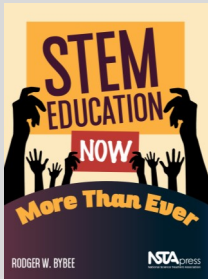


# STEM

Science, technology, engineering, and mathematics (STEM) is more than a concept diagram with connections among four (or more) subject areas. It's a unique way of knowing and exploring the world. The STEM approach involves the essence of the practices of science and engineering. Tools like communication skills are interwoven in STEM explorations. That seamlessness is what challenges educators around the world. This flyer provides a sample compilation of the National Science Teaching Association (NSTA) resources—selected based on their multidisciplinary nature and ability to integrate across two or more subject matters—to help teachers provide quality STEM instruction.



RODGER W. BYBEE

## STEM Education Now More Than Ever

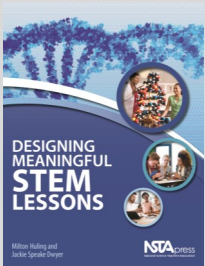


This is not a typical STEM book. Science education thought leader Rodger W. Bybee has created a thought-provoking book that tackles the familiar and not-so-familiar topics that make an updated case for STEM—including ideas about the Enlightenment, democracy, and citizenship as reminders of the effects of STEM disciplines on nations' foundational ideas and values. He ties it all together with positive, practical recommendations.

ISBN: 9781681406015 | (May 2018) 8-1/2" x 11", 159 pages

Rights sold: English reprint—Australia

Audience: Administrators, education leaders, science teachers, grades K–12 | Price: \$29.95



MILTON HULING & JACKIE SPEAKE DWYER

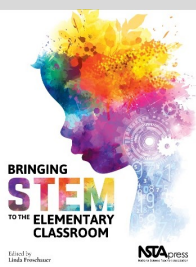
## Designing Meaningful STEM Lessons



Sure, there are lots of cool STEM activities to use in class. But do they really help students learn science? This book shows how to take lessons teachers are already familiar with and, through small changes, do what the title says: Design STEM lessons that keep science front and center. It shows teachers how to embed engineering, technology, and science applications in their lessons and provides 13 ready-to-use lessons in physical science, life science, and Earth and space science.

ISBN: 9781681405568 | (May 2018) 8-1/2" x 11", 199 pages

Rights sold: Chinese (simplified), English reprint—Australia | Audience: Science teachers, educators, grades 3–8 | Price: \$24.95



LINDA FROSCHAUER, *EDITOR*

## Bringing STEM to the Elementary Classroom

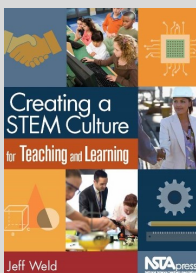


This book, curated by the editor of NSTA's award-winning journal *Science and Children*, contains 36 classroom-tested lessons grounded in science education research and designed to encourage learning across disciplines, promote real-world problem-solving skills, introduce children to STEM careers, and serve all students equally well. It provides teachers with new, interesting, and productive strategies to bring STEM alive for students.

ISBN: 9781681400303 | (May 2016) 8-1/2" x 11", 324 pages

Rights sold: Chinese (simplified & complex), English reprint—Australia

Audience: Science teachers, educators, grades preK–5 | Price: \$35.95



JEFF WELD

## Creating a STEM Culture for Teaching and Learning



Education leader Jeff Weld sees STEM as “a white-hot, transformative revolution in schooling as we know it.” He channels the wisdom of professionals in education, business, and government into the theory and policy behind nationally recognized education models for STEM. He explores why STEM matters; what STEM networks do; how to build community buy-in for STEM; what makes school–business STEM partnerships work; and what STEM means for teachers, learning, and assessment.

