

Experimental classes and outdoor activities: a successful way of learning

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Today, more than ever, in this ever-changing Planet, humanity faces new and great challenges, which require citizens to have clear opinions and attitudes regarding scientific issues. Scientific literacy is therefore, fundamental for the conscious and full exercise of citizenship, and the contribution of experimental science teaching in its promotion is essential and unquestionable.

As science teachers and mentors for the citizens of the future we are called to act!

It is our responsibility to stimulate practical and experimental work, in the laboratory and out in the field, as well as to provide our students differentiated educational experiences, which often involve Museums, Science Centres, Colleges and Institutes, places with geological and biological interest, like geomonuments and Protected Areas.

This poster intends to show some activities that reflect the guiding methodology of the Biology and Geology teachers of the Augusto Cabrita Secondary School and their impact in the scientific literacy of future generations. These teachers have always defended in the first place the maintenance of a high level of quality and rigor in their experimental classes. As an example, the experimental protocol of the Laboratory Activity “Factors that have influence on fluidity/viscosity of a substance” and other documents related with this laboratory class are presented.

Alongside the experimental classes, students carry out application work and projects, many of which are presented at exhibitions or school shows, involving the entire educational community and sometimes the local community. Open Labs are another activity of similar impact, where secondary school pupils, under the guidance of their teacher, supervise activities planned for younger students and, in some occasion, for the educational and local community. Outdoors activities promote the interconnection between theory and practice, between school and reality, facilitate socialization and are highly motivating in the learning process. At the end of each activity, students conduct an assessment through a small survey, photographic record, scientific report, or other elements selected accordingly to the nature of the activity.

Our Science Club, which works since 1987, inauguration year of the Augusto Cabrita Secondary School, on an optional basis and at extracurricular time, for interested students, was created for reinforcing, developing and training the inherent skills of experimental work, stimulating interest in Earth and Life Sciences, promoting Science through play activities, developing a critical and scientific spirit and promoting environmental awareness and values. Numerous activities have been developed, among them, Microscopy Courses, Biology and Geology Workshops, small research projects in partnership with Science Centres and Institutes, study visits and field lessons. Following the association process of schools that constitute our School Cluster, the Science Club extended the activities to the first cycle, in order to reinforce the teaching of experimental sciences in the first years of schooling, to promote the articulation between teaching cycles and to improve the integration and socialization of students and teachers of our community.

The results?! Our students speak for ourselves ...