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Experiment and visualization in school mathematics

We want to argue for teaching mathematics with computers, treated as tools for visualizing and experimenting. We will build upon our didactical experience related to:

- a few years of organizing a course of mathematics for a broad audience of school students at the University of Warsaw (“Matematyka dla Ciekawych Świata”);
- courses at the Interdisciplinary Centre of Mathematical and Computational Modelling of the University of Warsaw;
- courses for teachers at the Cardinal Stefan Wyszyński University in Warsaw;
- teaching at the school and university levels in Poland and in France.

We will comment on the feedback from pupils, students and teachers.

We think that software used by researchers on one hand, and common office packages on the other, can be successfully used in school didactics. We will give examples of using software like Mathematica, Matlab / Scilab, R, Excel in presenting mathematical notions, getting familiar with and as a proposition of integrated teaching of sciences.

We will also present risks related to teaching with computer tools.

Keywords: mathematical software, computer, experiment