

ITEEA 2023-2024 PRODUCT GUIDE



www.iteea.org • iteea@iteea.org

ABOUT ITEEA

Technology and Engineering Bring STEM to Life!™



THE INTERNATIONAL TECHNOLOGY AND ENGINEERING EDUCATORS ASSOCIATION (ITEEA)

(formerly the International Technology Education Association/ITEA) is the largest professional educational association, principal voice, and information clearinghouse devoted to enhancing technology and engineering education through experiences in our schools (K–12). Its membership encompasses individuals and institutions throughout the world, with primary membership in North America.

ITEEA REPRESENTS technology and engineering educators who are classroom teachers, developers, administrators, and university personnel in the field, representing all levels of education, while ITEEA corporate members are comprised of leading technology companies. ITEEA has members from over 45 different countries.

ITEEA CONDUCTS a vigorous public policy program, frequently providing information to government agencies, associations, and other special interest groups concerning technology and engineering education. The association strives to provide an understanding of the importance of technology and engineering education to the future growth and well-being of all nations.

ITEEA'S MISSION is to advance technological capabilities for all people and to nurture and promote the professionalism of those engaged in these pursuits.

ITEEA SEEKS to meet the professional needs and interests of members as well as to improve public understanding of technology education and its contributions. ITEEA's curriculum interests reside in the "T" and "E" of STEM (science, technology, engineering, and mathematics) education.

ITEEA HOLDS AN ANNUAL CONFERENCE – the largest technology education showcase of exhibits and educational sessions in the world.

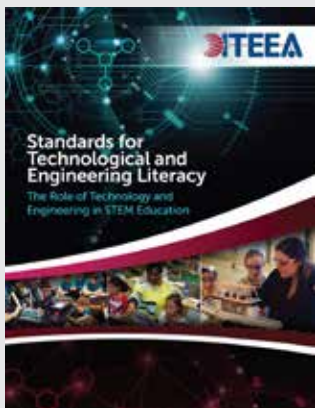
ITEEA SPONSORS an active honors and awards program that recognizes outstanding teachers and programs (K–12) from states, provinces, and countries that are affiliated with the association. ITEEA also presents award certificates and supports other programs that recognize outstanding efforts in the profession of technology and engineering education.

ITEEA PUBLISHES a variety of publications that lead the profession by providing teaching directions, instructional ideas, and networking opportunities, including:

- Journal: *Technology and Engineering Education: Bringing STEM to Life* (pg. 15)
- The Technological Literacy Standards Series (pg. 12) and related Addenda (pg. 13)
- *STEM Connections* – ITEEA's monthly electronic newsletter



ENGINEERING byDESIGN™ includes courses and units that comprise a comprehensive K–12 model program that delivers STEM and technological literacy.



86th Annual ITEEA Conference



Save the Date!

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NOTE: September 9, 2023

ITEEA's new website is under construction at this time. As a result, not all items in this catalog are available in the ITEEA eStore. If you cannot find an item you wish to order in the eStore at <https://www.iteea.org/products>, you can still order by fax (703-705-4823), phone (703-860-2100), or mail (at the address below). An order form is on page 17 of this catalog.

**International Technology and Engineering Educators Association
1908 Association Drive, Suite C
Reston, VA 20191
703-860-2100**

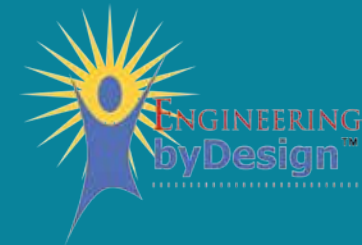
Thank you for your patience while we get the new ITEEA website up and running.

FOR THE MOST UP-TO-DATE INFORMATION about ITEEA activities, standards, programs, conferences, professional development, membership, publications, or resources, visit the ITEEA interactive website at

www.iteea.org

And for the latest information about the Engineering byDesign™ Program, be sure to check out the EbD™ site at

<https://www.iteea.org/engineering-bydesign>

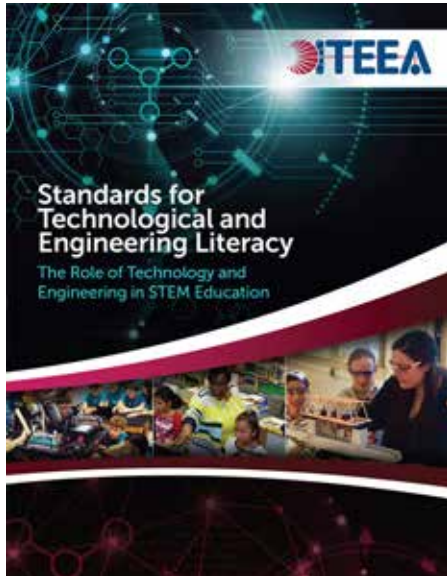


STANDARDS FOR TECHNOLOGICAL AND ENGINEERING LITERACY



NEW!

Standards for Technological and Engineering Literacy: *The Role of Technology and Engineering in STEM Education*



Technology and engineering are pervasive in all aspects of our lives. Every human activity is dependent upon the products, systems, and processes created to help grow food, provide shelter, communicate, work, and recreate. As the world grows more complex, it is increasingly important for everyone to understand more about technology and engineering. People need to understand technology's impacts on their lives, on society, and on the environment, as well as how to use and develop technological products, systems, and processes to extend human capabilities.

These understandings are all important elements of technological and engineering literacy. Standards for Technological and Engineering Literacy provides a vision of what students should know and be able to do in order to be technologically and engineering literate.

Standards for Technological and Engineering Literacy (STEL) provides an up-to-date road-map for classroom teachers, district supervisors, administrators, states, and curriculum developers to promote technology and engineering education program development and curriculum design from Pre-K through twelfth grade.



