, motor control -step, DC motor, servo motor- programmable logic, automation, kinematics and robotics, etc.), **Engineering** (measurements, smart home lighting, renewable energies, alarm systems, safety system, traffic control, sound control, etc.), **Arts** (sound and music tones, visual effects, graphics, etc.), **Math** (computational principles, calculators, tables and graphs, math functions, geometry functions, trigonometry functions, etc.).



OVERVIEW

SMART:Blox is an Innovative and Intuitive **STEAM education platform** for students, where the core of the system is enhancing **computer programming to all categories** of **STEAM** projects, including tools for training in programming a vast number Analog and Digital - Input /Output electronic devices. It provides an **icon driven** and **block logic** programming platform with graphic tools which produces **C language code** and writes directly to the **SB controller**. The programming platform drives the **Arduino** based controller's CPU / Memory / Interfaces / IOS, so the student can perform data collection or data output, create feedback control loops-PID and PWM control process, etc. It includes a set of electronic **Input** and **Output devices**, ranging from sensors and switches, to motors or infrared transmitters and receivers. All devices are enclosed in plastic blocks (similar to the plastic construction block toy sets) and connect to the controller via RJ11 cables with **no need for wiring** as in development boards. Connecting the devices is a **plug and play** process. The set also provides interface blocks with any third party electronic devices that user may want to use additionally to the **vast number of I/O devices** offered.

SMART:Blox C-STEAM Methodology

The aim of the **C-STEAM** didactic method is to focus more on students developing **Algorithmic thinking** and problem-solving skills and less time in code syntax. By achieving that, students will find that coding their ideas to a program in the C-STEAM tutorials and projects is **easy as playing a game** and a result of a mind process method. Then a new horizon opens up for the STEAM educational approach.