



Plate tectonics: escape games and trip to the center of Earth

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In France, the program of the Earth Sciences for the 1st class (students of 16-17 years old) is driven by an historical approach. The official theme is called: “Plate tectonics, the story of a model”. The teachers start with the birth of the model with the continental derive proposed by A. Wegener in 1915, and explain why the idea has been rejected at first. The strongest argument of the opponents was the solid state of the planet, demonstrated by seismicity. The structure and the mineralogy of the globe, including the main discontinuities (Moho, Gutenberg and Lehman), have to be studied using scientific practical demonstration.

For many reasons, geology is not the easiest part of the “Earth and Life Sciences” program to teach, because most of the students are not familiar with the time and space scales of Geology. They feel more comfortable with biology. Moreover, the general culture in Earth Sciences is poor, particularly in our city, Dreux. We are in a “priority education zone” because most of the population belong to the lower classes and suffer of long-term unemployment. That is the reason why we, as teachers, develop many attractive activities to make the students interested in the course.

In this poster, we present the three first activities of the theme. Each week, the lab assistants help us to decorate the classroom like the office of a naturalist of the beginning of the 20th century with books, old instruments and maps, rocks... The first one is an escape game on the concept of continental derive in which the students have to find all Wegener’s evidence to be allowed to debate with his severest critic, H. Jeffreys. The evidence of horizontal movements allows the students to find codes to finally open a suitcase where they can find a treasure. The second one is a turning workshop to build the layered structure of the globe and find the main discontinuities. The third one in an introduction to mineralogy and thin sections microscopic observations based on the French novel of Jules Verne (1864) intituled “Trip to the center of Earth”. The hero made a trip in the center of earth and brought back rocks, but some information of the notebook are lost. The students have to observe and make measurements on rocks to find their names and the depth of sampling.