Free downloads are available at: <https://www.iteea.org/downloadpurchase-stel>

Nonmember Member

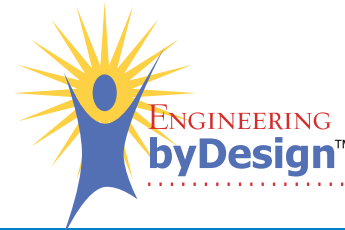
P271	Standards for Technological and Engineering Literacy	<i>print</i>	\$38.00	\$27.00
P271E	Standards for Technological and Engineering Literacy	<i>downloadable pdf</i>	free	free
P271B	Standards for Technological and Engineering Literacy	<i>downloadable ePub</i>	\$25.00	free
P272	STEL Executive Summary - 25 (pkg of 25)	<i>print</i>	\$25.00	\$25.00
P272E	STEL Executive Summary (single copy)	<i>downloadable</i>	free	free




ENGINEERING BYDESIGN™

A STANDARDS-BASED NATIONAL MODEL PROGRAM



The International Technology and Engineering Educators Association's **STEM Center for Teaching and Learning™** has developed the only standards-based national model for Grades K–12 that delivers technological literacy through Integrative STEM-based instruction. **Engineering byDesign™** is built on the *Next Generation Science Standards*, the *Common Core State Standards*, and the *Standards for Technological Literacy* (ITEA/ITEEA).



 K-12 Standards-Based The CORE 		
PreK-2		EbD-TEEMS NxtGeN™ 1-6 weeks
3-6		EbD-TEEMS NxtGeN™ (5th/6th grade capstone) 1-6 weeks
6		<i>Exploring Technology</i> 18 weeks
7		<i>Invention and Innovation</i> 18 weeks
8		<i>Technological Systems</i> 18 weeks
8-9		 EfA Extension Units: <i>Vertical Farms: Fresh Food for Cities</i> <i>Water: The World in Crisis</i> 4-7 weeks per unit
9		<i>Foundations of Technology</i> 36 weeks
9-10	HS Choices	<i>Coming soon... Computer Science Principles byDesign</i> 36 weeks
10-12		<i>Technological Design</i> 36 weeks
11-12		<i>Advanced Design Applications</i> 36 weeks
11-12		<i>Advanced Technological Applications</i> 36 weeks
11-12		<i>Engineering Design (Capstone)</i> 36 weeks



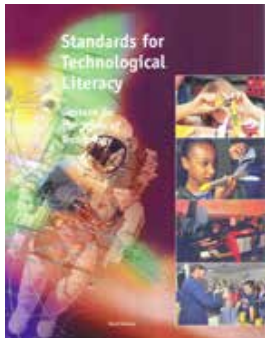
STEM CTL/EbD™ CONSORTIUM OF STATES

The **STEM Center for Teaching and Learning™ /STEM CTL™** is the research, curriculum, and professional development arm of the International Technology and Engineering Educators Association (ITEEA). ITEEA's STEM CTL™ is the sole-source developer of the Engineering byDesign™ (EbD™) Standards-Based Model Program and the EbD™ Teacher Network. Through ITEEA's STEM CTL/EbD™ Consortium, products and services are provided that are developed specifically for Consortium members. Membership in the Consortium provides exclusive rights to products and services in the year of development. The Engineering byDesign™ Program is based on the Understanding By Design (Wiggins and McTighe) process. EbD™ is the only model program based on three sets of content standards (Technology: ITEEA's *STL*, Mathematics: NCTM, and Science: AAAS/*NGSS*), as well as best practices for assessment, professional development, and curriculum development. The EbD™ Model Program has completed a crosswalk with the STEM and IT Clusters core knowledge and skill statements and provides articulated sequencing of courses. Contact ebd@iteea.org for additional information.

STL STANDARDS SERIES



STL Technological Literacy Standards Series

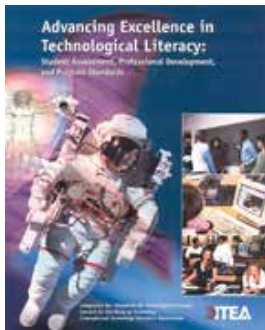


Standards for Technological Literacy: Content for the Study of Technology, *Third Edition*

Standards for Technological Literacy (STL) includes content standards for the study of technology in Grades K–12. It represents what every person should know and be able to do in order to be technologically literate. This document is designed for anyone who will be developing standards-based curricula as well as the technology education community at large because of its comprehensive treatment of the study of technology.

ISBN: 978-1-887101-02-8

P160E - \$24; Members \$20 ([downloadable pdf file](#))



Advancing Excellence in Technological Literacy: Student Assessment, Professional Development, and Program Standards

Advancing Excellence in Technological Literacy (AETL) is designed as a companion document to *Standards for Technological Literacy*. Like *STL*, *AETL* is based on the vision that all students can and should become technologically literate and was created to provide the means for implementing *STL* in K–12 laboratory-classrooms. ISBN: 978-1-887101-03-5

P184E - \$24; Members \$20 ([downloadable pdf file](#))

Note: There is no shipping charge for downloadable files.

Technological Literacy for All: A Rationale and Structure for the Study of Technology

The 2006 edition of *Technological Literacy for All: A Rationale and Structure for the Study of Technology* is a major rewrite of *Technology for All Americans: A Rationale and Structure for the Study of Technology* (ITEA, 1996) that enhances and updates the original edition considerably. It provides much more explanation of what technology and technological literacy are as well as why everyone needs to be technologically literate. This edition provides a logical transition from the 10 universals (processes, knowledge, and contexts) generated in the first edition into the 20 standards found in ITEA/ITEEA's *Standards for Technological Literacy* (2000/2002/2007). Also included in this new edition are sections on the teaching of technology in Grades K–12 and beyond.

P214E - \$15; Members \$12 ([downloadable pdf file](#))



Save the Date!

