

Teaching And Learning Of Knot Theory In School Mathematics

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This book is the result of a joint venture between Professor Akio Kawauchi, Osaka City University, well-known for his research in knot theory, and the Osaka study group of mathematics education, founded by Professor Hirokazu Okamori and now chaired by his successor Professor Tomoko Yanagimoto, Osaka Kyoiku University. The seven chapters address the teaching and learning of knot theory from several perspectives. Readers will find an extremely clear and concise introduction to the fundamentals of knot theory, an overview of curricular developments in Japan, and in particular a series of teaching experiments at all levels which not only demonstrate the creativity and the professional expertise of the members of the study group, but also give a lively impression of students learning processes. In addition the reports show that elementary knot theory is not just a preparation for advanced knot theory but also an excellent means to develop spatial thinking. The book can be highly recommended for several reasons: First of all, and that is the main intention of the book, it serves as a comprehensive text for teaching and learning knot theory. Moreover it provides a model for cooperation between mathematicians and mathematics educators based on substantial mathematics. And finally it is a thorough introduction to the Japanese art of lesson studies again in the context of substantial mathematics. EAN/ISBN : 9784431541387 Publisher(s): Springer, Berlin, Springer Japan Format: ePub/PDF Author(s): Kawauchi, Akio - Yanagimoto, Tomoko

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