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Titolo	Creating engineering design challenges : success stories from teachers // edited by Helen Meyer, Anant R. Kukreti, Debora Liberi, and Julie Steimle
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ISBN	1-68140-699-3
Descrizione fisica	1 online resource (xiii, 191 pages) : illustrations
Soggetti	Engineering design - Study and teaching (Secondary) - Activity programs Project method in teaching
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface -- Engineering design challenges / Anant R. Kukreti, Julie Steimle, Kimya Moyo, and Helen Meyer -- Design challenge units and research on learning / Helen Meyer -- Defining and using our design challenge units / Debora Liberi, Julie Steimle, and Helen Meyer -- Setting the stage : create hooks to secure student buy-in / Lori Cooper, Kelly DeNu, Marie Pollitt, Kathryn Blankenship, and Debora Liberi -- Focusing on the engineering design process / Stephanie Stewart, Rashanna Freeman, Brandi Foster, and Debora Liberi -- Integrating assessment into design challenge units / Amy Jameson, Marie Pollitt, Kevin Tucker, and Debora Liberi -- Developing 21st-century skills with design challenge units / Brandi Foster, Leslie Lyles, and Debora Liberi -- Getting started with design challenge units / Kristin Barnes, Debora Liberi, Anant R. Kukreti, Julie Steimle, and Helen Meyer -- Appendix: The unit template.
Sommario/riassunto	"The next time you want to integrate engineering practices into your classes, consider this book your own personal idea-starter. The 13 units in 'Creating Engineering Design Challenges' provide innovative ways to make science and math relevant to middle and high school students through challenge-based learning and the engineering design

process. Content areas include biology, chemistry, physical science, Earth science, and environmental science. Topics range from developing a recipe for cement to implementing geocaching to calculating accurate aim with slingshots and water balloons. You can be sure the units are classroom-ready because they were contributed by the same teachers who developed, used, and revised them. The teachers were participants in the Cincinnati Engineering Enhanced Math and Science program, a project funded by the National Science Foundation. They provide detailed accounts of their units as well as lesson plans and handouts. The book also offers guidance on fostering professional development to support and grow your school's engineering education practice. 'Creating Engineering Design Challenges' can help you change your classroom environment, empower students, and move toward a more student-centered classroom culture that leads to deeper learning."--

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