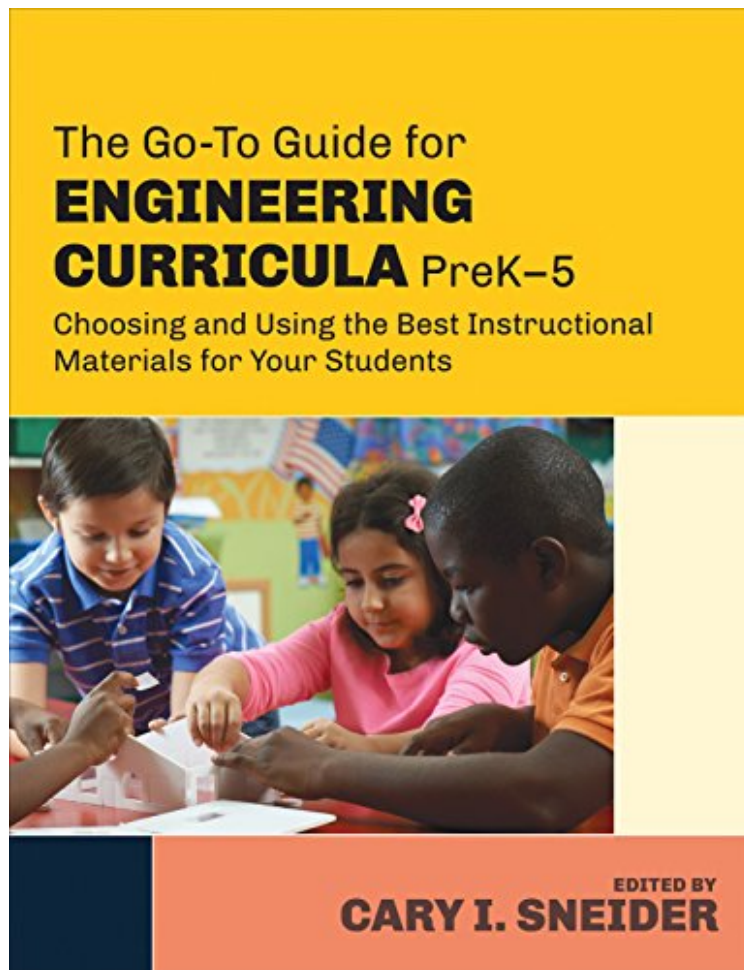


(Ebook free) The Go-To Guide for Engineering Curricula, PreK-5: Choosing and Using the Best Instructional Materials for Your Students

The Go-To Guide for Engineering Curricula, PreK-5: Choosing and Using the Best Instructional Materials for Your Students

From Corwin

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From Corwin : The Go-To Guide for Engineering Curricula, PreK-5: Choosing and Using the Best Instructional Materials for Your Students before purchasing it in order to gauge whether or not it would be worth my time, and all praised The Go-To Guide for Engineering Curricula, PreK-5: Choosing and Using the Best Instructional Materials for Your Students:

How to engineer change in your elementary science classroom With the Next Generation Science Standards, your students won't just be scientists—they'll be engineers. But you don't need to reinvent the wheel. Seamlessly weave engineering and technology concepts into your PreK-5 math and science lessons with this collection of time-tested engineering curricula for science classrooms. Features include: A handy table that leads you straight to

the chapters you need In-depth commentaries and illustrative examples A vivid picture of each curriculum, its learning goals, and how it addresses the NGSS More information on the integration of engineering and technology into elementary science education

