

ZMATH 2014e.00385

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Fostering mathematical creativity through problem posing and modeling using dynamic geometry: Viviani's problem in the classroom.

J. Math. Educ. Teach. Coll. 4, No. 2, 66-72 (2013).

Summary: This paper discusses a classroom experience in which a group of prospective secondary mathematics teachers were asked to create, cooperatively (in class) and individually, problems related to Viviani's problem using a problem-posing framework. When appropriate, students used Sketchpad to explore the problem to better understand its attributes (e.g., knowns, unknowns, and restrictions) and model its solution. With support and guidance, each student was able to create at least one very interesting and good mathematical problem.

Classification: D59 G49 U79 M19

Keywords: mathematical creativity; problem posing; student activities; Viviani's problem; mathematical model building; modelling; dynamic geometry; geometry software; problem-posing framework; proof problem; converse problem; special problem; general problem; extended problem; plane geometry; teacher education; proving

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