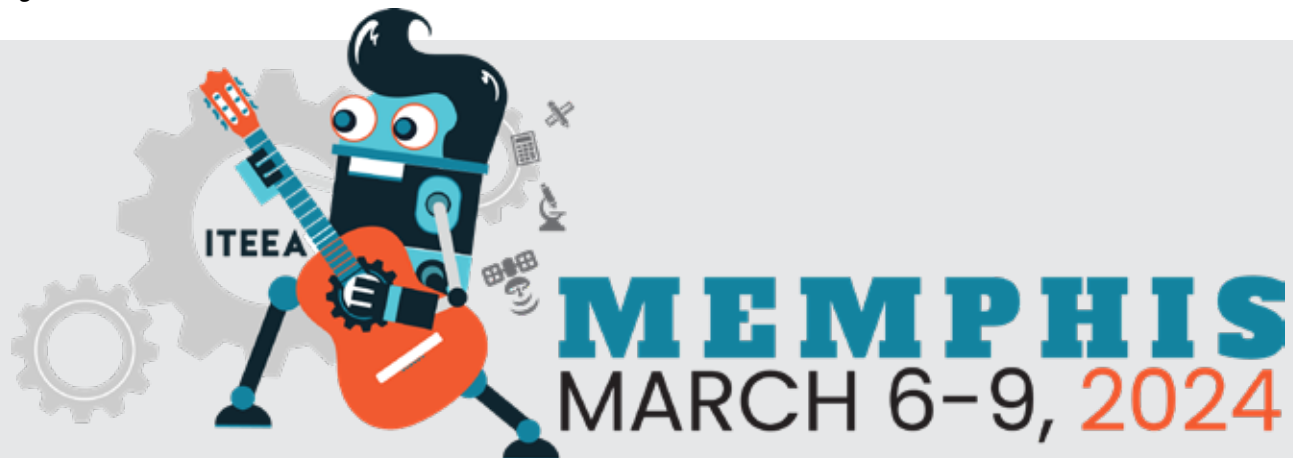
ITEEA's 86th Annual Conference

*Technology and Engineering:
The Soul of STEM*

March 6-9, 2024

Memphis, TN

<https://www.iteea.org/conference>



STL STANDARDS SERIES



Addenda to STL Technological Literacy Standards Series

Developed by ITEA/ITEEA's Technology for All Americans Project



Measuring Progress: *Assessing Students for Technological Literacy*

Measuring Progress is a resource for teachers to use as they plan and implement standards-based student assessment. It is intended to help users implement the student assessment standards in Chapter 3 of *AETL*. The step-by-step approach presented is a closely aligned modification of the widely accepted backwards design model outlined by Grant Wiggins and Jay McTighe. The modification enables the approach to be applied to many levels of the program—course, unit, or lesson. *Measuring Progress* also provides a handy resource for information about a variety of assessment tools and methods, including descriptions, guidelines for use, and lists of advantages and disadvantages. ISBN: 978-1-887101-04-2

P187E - \$23; Members \$19 ([downloadable pdf file](#))



Developing Professionals: *Preparing Technology Teachers*

Developing Professionals offers practical guidance for those who plan, implement, and/or evaluate the standards-based education of teachers of technology. It is intended to help users implement the professional development standards in Chapter 4 of *AETL* by addressing professional development at both the preservice and in-service levels, including the need for teacher candidates and teachers to become responsible for their own professional growth. ISBN: 978-1-887101-06-6

P190E - \$23; Members \$19 ([downloadable pdf file](#))



Planning Learning: *Developing Technology Curricula*

Planning Learning provides curriculum developers with a multistep approach to developing and revising standards-based technology curricula, complete with practical suggestions and worksheets. The approach is a modification of the widely accepted backwards design model outlined by Grant Wiggins and Jay McTighe. *Planning Learning* is also closely aligned with the approach for student assessment that is outlined in the addendum titled *Measuring Progress*. ISBN: 978-1-887101-07-3

P191E - \$23; Members \$19 ([downloadable pdf file](#))



Realizing Excellence: *Structuring Technology Programs*

Realizing Excellence is considered the “umbrella” addendum to all the other *STL/AETL* addenda and is intended to help educators implement the program standards in Chapter 5 of *AETL* (previous page). It offers educators and other concerned individuals practical suggestions and hands-on tools for planning, developing, implementing, and evaluating standards-based technology programs. ISBN: 978-1-887101-05-9

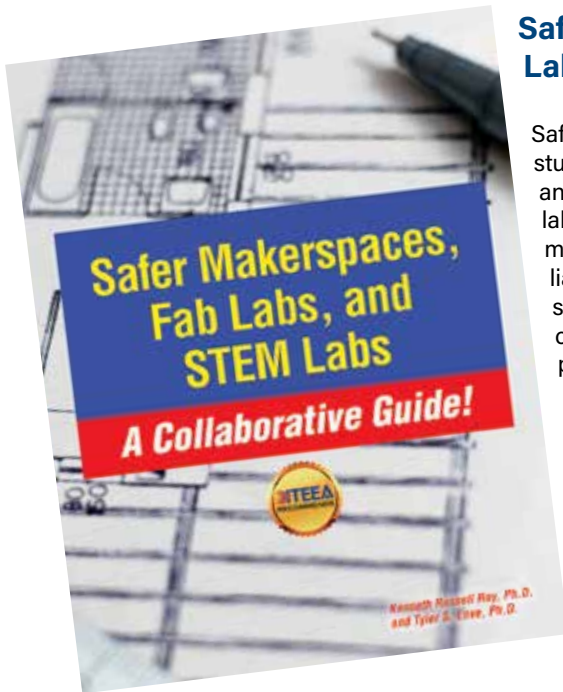
P189E - \$23; Members \$19 ([downloadable pdf file](#))

Note: There is no shipping charge for downloadable files.

