

ZMATH 2014c.00428

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Developing problem solving experiences in practical action projects.

Math. Enthus. 10, No. 1-2, 219-244 (2013).

Summary: Problem solving doubtless is an essential element of mathematical learning, so that mathematics educators often are satisfied when finding situations that lead their students to such activity. But in many cases, the chosen situations and the ways to guide students' works are not sufficiently analyzed from a didactic point of view. Our goal in the present analysis is to underline the possible ways for managing the situations, and to exhibit the parameters that educators have at their disposition within their role as mediator between students and mathematical knowledge and know-how.

Classification: D50 D40 G40

Keywords: problem solving; student activities; exploratory learning; discovery learning; project based learning; project method; project based learning; a priori analysis; lesson planning; teaching; didactics of mathematics; elementary geometry; circles; quadrilaterals; triangles; tangram; unfolded polyhedra; nets; optimization; solid geometry; volume

http://www.math.unt.edu/tmme/vol10no1and2/9-Pluvinage_pp219_244.pdf