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| ISBN | 1-68140-627-6 |
| Descrizione fisica | 1 online resource (xvi, 223 pages) : illustrations |
| Collana | Gale eBooks |
| Disciplina | 372.35044 |
| Soggetti | Science - Study and teaching (Elementary) Science - Study and teaching (Secondary) Technology - Study and teaching (Elementary) Technology - Study and teaching (Secondary) Engineering - Study and teaching (Elementary) Engineering - Study and teaching (Secondary) Mathematics - Study and teaching (Elementary) Mathematics - Study and teaching (Secondary) |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Preface -- Using this book : an introduction and guide -- Part I, Your leadership for creating STEM units. Introduction ; Introducing a vision for high-quality units ; Establishing a plan of action for high-quality units ; Conclusion -- Part II, Making decisions about selecting, adapting, and developing STEM materials. Introduction ; Clarifying and assessing the choices for instructional materials ; Recommendations for selecting and adapting STEM materials ; Conclusion -- Part III, Beginning the design of a STEM unit. Introduction ; An initial engagement : preparing a preliminary design ; Exploring the design of a unit ; Conclusion -- Part IV, Contemporary ideas for high-quality STEM units. Introduction ; Innovations and STEM education ; How students learn STEM content ; 21st-century skills and STEM units ; STEM practices ; Civil discourse in STEM classrooms ; Conclusion -- Part V, Practical recommendations for completing your unit design. Introduction ; Using backward design ; Using an instructional model ; |

Completing your unit design ; Conclusion -- Part VI, Developing a STEM unit. Introduction ; Science and engineering in standards and the curriculum ; Planning, conducting, and communicating investigations ; Principles and processes for curriculum development ; What does a high-quality STEM unit look like in practice? ; Developing your STEM unit ; Conclusion -- Part VII, Implementing your STEM unit. Introduction ; Planning lesson study for your STEM unit ; Lesson study : teaching, reviewing, and improving your STEM unit ; Conclusion -- Afterword.

Sommario/riassunto

"Science education's two-fold challenge is clear: Schools need to (1) align their curricula with contemporary state standards and (2) meet the growing demand for STEM education. What's not as clear: how to meet the challenge if your school doesn't have the right instructional materials. 'STEM, Standards, and Strategies for High-Quality Units' is designed to address both these needs. Thought leader and curriculum expert Rodger W. Bybee has assembled a guide to creating coherent, high-quality classroom materials that support the standards and STEM. The book provides practical background information and activities that can be adapted by individual teachers, professional learning communities, and professional developers. It starts with a section on making foundational decisions about your STEM unit's development. Later sections discuss getting started with preliminary designs, improving the designs with new knowledge and skills, developing the unit, and then teaching and further improving the unit as needed. Throughout, Bybee integrates contemporary educational strategies such as the 5E Instructional Model, backward design, and lesson study."

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