ITEEA PUBLICATIONS



Is your laboratory-classroom the best it can be? **These ITEEA publications can help...**



Safer Makerspaces, Fab Labs, and STEM Labs: *A Collaborative Guide!*

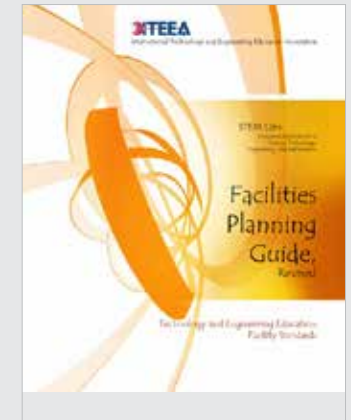
Safer hands-on STEM is essential for every instructor and student. Read the latest information about how to design and maintain safer makerspaces, Fab Labs, and STEM labs in both formal and informal educational and community settings. This book features information about liability/legal standards, better professional practices, safety controls, addressing biological/chemical/physical hazards, first aid procedures, the facilities planning process, recommended designs and existing examples, and frequently asked safety questions. It is easy to read, providing practical recommendations and examples for instructors, administrators, and media specialists. If your community or school system is looking to design or modify a facility to engage students in safer hands-on STEM activities, then this book is a must read!

FREE preview available at <https://sites.google.com/a/vt.edu/safetybook2017/>.

P268 - \$49; Members \$42 (print version only - spiral bound - shipping charges apply)

Facilities Planning Guide

While not all technology education laboratories will look exactly the same, there are certain laboratory requirements that should be included in any technology education laboratory design. These designated areas are defined in this standards-based ITEEA Facilities Planning Guide and provide logical and specific guidelines for designing and implementing a standards-based laboratory in your local school, no matter what the size.



While the primary focus of this guide is on senior high school laboratory requirements, the elements and recommendations are appropriate and relevant to any middle school-level laboratory and should be incorporated in any laboratory design.

P244E - \$23; Members \$18 (downloadable pdf file)



Designing Safer Learning Environments for Integrative STEM Education

Fourth Edition

V. William DeLuca and W. James Haynie, III

Revised in 2014 by Tyler S. Love and Kenneth Russell Roy

Completely revised in 2014, this manual aids teachers in developing and carrying out a safety program in the technology and engineering education classroom. The guide uses the systems approach: Safety in the classroom is dependent on the interaction of varied elements, and many of these elements are discussed in the text, such as the environment, human factors, tools and equipment, processes, materials, and outside influences. The manual includes sample releases and other forms that teachers can duplicate for classroom use. New in this edition are 18 printable safety posters with corresponding safety tests and PowerPoint presentations and videos that teachers can use to reinforce safer practices as well as a link to ITEEA's Safety Resource site where teachers can access these resources.

P221E - \$36; Members \$29 (downloadable zip folder)

Note: There is no shipping charge for downloadable files.

ITEEA PUBLICATIONS



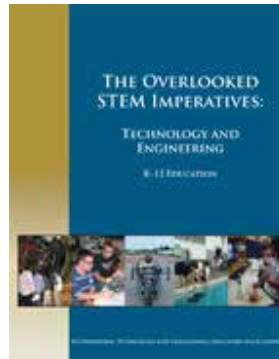
The Overlooked STEM Imperatives: Technology and Engineering, K-12 Education

As the STEM education movement gains momentum, our leaders cannot continue with the mentality that our society only moves forward on mathematics and science alone.

Take this opportunity to gain a better understanding of the need for STEM education and its critical role in creating a technologically literate society. The rationale for the "T and E" has been specifically addressed in order to gain support for these subjects as part of the overall STEM effort.

You are invited to explore the power and promise of a STEM (science, technology, engineering, and mathematics) education through this publication, but more importantly, to seek to understand the importance of ensuring that the "T and E" are equal partners within STEM to adequately prepare the next generation workforce as well as valued contributors to our communities and society.

P240E - \$15; Members \$13 ([downloadable pdf file](#))

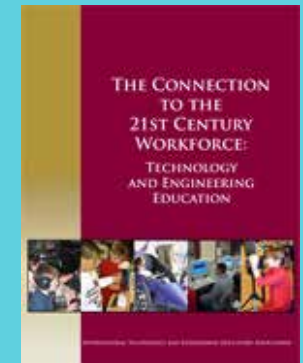


Note: There is no shipping charge for downloadable files.

The Connection to the 21st Century Workforce: Technology and Engineering Education

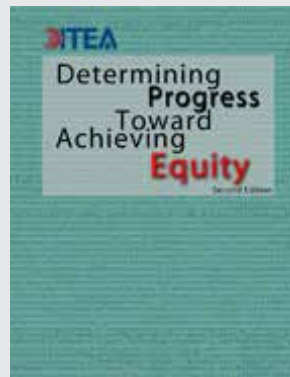
Building a competitive workforce for the 21st Century requires the careful alignment of K-12 and university curricula with the skill needs of business and industry. In addition to making students better problem solvers, critical thinkers, and users of technology, academic preparation must instill in them the desire to become lifelong learners, willing and able to adjust and adapt to changes in workforce skill requirements resulting from fast-changing global markets. This publication provides a snapshot of the current state of the economy and workforce, followed by the identification and requirements of knowledge and abilities needed for 21st Century occupations; an explanation of how technology and engineering education programs promote learning about technology and can be taught in exciting ways that motivate learners to pursue STEM occupations; chapters that explain the contributions of technology and engineering education, K-12; a chapter explaining how technology and engineering teacher education can prepare teachers to deliver the education that is needed by students of the 21st Century; and an overview of the benefits business and industry can expect from the recommendations made within this publication.

P246E - \$17; Members \$15 ([downloadable pdf file](#))



Equity Guide

Create a program that reflects educational equity, recognizing the learning differences of all students regardless of gender or ethnicity.