" With engineering getting increased attention in the elementary science curriculum, this book is a tremendous resource for districts seeking high quality curricula that connect engineering with science and support the integrated nature of STEM learning both inside and outside of the school day. High quality curricula is the linchpin of effective teaching and learning. With the prominence of elementary engineering in the NGSS and revisions to state standards, elementary teachers and curriculum specialists will find this book of tremendous value in selecting curricula that integrate engineering and science. From an overview of the importance of engineering in the elementary grades to vivid descriptions of a variety of PreK-5 curricular resources, this book provides the information educators need to make sound curricular decisions that support the development of engineering concepts and practices. Elementary schools are faced with the exciting challenge of moving from science programs to STEM-related programs. Selection of high quality curricula is a key part of meeting this challenge. This book provides descriptions of well-designed school and out of school instructional materials as well as the background for understanding the critical and timely importance of including engineering in the PreK-5 science curriculum. Knowledge and confidence to teach engineering in the elementary science curriculum comes with access to high quality instructional materials. Without question, this book provides the information teachers and curriculum specialists need to make well-informed decisions that will give students the opportunity to use the engineering design process to both apply and develop their knowledge of science. With elementary engineering in the STEM spotlight, this book is timely and much needed!"--Page Keeley, Author, Speaker, and Science Education Consultant" I see this book as not only presenting a comprehensive introduction to a number of quality commercial elementary engineering programs (which it does well), but also framing them in the context of the need for and power of engineering education. The overview of NGSS anchors the material in the book within that larger field of science education today. As such, the book becomes much more than a presentation of commercial products."--David Vernet, Curriculum Consultant" It's heartening to see how highly regarded science educators like Cary Sneider and Janet Kolodner are proposing that engineering becomes a focal point of preK-5 curriculum and instruction. Engineering has a unique potential to contextualize science in contexts that are meaningful and authentic to children (and their teachers). Dr. Sneider's Go-To-Guide provides a framework for implementation, exemplary models, and sound advice to teachers wishing to embed engineering design and engineering thinking into their instructional programs. Dr. Cary Sneider has chosen to highlight a series of pedagogically sound and contemporary curriculum materials to serve as exemplars. Teachers and curriculum decision makers would do well to review and consider adopting the materials highlighted in his book."--Michael Hacker, Co-Director" Dr. Sneider's book is a just-in-time, much needed resource for elementary teachers, administrators, and teacher educators. With the advent of the Next Generation Science Standards and other increasing emphases on engineering in the classroom, many practicing elementary teachers are in great need of support. They need to know that there are high-quality, well-thought-out curricular options that they can use to scaffold engineering in their classrooms. This book provides exactly the introduction that they need. The curricula are thoroughly described, and the book includes everything that a teacher or an administrator needs to evaluate a curriculum for potential classroom use. The link to the NGSS objectives, that is included with each chapter, is of particular advantage. This book is an extremely valuable tool in a quickly changing field of education."--Laura Bottomley, Director" With engineering getting increased attention in the elementary science curriculum, this book is a tremendous resource for districts seeking high quality curricula that connect engineering with science and support the integrated nature of STEM learning both inside and outside of the school day. High quality curricula is the linchpin of effective teaching and learning. 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About the Author Cary Sneider is Associate Research Professor in the Center for Science Education at Portland State University in Portland, Oregon, where he teaches research methodology to teachers in a Master's degree program. In recent years he served the National Research Council as design lead for technology and engineering to help develop A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas, which has provided the blueprint for Next Generation Science Standards (NGSS). He then played a similar role on the writing team to produce the NGSS, which was released in April, 2013. The recognition that teachers would need access to instructional materials to help them meet the new standards led Cary to develop the current volume, Engineering Curricula Ready to Go! Cary was not always interested in engineering or at least he didn't know that he was. For as long as he can remember he was interested in astronomy. He read all he could find about it, and when he was in middle school his father bought him a small telescope. In high school Cary built his own telescopes, grinding mirrors and designing and building mountings. All this time he thought he was doing science. Today, he recognizes that like many scientists, he especially enjoyed the engineering part of the work. During his junior year at college Cary had an opportunity to teach at an Upward Bound program, and found that he enjoyed teaching even more than research in astronomy. In subsequent years he taught science in Maine, Costa Rica, Coalinga California, and the Federated States of Micronesia. He returned to college, this time to obtain a teaching credential and eventually a PhD degree in science education from the University of California at Berkeley. He spent nearly thirty years in Berkeley, developing instructional materials and running teacher institutes at the Lawrence Hall of Science. He spent another decade as Vice President at the Museum of Science in Boston, where he developed a high school curriculum called Engineering the Future, and finally moved to Portland, Oregon, to be closer to children and grandchildren. Over his career Cary directed more than 20 federal, state, and foundation grant projects, mostly involving curriculum development and teacher education. His RD interests have focused on helping students and museum visitors unravel their misconceptions in science, on new ways to link science centers and schools to promote student inquiry, and on integrating engineering and technology education into the K-12 curriculum. In 1997 he received the Distinguished Informal Science Education award from NSTA and in 2003 was named National Associate of the National Academy of Sciences for his service on several National Research Council committees.