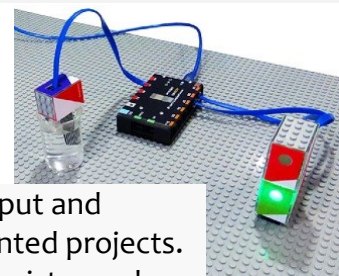


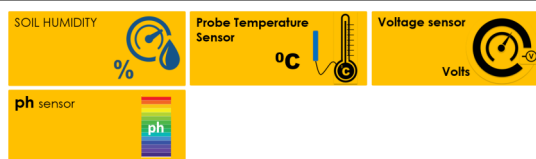
S3 PCB.CB Chemistry-Biology kit



S3 PCB.CB is an **add-on** set of SMART:Blox to the **S1 Basic kit** offering more Input and Output devices and more programming training in **Chemistry and Biology** oriented projects. It offers the possibility to create more complex STEAM projects, typical of Chemistry and Biology Science field applications and enhance greater skills in algorithmic and programming logic. The set comes also with **S3 LSB** kit of lab components used in Science experiment to facilitate the students in conducting those experiments in a more scientifically fashionable way. This is optional, students can use other simple components (recommended in the syllabus) to conduct those experiments.

Below are the devices used in the S3 PCB.CB kit:

S3 PCB.CB - Add-on kit to S1	Pcs	S3 LSB - Additional experimental lab devices for S3 PCB.CB
SB 25 Soil humidity Sensor	1	1 Plastic container 100ml
SB 10 Temperature & Humidity Sensor	1	2 Metal spatula
SB 35 Voltmeter Sensor	1	3 Acrylic container with rubber cup
SB 28 Analog Liquid pH Sensor	1	4 Pipettes, plastic (6pcs)
SB 38 ECG Sensor	1	5 Flexible tube
SB 39 Pulse Sensor	1	6 Conical plastic tube with cap, 15 ml
SB 50 RJ 11 Adapter Universal	1	
SB 42 CO ₂ Sensor - optional	1	
SB 43 O ₂ Sensor - optional	1	



For each device in the ARDicon database there is a specific icon to be used. Each device has a separate icon also for describing its state, for example ON or OFF, High or Low.

Below are **indicative project themes** that can be performed using the S3 PCB.P add-on set:

Project Themes for Chemistry	C-STEAM	Level
Dilution and pH measurement of Acids and Alkalis	C	1
Enthalpy changes in a series of reactions	C	1
Exothermic and endothermic reaction	C	1
Heat of Neutralization	C	1
CO ₂ Gas Production In Double Replacement Reaction	C	1
Neutralization reaction and moisture changes	C	1
pH change is neutralization reactions	C	1
Temperature changes associated to phase change	C	1
Humidity changes associated to phase change	C	1
The pH measurement	C	1
Hess Law	C	1

Project Themes for Biology	C-STEAM	Level
Transpiration in a plant	C	1
Relative Humidity of Soil	C	1
Muscle fatigue	C	1
Body temperature regulation	C	1
Acidification of Milk	C	1
Regulatory mechanism of pH in organisms	C	1
Measuring the pH of soil	C	1
Measuring heart rate with ECG	C	1
Exercise and heart rate	C	1