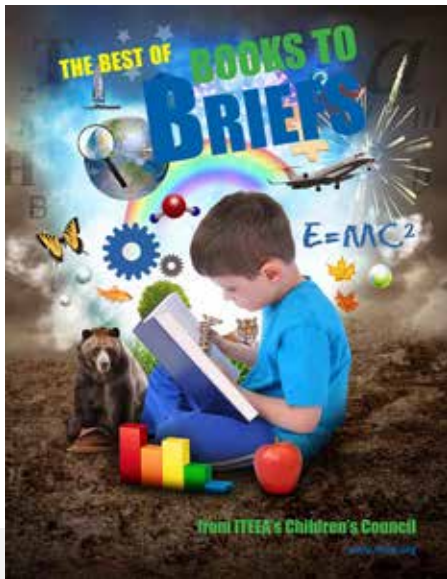


Determining Progress Toward Achieving Equity, *Second Edition*

This document includes the following materials:

- Equity in Science, Technology, Engineering, and Mathematics (STEM)
- Factors that Influence Females' Decisions to Participate in STEM Areas
- Assessing Equity in Your Program and Creating an Equity Action
- Retention and Recruiting
- Resources

P232E - \$23; Members \$19 ([downloadable pdf file](#))



FROM ITEEA'S CHILDREN'S TECHNOLOGY AND ENGINEERING JOURNAL

The Best of Books to Briefs

Books to Briefs has long been a popular feature in ITEEA's *Children's Technology and Engineering* journal. Educator authors begin with children's books and make clear connections to technology and engineering elementary curriculum through ready-to-use lesson plans, goals, worksheets, and more.

The Best of Books to Briefs is organized into three relevant content areas:

- The Engineering Design Process
- The Environment
- Making Connections

P267E - \$22; Members \$19 ([downloadable pdf file](#))

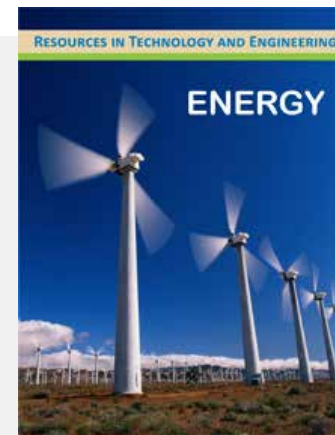
Resources in Technology and Engineering

These resources provide insights, perspectives, and innovation in technology for teachers and students. The authors view STEM as learning through Imagining! Each publication contains 5-7 in-depth, standards-based studies of relevant topics as well as suggestions for practical application. Previously published in *Technology and Engineering Teacher*.



Biotechnology/Medicine

P250E - \$17; \$15 Members
([downloadable pdf file](#))



Energy

P248E - \$17; \$15 Members
([downloadable pdf file](#))



Technological Innovation

P251E - \$17; \$15 Members
([downloadable pdf file](#))

Construction, Manufacturing, and Communication

P247E - \$17; \$15 Members
([downloadable pdf file](#))

Environment

P249E - \$17; \$15 Members
([downloadable pdf file](#))

Transportation

P252E - \$17; \$15 Members
([downloadable pdf file](#))

ITEEA PUBLICATIONS

FROM HARRY T. ROMAN



Classroom Challenges

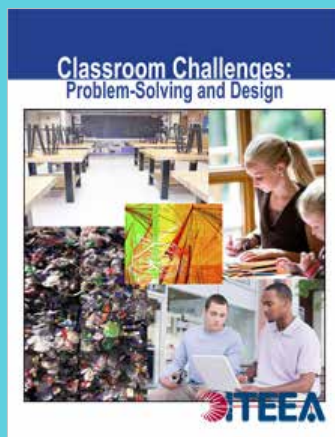
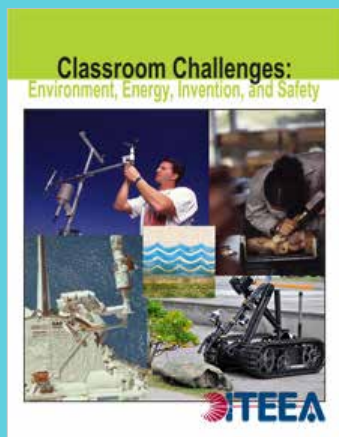
Here are classroom challenges designed to turbo-charge those creative juices and integrated subject discussions. Get students working in teams to address multidisciplinary and multidimensional aspects of real-world problem solving. Great stuff for the STEM classroom! Each publication contains 19-20 topics. Previously published in *Technology and Engineering Teacher*.

Environment, Energy, Invention, and Safety

P253E - \$15; \$13 members ([downloadable pdf file](#))

Problem Solving and Design

P254E - \$15; \$13 members ([downloadable pdf file](#))



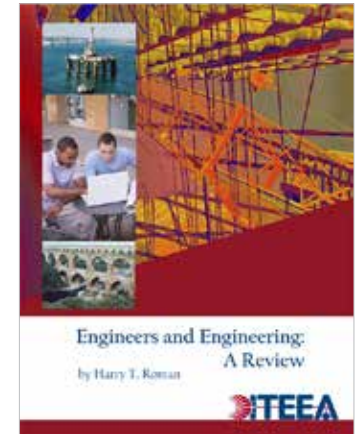
Engineers and Engineering: A Review

Students are fascinated by the topic of engineering, so why not treat them with *Engineers and Engineering: A Review*, a new e-book from ITEEA written by retired engineer and inventor, Harry T. Roman. Harry is a long-time ITEEA contributor and author and talks plain and simple about engineering and what engineers do.

You will learn about the legacy, excitement, and history of this noble profession, one of the oldest in the world—the people who built the pyramids and the other great wonders of the ancient world. In our STEM educational paradigm, the inclusion of engineering pays tribute to the time-honored tradition of the engineering problem-solving process, the foundation of all new product development.

Examine the daily activities of engineers, the different kinds of engineering, how engineers grow and mature on the job, and the salaries for professionals in the field today. See how engineers manage and lead project teams to complete large scale projects. Learn the critical skills engineers need to be successful; and how engineering and invention are so similar.

P261E - \$17; Members \$13 ([downloadable pdf file](#))



Alternate Energy Technology Design Challenges



Written by Harry T. Roman, author of the Classroom Challenge feature of *Technology and Engineering Teacher*, this publication contains 12 interesting and highly challenging alternate energy design problems that can be assigned to individual students or teams of students. Each problem is open-ended and multidimensional to give the student(s) a chance to experience the kinds of real-world problems that alternate energy engineers will face on the job.

