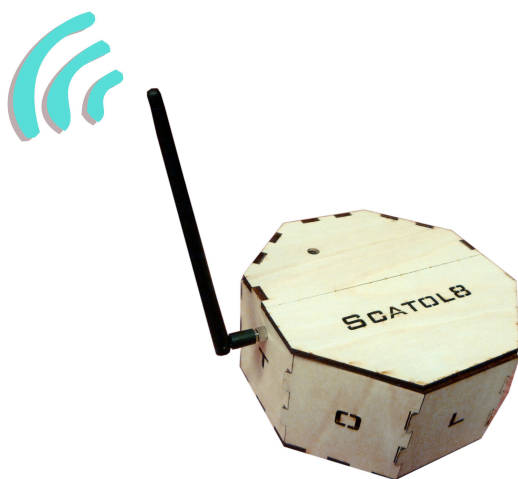# Scatol8®: an educational kit to learn about the environment and to gaining understanding on sustainability

What is Scatol8®?

Scatol8® is a device that measures environmental variables (energy consumption, air quality, humidity, temperature, ...) and transmits data to a personal computer that stores, processes and displays them through a dashboard, called Crusc8. Thus, Scatol8® creates a real-time monitoring system of all variables, that let you assess trends over time, in form of time series analysis. In turn, personal computer sends data to a server on the Internet that organizes them into a collective database. In this way, information shall be published, then processed for comparisons, statistical aggregation or summary.

Projects with Scatol8®

Designed in a perspective of sustainability - the main field of its application - Scatol8® is inspired in its implementation to different criteria: Open Source software and hardware; use of recycled containers; dissemination of knowledge.

Scatol8® was born within the framework of the Project VETTA, lead by Regione Piemonte, and it was installed in high altitude shelters. Thanks to the modularity of its architecture, Scatol8® has been introduced in monitoring projects in different productive realities: companies, mining sites and schools.
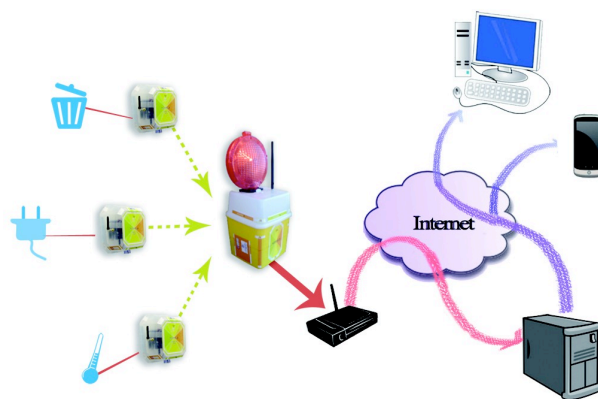
Scatol8® in schools

Scatol8® has been the core of several projects over the last two years in schools of various levels. The awareness project "All in race for energy saving with Scatol8®" involved two classes of the Middle School Vivaldi-Murialdo, in Torino, and two classes of the Middle School "L. Verga" in Vercelli, with the coordination and support of Regione Piemonte.

Other schools have participated to Scatol8® project on: the Institute Virginia Agnelli in Turin (in the courses of the Italian Salesian Center for Women Education) and the Primary School Sant'Anna di Chieri (TO). In these projects, a virtuous competition on environmental sustainability has been organized among classes.

Where can you start from?

As a school, to start a project with Scatol8® there are few, simple steps to take, in collaboration with Scatol8®'s Team:

1. Defining scope and content of the project: schools and classes involved, variables to monitor, etc.
2. Identifying costs and sources of financing.
3. Contributing to design and implement Scatol8® system: sensors, connection to the Internet, dashboard, etc.
4. Planning Scatol8® system installation.
5. Contributing to plan and provisioning of educational activities
6. Using Scatol8® system on the basis of educational plan, throughout the duration of the project.
7. Organizing presentation and dissemination initiatives.
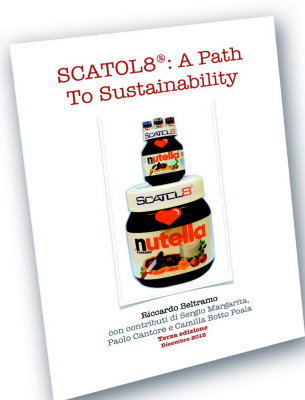
The teaching kit

Scatol8® is best suited for schools, as an educational tool for awareness raising among young people about the environment, recycling and sustainability. It helps teachers to organize their courses in activity-based forms of learning. Therefore, Scatol8® system integrates few components into a real educational kit for children and teachers: the system is composed by Scatol8®, by the book "A Path Towards Sustainability", by cards and recipes for the activities in the classroom, and by an online journal on "Ecology, environment and surroundings."

The system

Depending on the project developed and implemented in a school (or group of schools), one Scatol8® system is installed in one or more classes, for the detection of selected environmental variables. A server on the Internet is made available to host the collected data and to show them with Crusc8, during the activities in the classroom or at home, by all the participating students. The system allows a comparison among classes or schools in a sort of "competition" on good environmental practices.

The book

The book "A Path Towards Sustainability", by Riccardo Beltramo, is the landmark to extracting, from time to time, material useful to address several issues: the environment and its management, sustainability, environmental variables and their detection, sensors, materials and programs to operate Scatol8®. Last but not least, the techniques and ways to recycle packaging and containers for tailoring Scatol8® dress.

SCATOL8®: A Path To Sustainability

Riccardo Beltramo
con contributi di Sergio Margarita,
Paolo Cantore e Camilla Botto Poala
Terza edizione
Dicembre 2012

The cards

For the duration of the project, students are offered activities to read and analyze collected data. They facilitate the understanding of the values of the measured variables, their variations and related causes. Everything is interpreted in the context of the school. In order to help teachers in this activity, periodically updated cards suggest educational activities to be carried about Scatol8® and measured data.

The recipes

In addition to teaching cards, in order to achieve young people awareness on issues related to environmental sustainability, some "recipes" are offered too. They describe simple daily activities (drinking a glass of water, get a sandwich, prepare the coffee ...), highlighting the raw materials used, equipment used, the required activities, waste products and their destination. On the basis of those proposals, students are invited to complete them or create new ones, to extend application in relation to their own interests. For instance, applications have been drawn towards motorcycle competition, hairdressing, etc... stimulating comparative reasoning schemes

On line journal

As part of the project Scatol8®, an online journal on the theme "**Ecology, environment and surroundings**" is drawn up. A real press release online, on topics such as ecology, environment, packaging, recycling, reuse, ... which collects reports, links, materials, photographs documenting everything that happens in the world on these topics. This also can be used as a source of materials to set educational activities and to set up a platform for information exchange.

Do you want your school being part of the *Scatol8®'s network*?
Learn more about our projects: **Contact Us!**
Prof. Riccardo Beltramo, riccardo.beltramo@unito.it
Department of Management, Università di Torino, http://scatol8.net