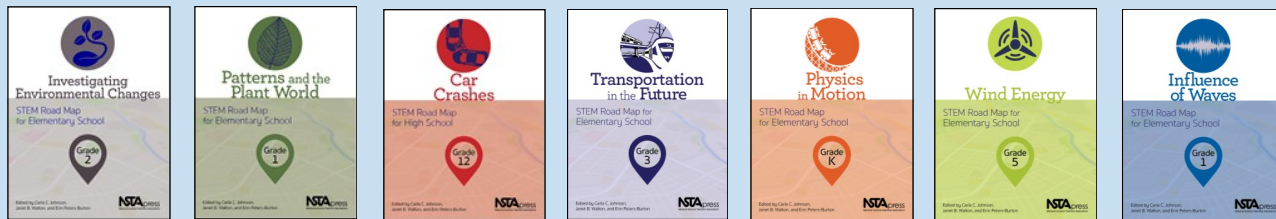
ISBN: 9781681403960 | (July 2017) 8-1/2" x 11", 180 pages

Rights sold: Chinese (complex) | Audience: Administrators, principals, science teachers, education leaders, grades K–12 | Price: \$37.95

## STEM Road Map Curriculum Series



This bestselling series is an in-depth, flexible resource that helps meet the growing need to infuse real-world learning into K–12 classrooms. Each of the 19 titles steers students toward authentic problem solving while grounding them in integrated STEM disciplines with an interdisciplinary module that uses project- and problem-based learning. Students will explore content, develop conceptual understanding of technology innovations, use inquiry activities in science, and apply this knowledge to a challenge working collaboratively. 8-1/2" x 11" | Price: \$24.95 (unless otherwise indicated)



### Amusement Park of the Future, Grade 6

Challenge 6th graders to work in teams to design an amusement park, including creating blueprints and models, building and testing small-scale prototypes, and developing cost-benefit analyses.

ISBN: 9781681404837 | 114 pages | (Nov 2017)

### Car Crashes, Grade 12

Challenge 12th graders to understand car crashes in the context of physical forces, manufacturing challenges, government safety standards, and individual rights. Timely and informative for students just starting to drive.

ISBN: 9781681405469 | 158 pages | (September 2018)

### Construction Materials, Grade 11

Challenge 11th graders to explore feats of engineering required to build high-rise buildings.

ISBN: 9781681404714 | 115 pages | (Nov 2017)

### Harnessing Solar Energy, Grade 4

Challenge 4th graders to examine solar energy's potential and limitations while taking part in an Water Conservation Expo to exhibit their understanding of solar energy, water scarcity, and desalination worldwide.

ISBN: 9781681404028 | 208 pages | (Nov 2017)\*

### Improving Bridge Design, Grade 8

Challenge 8th graders to explore infrastructure in their communities by constructing scale models of bridges using scale factor, linear equations, and models.

ISBN: 9781681404141 | 234 pages | (July 2018)

### Influence of Waves, Grade 1 NEW

Challenge first graders to create instruments they can play in their own musical show and learn about different types of waves, how our bodies respond to sound and light, and more.

ISBN: 9781681405049 | 185 pages | (Jan 2020) | Price: \$29.95

### Investigating Environmental Changes, Grade 2 NEW

Challenge 2nd graders to design an outdoor STEM classroom with a butterfly garden, birdbath, and sundial to make discoveries about a range of natural and human-created phenomena.

ISBN: 9781681405346 | 166 pages | (Feb 2019) | Price: \$29.95\*

### Natural Hazards, Grade 2 NEW

Challenge second graders learn how to help communities prepare for disasters ranging from floods and wildfires to earthquakes and hurricanes.

ISBN: 9781681405049 | 185 pages | (Jan 2020) | Price: \$29.95

### Patterns in the Plant World, Grade 1

Challenge first graders to relate changes in seasonal weather patterns to changes in the plant world using a container garden and creating an observation notebook to record data about their garden.

ISBN: 9781681405070 | 219 pages | (Oct 2018)\*

### Packaging Design, Grade 6

Challenge 6th graders to explore how marketing, packaging, and communications connect.

ISBN: 9781681404523 | 180 pages | (July 2018)

### Physics in Motion, Grade K NEW

Challenge kindergarteners to create a mini roller coaster to investigate concepts such as energy, gravity, friction, and speed.

ISBN: 97816814034592 | 202 pages | (Jan 2020) | Price: \$29.95

### Radioactivity, Grade 11 NEW

Challenge 11th graders to figure out the best response to a partial meltdown at a nuclear reactor to help them understand the debate over the safety of using nuclear power.

ISBN: 97816814034745 | 145 pages | (May 2019) | Price: \$29.95

### Rainwater Analysis, Grade 5 NEW

Challenge 5th graders to design rainwater recycling and delivery systems to provide water for a community garden as they use your own school building and grounds as a design lab.