P241E - \$15; Members \$13 ([downloadable pdf file](#))



Free Classroom Activities from Harry Roman and ITEEA! (Contribution of any amount to the ITEEA Foundation requested with download.)

Regular ITEEA contributor and author of the long-time "Classroom Challenge" feature in *Technology and Engineering Teacher*, Harry Roman, has released a new publication titled, *Super Book of 180+ STEM Classroom Activities to Stimulate Student Thinking and Creativity*.

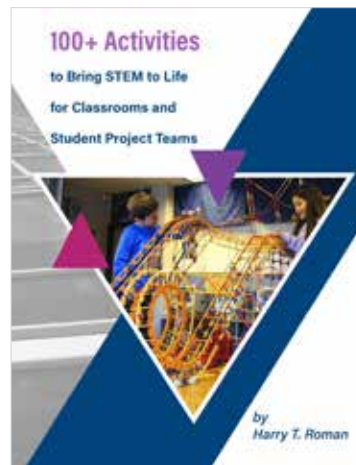
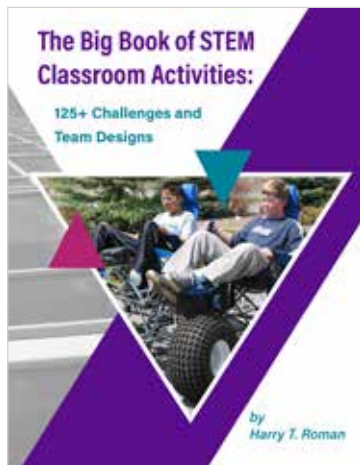
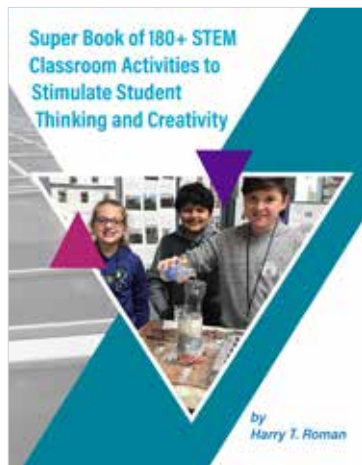
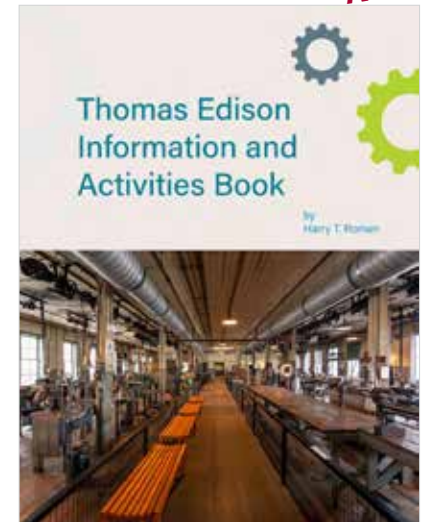
To support the important work of ITEEA's Foundation, Harry is providing his newest publication to all for download at no cost—but asks that anyone who downloads consider making a donation to the ITEEA Foundation.

Harry has previously released *The Big Book of STEM Classroom Challenges*, and *100+ Activities to Bring STEM to Life for Classrooms and Student Project Teams*, both of which are also available for download with a Foundation donation. As a retired engineer and inventor, Harry likes teaching teachers, students, and school leaders about STEM and its applicability.

The ITEEA Foundation is in the middle of its Capital Campaign, with a goal of raising \$250,000, which will allow it to continue providing much needed support to current and future educators, as well as to those in our communities who are in need of assistance. Without the continued support of generous donors like you, these needs will regrettably go unmet.

ITEEA's Foundation is depending on your assistance and generosity. Please enjoy these activities and donate today to pledge your support. Be assured that your contribution will be put to good use to support tomorrow's problem solvers today! Information about ITEEA's Foundation is online at <https://www.iteea.org/iteea-foundation>.

NEW!



Donate to the ITEEA Foundation:
<https://www.iteea.org/iteea-foundation>

Download *Super Book of 180+ STEM Classroom Activities to Stimulate Student Thinking and Creativity*

Download *The Big Book of STEM Classroom Challenges*

Download *100+ Activities to Bring STEM to Life for Classrooms and Student Project Teams*

Download *Thomas Edison Information and Activities Book*

Please email iteea@iteea.org or call 703-860-2100 for downloading instructions.

ITEEA PUBLICATIONS

EBD™-NASA STEM DESIGN CHALLENGE UNITS



Designing Human Exploration: People, Education, and Technology

Integrated into the Engineering byDesign™ (EbD™) model program are standards-based instructional units for elementary, middle, and high school that are presented in the context of space exploration. These units are available separately and can be used as stand-alone units. In some cases, the units are an integral component of an EbD™ course; in other instances, the units can serve to augment an EbD™ course or to replace an entire unit in the course.

HIGH SCHOOL UNITS:

Moving Cargo: *Focus:* Transportation. Serves as an augmentation or replacement for a *Foundations of Technology* unit or as a stand-alone unit.

Transportation and Space: Reuse and Recycle: *Focus:* Transportation (Grades 10-12). Serves as an augmentation or replacement for a *Technological Issues* unit or as a stand-alone unit.

Engineering Design for Human Exploration: *Focus:* Energy and Power. Serves as an integral part of *Engineering Design* or as a stand-alone unit.

Lunar Growth Chamber: *Focus:* STS-118 Lunar Plant Growth Chamber. Serves as a stand-alone unit. *(also available in Package P230CD)*

P237E- \$17 *(Package includes all four units – delivered in a downloadable zip folder as interactive electronic publications)*



MIDDLE SCHOOL UNITS:

Lunar Colonization: *Focus:* Energy and Power. Serves as an integral part of *Exploring Technology* or as a stand-alone unit.

Space Transportation: Reshooting the Moon: *Focus:* Transportation. Serves as an integral part of *Technological Systems* or as a stand-alone unit.

