Teaching geosciences throughout "Complex Task"

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Origin of magmatic activity in subduction zones : An example of « Complex Task » for students in scientific terminal in high school.

A « Complex Task » requires a combination of several skills and abilities of the students to be solved. It allows the teacher to assess these skills and abilities in order to concentrate their work on those which aren't mastered. In the French educational system « Life and Earth's Sciences » makes the « Complex Task » set up easier. This work makes the students more active throughout their learning.

This kind of activity has some specificities and has to present :

- An open-ended question : their purpose and the expected form without saying how to reach it.
- External ressources : naturalistic material, ground observations, documents or web access.
- Support for the students who are encountering difficulties.

The students are free to find their own way to reach their purposes. In our example they will have an access to rock samples, thin sections, geochemical reactions, diagrams, graphics and maps.

During their time-consuming work, the teacher has more opportunities to bring his help where it's needed. In that kind of activity you may also give them indicators of success to allow them to do an autoassessment.

Linked to a fall school in Santorini, my colleagues and I have decided to create a « Complex Task » to bring the students to the identification of the origin of the magmatic activity in subduction zones. Due to their knowledge we didn't choose the local subduction zones but we did it in a general way.