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Learning about solids.

Clarke, Barbara et al., International perspectives on learning and teaching mathematics. NCM/Göteborg University, Göteborg (ISBN 91-85143-01-4). 51-66 (2004).

The chapter gives part of the results of the analysis of an on-going longitudinal research project first begun in 1993. The goals of the project are to investigate the contribution of tactile and visual perception on the building of geometrical images of three-dimensional shapes and to identify the cognitive phenomena which occur in pupils communication and manipulation when they work with solids. The research tool was a set of graduated tasks given to 9 to 11 year old pupils in the Czech Republic and the United Kingdom. A result of the analysis of the experiments was the identification of several mental processes involved in solving the tasks. These were described as mechanisms and were applied to the pupils' solutions. In the chapter we show the usefulness of these tasks as a diagnosing tool to help teachers determine the level of their pupils' understanding of geometrical solids and also as an educational tool to develop pupils' understanding of them. (Authors' abstract)

Classification: C32 G42