Creating a Space Exploration Infrastructure: *Focus:* Transportation. Serves as an integral part of *Invention and Innovation* or as a stand-alone unit.

Packing Up for the Moon: *Focus:* STS-118 Lunar Plant Growth Chamber. Serves as an augmentation or replacement unit in *Invention and Innovation* or as a stand-alone unit. *(also available in Package P230CD)*

P238E - \$17 *(Package includes all four units – delivered in a downloadable zip folder as interactive electronic publications)*



ELEMENTARY UNITS:

Moon Power: *Focus:* Energy and Power. Incorporates technological literacy, science, mathematics, language arts, and social studies standards. Available as a stand-alone unit in two tracks: Design and Build or Design and Evaluate.

Moon Munchies: *Focus:* STS-118 Lunar Plant Growth Chamber. Incorporates technological literacy, science, mathematics, language arts, and social studies standards. Available as a stand-alone unit in two tracks: Design and Build or Design and Evaluate. *(also available in Package P230CD)*

P239E - \$9 *(Package includes both units – delivered in a downloadable zip folder as interactive electronic publications)*



Units developed in collaboration with the ITEEA-NASA Designing Human Exploration Project



Lunar Plant Growth Chamber Design Challenges

Developed in conjunction with NASA's STS-118 Mission and the first Educator Astronaut in space.

The STS-118 Design Challenges coordinate with the Space Shuttle *Endeavour's* mission that flew in August 2007 with a six-person crew that included ITEEA member and Educator Astronaut, Barbara Morgan. The Design Challenges focus on a lunar plant growth chamber design. A second phase coordinates with the Design Challenge to offer a science experiment on the growing of seeds. Each unit consists of two tracks: Design and Build or Design and Evaluate.

Elementary Unit: Moon Munchies
Middle School Unit: Packing Up for the Moon
High School Unit: Lunar Growth Chamber

P230E - \$9 *All three units*



Through a partnership with NASA, ITEEA/ITEA is pleased to offer the STS-118 Design Challenges. These challenges coordinate with the Space Shuttle *Endeavour's* STS-118 mission that flew in August 2007 and delivered a payload to the International Space Station. The six-person crew included ITEEA member and Educator Astronaut, Barbara Morgan. Ms. Morgan and NASA are dedicated to inspiring the next generation of explorers and finding ways to connect space exploration with K-12 classrooms. The Design Challenges focus on a lunar plant growth chamber design. A second phase coordinates with the Design Challenge to offer a science experiment on the growing of seeds. Each unit consists of two tracks: Design and Build or Design and Evaluate.

ITEEA PUBLICATIONS

INVENTION, INNOVATION, AND INQUIRY (I³)



Invention, Innovation, and Inquiry (I³)

Invention, Innovation, and Inquiry: Units for Technological Literacy, Grades 5–6, was funded by the National Science Foundation. This project is so named because invention and innovation are the hallmarks of technological thinking and action. Each unit has standards-based content, suggested teaching approaches, and detailed learning activities, including brainstorming, visualizing, testing, refining, and assessing technological designs. Students will learn how inventions, innovations, and systems are created and how technology becomes part of their lives.

GRADES 5-6

Invention: The Invention Crusade

Students develop an idea for an invention by designing and constructing a working model or prototype of a gadget that helps a small child to do a household task.

P208 - \$15; Members \$12 ([print version](#))

P208E - \$15; Members \$12 ([downloadable pdf](#))

Innovation: Inches, Feet, and Hands

Students use the engineering design process to design and develop an improved product that is used by the human hand.

P209 - \$15; Members \$12 ([print version](#))

P209E - \$15; Members \$12 ([downloadable pdf](#))

Communication: Communicating School Spirit

Students examine communication processes and mediums by designing, developing, and implementing different types of commercial projects promoting school spirit.

P210E - \$13; Members \$10 ([downloadable pdf](#))

Transportation: Across the United States

Students investigate the systems of transportation and how transportation has impacted the United States. Then they apply their learning by designing a transportation vehicle.

P211 - \$15; Members \$12 ([print version](#))

P211E - \$15; Members \$12 ([downloadable pdf](#))

Inquiry: The Ultimate School Bag

Students use inquiry skills to redesign a school bag and construct a model of the "Ultimate School Bag."

P212 - \$15; Members \$12 ([print version](#))

P212E - \$15; Members \$12 ([downloadable pdf](#))

Manufacturing: The Fudgeville Crisis

Students explore food preservation and packaging as their companies mass-produce and package "fudge" for a Fudge Festival.

P216 - \$15; Members \$12 ([print version](#))

P216E - \$15; Members \$12 ([downloadable pdf](#))

Construction: Buildings and Beams

Students act as structural engineers and design and construct at least two laminated paper beams—testing, evaluating, and redesigning their beams for maximum strength.

P217 - \$15; Members \$12 ([print version](#))

P217E - \$15; Members \$12 ([downloadable pdf](#))

Power and Energy: Whispers of Willing Wind

Students gain an understanding of wind energy and power as they construct a device that captures wind energy and converts it to electricity.

P218 - \$15; Members \$12 ([print version](#))

P218E - \$15; Members \$12 ([downloadable pdf](#))

Design: Toying with Technology

Students explore two-dimensional (2D) and three-dimensional (3D) visualization processes and mediums by designing, developing, and building toys that solve a given problem.

P219E - \$13; Members \$10 ([downloadable pdf](#))

Technological Systems: Creating Mechanical Toys

Students investigate two mechanical devices—pneumatics and linkage mechanisms—and design a toy that uses both to create movement.

