

Periodic Smartphone

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Chemistry: fascinating? How to link it to Earth Sciences in high schools? In everyday life we are so overwhelmed by Chemistry that we forget its inalienable contribution and ignore where the elements are coming from, neglecting the concept of non-renewable georesources. Chemistry is considered difficult by teenagers because of its language and themes, far away from reality. Geosciences are often left in the corners and in particular the teaching/learning of minerals and rocks is particularly boring! It is important, to find new ways to ensure that teenage students fall in love with these disciplines and acquire their fundamental concepts starting from their interests and scenarios to link teaching to everyday life. The ministerial indications for the first two years of secondary high schools refer to “observation and description of phenomena and simple reactions with reference to examples taken from everyday life”.

In our project we adopt an inquiry based methodology: students pose and answer questions in different steps: Which are the chemical elements in your smartphone? How many elements can you find? Is the mobile phone like a mine for elements? Where these elements are coming from in nature? From which minerals? Advertising urges us to buy better phones, but what to do with the old ones? Different activities can be carried out in groups: groups will deal with metals, semi-metals, non-metals, lanthanides. The questions/answers open the possibility to introduce the concepts of environmental sustainability and Circular Economy, as strongly indicated by the EU. Last phase of the activity will be focused on the geoscience issues, answering these questions: Where in the world can you find the elements present in your cell phone? Is there a connection between the geological setting and the presence of ore deposits? Which deposits are present in Italy/ in your area? A visit to a mining area and/or to an industry can complete the activity. The evaluation is carried out having the groups communicating their results to the all class with an

group/individual research on “Cell phones and wars” to be carried out with colleagues in History/Geography and Humanities, to answer the question: In your opinion, has the rush to extraction and exploitation of raw materials caused conflicts in the past? and today? This can represent a highly-interdisciplinary activity useful for Citizenship Education.