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Titolo	A companion to interdisciplinary STEM project-based learning : for educators by educators / / edited by Mary Margaret Capraro [and three others]
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ISBN	94-6300-485-8
Edizione	[Second edition.]
Descrizione fisica	1 online resource (VIII, 214 p.)
Disciplina	371.36
Soggetti	Project method in teaching Science - Study and teaching (Secondary) Technology - Study and teaching (Secondary)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	CONSTRUCTION AND DESIGN -- Antenna Dilemma -- Building a Better Cereal Box -- Building a Better Tomorrow: Designing the Home of the Future -- Cell Communities -- Classrooms That Improve Education -- Design Your Own High Tech High School -- Egg Drop Parachute -- Fuzzy Decisions: How Control Systems Are Developed -- Mars: The First Frontier -- WATER -- Aquaponics -- Dam: Will It Hold? -- Harmful Algal Blooms: Seeking a Solution for Our Safety -- Healthy Water Is Well Water: Homemade Water Filtration -- Sink or Float? You Be the Judge -- The Water Flows through It: Design and Build an Irrigation System -- ENVIRONMENT -- Carbon Footprint Reduction -- Renewable Energy Sources -- The Modern World: Plastic Pollution Shown through Fibonacci Numbers -- MIXTURES -- Experimenting with Modeling Clay Recipes -- Qualitative and Quantitative Analysis of White Powders and Clear Liquids -- Soap Making and Packaging -- TECHNOLOGY -- Emotion, Technology & The Body: The Role of Each in Technological Communication -- Game of Charging -- NUTRITION AND GENETICS -- Eat Healthy at Fast Food Restaurants -- Survival of the Fittest: Flying Hamster Genetics.

Sommario/riassunto

This text contains 25 Project-Based Learning (PBL) lessons written by a combination of undergraduate preservice teachers, inservice teachers, and graduate students. Everyone who wrote a chapter strives to improve STEM education to help others implement standards-based STEM instruction that takes learning in isolation to greater accountability through integrated and meaningful tasks that answer the question every teacher dreads: When am I going to use this? The PBLs were written to implement in middle and high-school classrooms. All of them are interdisciplinary in nature. We have divided them into six themes: construction and design, water, environment, mixtures, technology, nutrition and genetics. Each lesson contains a “schedule at a glance” and the “well-defined outcome” so you can quickly see how a particular PBL fits into your curriculum. Objectives are listed along with STEM connections written as objectives. We have included all materials needed and then each day of activities including an imbedded engagement, exploration, explanation, evaluation (including rubrics), and extension. We have tried to include everything necessary for successful implementation. This practical book is the perfect companion to the handbook for learning about implementing PBLs: Project-Based Learning: An Integrated Science, Technology, Engineering, and Mathematics (STEM) Approach – second edition.