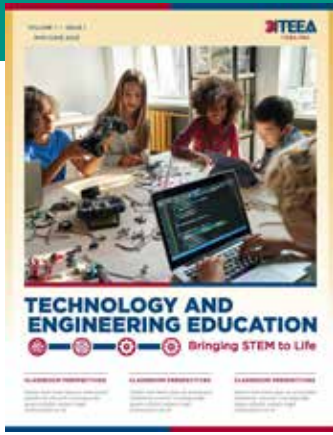
P220 - \$15; Members \$12 ([print version](#))

P220E - \$15; Members \$12 ([downloadable pdf](#))

All units contain teacher background information, handouts, transparency masters, and a student packet. Each unit is designed to integrate mathematics and science with technology and take 8 to 10 days.

PROFESSIONAL JOURNALS

Order subscriptions online at: <https://portal.iteea.org/Shop/Subscriptions>



TECHNOLOGY AND ENGINEERING EDUCATION

 Bringing STEM to Life

Technology and Engineering Teacher has undergone a rebranding and restructuring to ensure its relevance for all ITEEA stakeholders including technology and engineering teachers, STEM teachers, and education leaders. Starting in September 2023, ITEEA's new flagship journal, ***Technology and Engineering Education: Bringing STEM to Life***, will be published five (5) times per year with an increased page count, compared to the current schedule of eight (8) shorter issues per year, ultimately resulting in an increase in content. Further, ITEEA is bringing more voices to the table with a new, diverse Editorial Team, with expertise from classroom teachers to principals, industry to higher education, plus international perspectives.

Subscribe to ***Technology and Engineering Education: Bringing STEM to Life***—the leading professional journal of technology and engineering education. Each issue contains ideas for the classroom and technology learning activities that teachers find very useful. These activities are successfully being used in classrooms around the country and are age-appropriate for students in Grades K–12. Also included:

- ◆ STEM Centerpiece
- ◆ Research Brief
- ◆ Lessons from STEM Leaders
- ◆ Global STEM
- ◆ Career Connections
- ◆ Teacher Spotlight

Published five times during the school year (beginning in September), *TEE* is a valuable resource for your classroom.

ITEEA MEMBERS – All memberships include one electronic *TEE* subscription.

Elementary and MS/HS group memberships include multiple copies.

Print subscriptions must be ordered separately.

**Subscription prices include Shipping & Handling via surface mail.*

TEE01 - Print *TEE* Domestic subscription - Member \$50; Nonmember \$110

TEE02 - Print *TEE* International subscription - Member \$65; Nonmember \$140

TEE03 - Electronic *TEE* Nonmember subscription - \$70/year

TEE01-1 - Single *TEE* issue (print) - \$11.00

**Shipping & Handling charges will be added to single copy prices. To order individual print issues please contact the ITEEA office at (703) 860-2100 or email iteea@iteea.org.*

TEE03-1 - Single *TEE* issue (electronic) - \$8.50

Electronic journals will be delivered via email as a link to both pdf and html versions.

Journal of Technology Education

JTE is a refereed scholarly journal that provides a forum for discussion of technology education. Conceptual as well as research-based articles are published. This biannual journal is cosponsored by ITEEA and its Council on Technology and Engineering Teacher Education (CTETE).

ORDER ONLINE AT: <https://www.iteea.org/news/jte>

JTE01 - Print *JTE* subscription, USA - \$20/year

JTE02 - Print *JTE* subscription, outside USA - \$30/year

JTE03 - Print *JTE* library subscription, USA - \$30/year

JTE04 - Print *JTE* library subscription, outside USA - \$40/year

PLEASE DIRECT INQUIRIES TO: Annette Rose and Jim Flowers, *JTE* Editors, jte@iteea.org

ITEEA ENCOURAGES ITS READERS

TO CONTRIBUTE TO THE FIELD OF TECHNOLOGY AND ENGINEERING EDUCATION THROUGH SUBMISSION OF ARTICLES FOR THESE VITAL PUBLICATIONS.

FOR MORE INFORMATION ON THE SUBMISSION PROCESS, CLICK [HERE](#)

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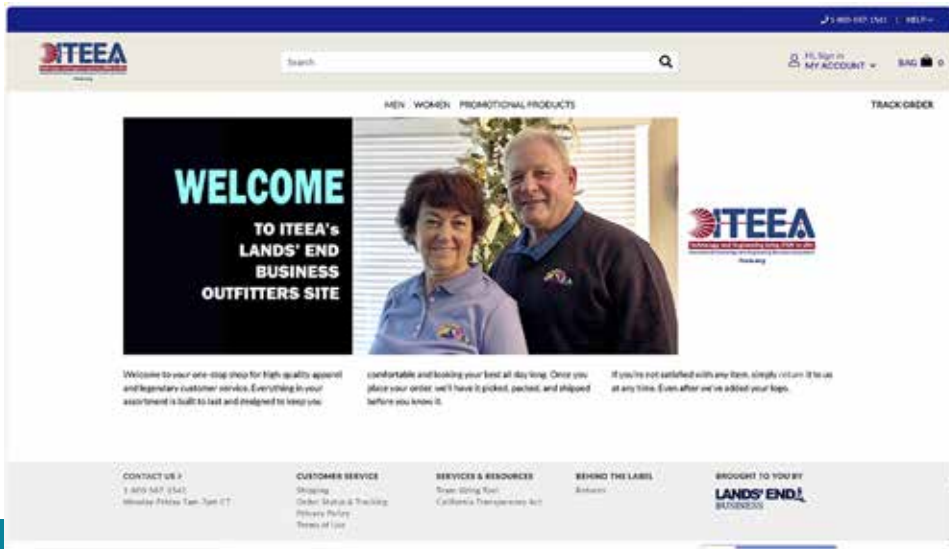
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ITEEA Membership Pin

T181 - \$80; Members - \$5

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Council for Supervision and Leadership (CSL)

T182 - Members Only - \$5

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This certificate describes the goals and aims of technology and engineering education and its professionals. Suitable for framing (8 1/2" x 11"). **T105 - \$1 each**



Student Recognition Award Certificate

Use these handsome 8 1/2" x 11" certificates to recognize the work of your outstanding students. Each certificate is signed by both ITEEA's President and Executive Director.

T025 - \$1 each

T026 - 5 copies for \$4

