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Nota di contenuto	Preliminary Material / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Why PBL? Why STEM? Why Now? An Introduction to STEM Project-Based Learning: An Integrated Science, Technology, Engineering, and Mathematics(STEM) Approach / Robert M. Capraro and Scott W. Slough -- The Project Method in Historical Context / Lynn M. Burlbaw , Mark J. Ortwein and J. Kelton Williams -- Theoretical Framework for the Design of STEM Project-Based Learning / Scott W. Slough and John O. Milam -- Engineering Better Projects / James R. Morgan , April M. Moon and Luciana R. Barroso -- W3 of STEM Project-Based Learning / Serkan Özel -- Interdisciplinary STEM Project-Based Learning / Mary Margaret Capraro and Meredith Jones -- STEM Project-Based Learning: Specialized Form of Inquiry-Based Learning / Alpaslan Sahin -- Technology in STEM Project-Based Learning / Ozcan Erkan Akgun -- Affordances of Virtual Worlds to Support STEM Project-Based Learning / Trina Davis -- STEM Project-Based Learning and Teaching for Exceptional and Learners / Denise A. Soares and Kimberly J.

Vannest -- Classroom Management Considerations: Implementing STEM Project-Based Learning / James R. Morgan and Scott W. Slough -- Changing Views on Assessment for STEM Project-Based Learning / Robert M. Capraro and M. Sencer Corlu -- English Language Learners and Project-Based Learning / Zohreh Eslami and Randall Garver -- Project-Based Learning: An Interdisciplinary Approach for Integrating Social Studies with STEM / Caroline R. Pryor and Rui Kang -- Non-Newtonian Fluid Mechanics / Robert M. Capraro and Scott. W. Slough -- Ideation Rubric / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Oral Presentation Rubric / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Presentation Rubric PT1 Individual / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Presentation Rubric PT2 Group / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- STEM Project-Based Learning Storyboarding Guidelines / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Crossing the Abyss: Popsicle Stick Bridge: WDO/IDT / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Establishing Cooperative Group Behaviors and Norms for STEM PBL / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Building High Quality Teams / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Personal Responsibility and Time Management Report / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Accountability Record / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Peer Evaluation Handout / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Leadership/Effort Bonus Worksheet / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Simple Group Contract / Robert M. Capraro , Mary Margaret Capraro and James R. Morgan -- Sample Group Contract / Robert M. Capra.

Sommario/riassunto

This second edition of Project-Based Learning (PBL) presents an original approach to Science, Technology, Engineering and Mathematics (STEM) centric PBL. We define PBL as an “ill-defined task with a well-defined outcome,” which is consistent with our engineering design philosophy and the accountability highlighted in a standards-based environment. This model emphasizes a backward design that is initiated by well-defined outcomes, tied to local, state, or national standard that provide teachers with a framework guiding students’ design, solving, or completion of ill-defined tasks. This book was designed for middle and secondary teachers who want to improve engagement and provide contextualized learning for their students. However, the nature and scope of the content covered in the 14 chapters are appropriate for preservice teachers as well as for advanced graduate method courses. New to this edition is revised and expanded coverage of STEM PBL, including implementing STEM PBL with English Language Learners and the use of technology in PBL. The book also includes many new teacher-friendly forms, such as advanced organizers, team contracts for STEM PBL, and rubrics for assessing PBL in a larger format.