ISBN: 9781681404493 | 256 pages | (Aug 2019) | Price: \$29.95\*

### Swing Set Makeover, Grade 3

Challenge 3rd graders to design a swing set that's safe but still lots of fun with this four-lesson interdisciplinary module.

ISBN: 9781681404622 | 220 pages | (Sept 2018)

### Transportation in the Future, Grade 3

Challenge 3rd graders to design the train of the future, working collaboratively and using the engineering design process to create a prototype train to safely carry passengers.

ISBN: 9781681403991 | 187 pages | (Aug 2017)\*

### Wind Energy, Grade 5

Challenge 5th graders to develop an economical, eco-friendly wind farm—a journey that investigates the interactions of Earth's systems, including geography, weather, and wind.

ISBN: 9781681404462 | 220 pages | (Dec 2017)\*

\*Rights sold: Chinese (simplified)



## The Changing Earth, Grade 8

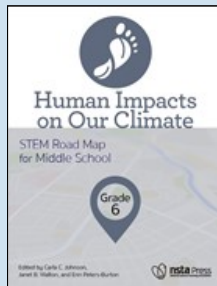
Challenge 8th graders to learn how to help people recognize the inherent risks of living in a region that’s prone to flooding, earthquakes, and volcanoes.

ISBN: 9781681404684 | 260 pages | (April 2020) | Price: \$31.45

## Healthy Living, Grade 10

Challenge 10th graders to develop a product or process that helps people embrace diet and exercise and has a positive impact on society while they learn authentic problem solving grounded in STEM disciplines.

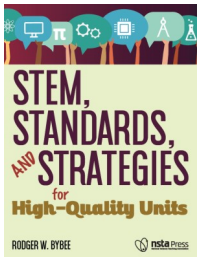
ISBN: 9781681404950 | 140 pages | (April 2020) | Price: \$31.45



## Human Impacts on Our Climate, Grade 6

Challenge 6th graders to identify a local environmental problem, develop a mode to help monitor and minimize its impact, and create presentation about their findings.

ISBN: 9781681404080 | 130 pages | (April 2020) | Price: \$31.45



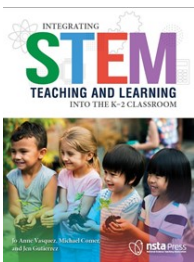
RODGER W. BYBEE

## STEM, Standards, and Strategies for High-Quality Units

This new book from education thought leader Rodger Bybee shows how to create coherent, high-quality classroom materials that make standards and STEM work together in ways that are both effective for learning and practical for teaching. Written to be useful for individual teachers, professional learning communities, and professional developers, it offers explicit directions for how these different groups can use its background information and activities at each step of developing a standards-based STEM unit, whether developing a new STEM program, adapting current instructional materials, or creating new materials.

ISBN: 9781681406268 | (April 2020) 8-1/2" x 11", 190 pages

Audience: Science teachers, professional learning communities, instructional designers, grades K–12 | Price: \$32.45



JO ANNE VASQUEZ, MICHAEL CORNER, & JEN GUTIERREZ

## Integrating STEM Teaching and Learning Into the K-2 Classroom

Here’s proof that STEM (science, technology, engineering, and mathematics) isn’t just for the big kids! This book’s 10 chapters are a mini-course on blending authentic, phenomena-driven, integrated STEM teaching and learning into busy K–2 classrooms. Based in both research and real-world experience, the authors provide professional learning experiences that help teachers make connections between STEM topics and the everyday activities they already doing with their students. Researchers agree that STEM education is important in early childhood. This book delivers the background and strategies every early childhood teacher needs to engage young students in STEM.

ISBN: 9781681406206 | (March 2020) 8-1/2" x 11", 165 pages

Audience: Science teachers, grades preK–2 | Price: \$31.45



The **National Science Teaching Association (NSTA)** is the largest organization in the world committed to promoting excellence and innovation in science teaching and learning for all. Its 50,000+ members include science teachers, science supervisors, administrators, scientists, business and industry representatives, and committed to science education. NSTA Press® delivers high-quality resources informed by the latest scientific education research, assessment, and standards-based instruction in all science disciplines. Each feature classroom-ready activities, hands-on approaches to inquiry, and relevant professional development.