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Characterising triangle congruency in lower secondary school: the case of Japan.

Ubuz, Behiye (ed.) et al., CERME 8. Proceedings of the eighth congress of the European Society of Research in Mathematics Education, Antalya, Turkey, February 6–10, 2013. Ankara: Middle East Technical University (ISBN 978-975-429-315-9). 655-664 (2013).

Summary: Congruence, and triangle congruence in particular, is generally taken to be a key topic in school geometry. This is because the three conditions of congruent triangles can be used when proving geometrical theorems and also because triangle congruency relates to the idea of mathematical similarity via similar triangles. Despite the role of congruency, and of congruent triangles in particular, there appears to be limited research on the topic. In this paper we report on the approach to triangle congruency in textbooks used in lower secondary school in Japan specifically in grade 8 (students aged 13–14). We found that the modicum of practical tasks entailed various conceptions (measuring, transformations, etc.) whereas the proof problems which predominated expected students to utilise corresponding parts and known facts.

Classification: G43

Keywords: triangles; geometry; congruency; textbooks; secondary school