The paper deals with project-based learning making use of computers in mathematics lessons in order to clarify teachers idea of a students project; primarily targeted at learning goals and secondly, it is to explain the difference between mathematics lessons implementing project-based learning (PBL) and non-project work. The first part of the paper is theoretical. It summarizes reasons why teachers do often reject PBL and offers a general guidelines for preparing, leading and evaluating a good project work (e. g. by means of 3 Cs method). The second part is conceived practically in order to present several suggestions all of which involve computer work including communications possibilities of the Internet or Cabri a dynamic geometry learning interface. This text is based on selected extracts of the authors book "Počítačové kognitivní technologie ve výuce geometrie".