

Origami in mathematics education. Notes on mathematical language in model folding.

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Abstract

The author is a mathematics teacher in high school (grades 9-12) with 20 years of experience. She is also an active member of Mathematics Teacher Association where she promotes origami as a powerful tool for maths teaching for more than 10 years. The paper is based on personal experience and observations on origami in maths teaching to a wide range of students – from children to math teachers.

We start discussion from a few general questions: Why is the language of geometry taught? Is it a goal in itself or is it a tool for better communication? What activities could we as teachers use to enhance our students' ability to use language of mathematics and especially the language of geometry as a communication tool?

Concerning origami as a particular kind of activity, the following specific question can be asked:

- 1) Has origami any specific features to be the special tool for teaching improvement?
- 2) Could the language of geometry be used in origami teaching and in teaching through origami? Is such language accepted by teachers and students (both in school and outside school)?
- 3) What concepts and skills could be introduced and developed through origami?
- 4) What behavior is observed when teaching with origami?
- 5) What barriers prevent wider use of origami in the classroom?
- 6) Could origami become a standard tool for teachers?

We show examples of bad and good practices, the ways origami is often used to teach geometry and the ways origami can be efficiently used to develop both mathematical concepts and language. Finally, we show a proposal developed by the author of how to work with teachers (not only maths teachers) to convince them to use origami and to give them tools to use origami efficiently.