

Teaching geology with wow effects

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Hands-on laboratories in contexts such as schools, associations and mineral exhibitions of a working group from the universities of Rome Sapienza and Milano Statale are here presented. Two year experiences and a dozen of activities led to the development of geological “targets” distinguished for age (from primary school students to retired persons), scholarship level (from basic schools to college and PhD) and society roles (schools, hospital, third sector institutions or general public).

Activities were grouped in a few main themes according to their appeal to the public: 1) origin and evolution of life and its adaptation to natural conditions, studying real fossils; 2) condition of formation and possible modification of minerals and their synthetic equivalents; 3) development of natural systems by the study of rocks; 4) origin of raw materials, their occurrence and the possibility to partially re-use them; 5) drawing of geological maps and transfer of geological concepts and models into paper sheets or digital support; 6) definition, evaluation and mitigation of natural risks.

One or more activities are associated to each of these themes: a) associating fossils to reconstruction of organisms (with real fossils and resin models); b) observing microfossils with a stereoscopic microscope; c) observing physical and optical properties of minerals (including fluorescence); d) observing rock thin sections with polarizing microscope; e) raw materials in rocks and their use for everyday life; f) “true or false” game, to understand the difference between natural and fake fossils/minerals; g) geological maps as tools to describe the 3D geology of Earth (including digital representations of geological maps in Google Earth); h) simple simulation of liquefaction processes in earthquakes. Furthermore, specific activities have been realized for visually impaired people (but also to explain this situation to people with regular visual).

The planning of these activities highlights that the exposition on a desk of specific objects and instruments triggers curiosity in the public, that was easily involved, frequently asking also for specific topics related to the exposed objects. The possibility to touch real objects (minerals, fossils, rocks, meteorites) is a greatly appreciated experience, and is a great opportunity in introducing geological reasoning.