



Geochemical Treasure Hunt for Primary School Children

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How can you inspire school children for geochemistry, and scientific exploratory urge? The key is to raise their curiosity and make learning new things a hands-on experience. The Fellows of the European Marie Curie Initial Training Network IsoNose designed and established a “Geochemical Treasure Hunt” to excite children for scientific investigations. This workshop explains primary school children the research and scientific methods of isotopic geochemistry, and their use to understand processes on the Earth’s surface. From obtaining ‘samples’, performing various experiments, the school children gather clues leading them to the hidden treasure on the Telegrafenberg (campus of the GFZ Potsdam).

The course was designed for school children to learn hands-on the meaning of elements, atoms and isotopes. In small groups the children conduct experiments of simplified methods being indispensable to any isotope geochemist. However, prior to working in any laboratory environment, a security briefing is necessary. For the course, two stages were implemented; firstly the use of harmful substances and dangerous equipment was minimised, and secondly children were equipped with size-matched personal protective equipment (lab coats, gloves, and safety goggles). The purification of elements prior to isotopic analysis was visualised using colour chromatography. However, instead of using delicate mass spectrometers for the isotope ratio measurements, the pupils applied flame spectroscopy to analyse their dissolved and purified mineral solutions. Depending on the specific element present, a different colour was observed in the flame. The children plotted their colours of the flame spectroscopy onto a map and by interpreting the emerging colour patterns they localized the treasure on the map. In small teams they swarmed out on the Telegrafenberg to recover the hidden treasure.

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