Record Nr. UNINA9911020416503321 Autore Ikeda Toshikazu Titolo International Horizons in Mathematics Modelling Education / / edited by Toshikazu Ikeda, Akihiko Saeki, Vince Geiger, Gabriele Kaiser Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2025 Pubbl/distr/stampa 3-031-53533-2 **ISBN** Edizione [1st ed. 2025.] Descrizione fisica 1 online resource (590 pages) Collana International Perspectives on the Teaching and Learning of Mathematical Modelling, , 2211-4939 Altri autori (Persone) SaekiAkihiko GeigerVince KaiserGabriele Disciplina 510.71 Soggetti Mathematics - Study and teaching Teachers - Training of Study skills **Mathematics Education** Teaching and Teacher Education Study and Learning Skills Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto International Horizons in Mathematics Modelling Education --Conceptualising the Relationship between Mathematical Modelling and Interdisciplinary STEM Education -- The Relationship of Mathematical Modelling Education to Problem Solving, Problem Posing, and Creativity -- Informing Scaffolding for STEM Undergraduates' Modelling with Explanatory Accounts of Their Reasoning -- A Framework for Designing a Model-Development Sequence of STEM Tasks Based on Mathematical Reasoning -- Possibilities from Studying Proportion in the Aleijadinho's Christ Sculptures, in the Town of Congonhas, Minas Gerais, Brazil, through Ethnomodelling -- Developing Local Representative Solutions to Fermi Problems -- Using Qualitative and Quantitative Arguments in Decision-making Situations -- Fostering

Citizenship Through Dialogue That Makes Values Manifest in

Modelling in Australian Schools, Years 1 to 10.

Mathematical Sciences Education -- Implementation of Mathematical

Sommario/riassunto

This edited volume provides an extensive overview of the recent strides in global modelling education. It examines the interplay between modelling education and various dimensions of the educational landscape. Firstly, it delves deeply into the intersection of modelling education with interdisciplinary STEM education, teacher education, lesson study, engineering, problem-solving and posing, and creativity. Moreover, the book places a strong emphasis on the integration of modelling education with foundational mathematical concepts including algebra, geometry, functions, and statistics, demonstrating their integral role across elementary, secondary, and tertiary levels of mathematics education. Furthermore, the book delves into the specific issues and considerations that shape modelling education. It addresses critical pedagogical aspects, the integration of technology, and cultural and contextual considerations. In essence, this book stands as a comprehensive guide that not only surveys the recent advances in global modelling education but also offers invaluable insights and practical guidance.