

How can novice STEM teachers develop integrated STEM materials: The first step from mathematics textbooks

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One of the barriers for novice STEM teachers to implement integrated STEM education with mathematics at its core is the development of teaching materials (e.g., Anderson et al., 2020). To break through this, we focus on mathematics textbooks (Fujii, 2016) as an important resource for teachers to design and find appropriate materials. The aim of study is to explore the possibility of translating mathematics textbooks into STEM teaching materials. We will focus on the “paper helicopter material”, which is a statistical material in a Japanese seventh-grade mathematics textbook (Okamoto et al., 2016), and analyse the concepts and ideas in STEM fields contained in the material. The implications for teachers and teacher educators of the transformation of mathematics textbooks into STEM materials will be discussed.

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