About the *Rhode Island K-12 Grade Span Expectations in Engineering and Technology*

There has been an unparalleled acceleration of change in technology over the last century. Technology is much more than computers and software yet it is often defined only as such. Defined in its simplest form, technology is all the ways that we change the world to meet people's needs and desires. Technology is pencils and paper, the clothes we are wearing, and the food we for breakfast. Engineering is the improvement and creation of technologies using a systematic approach called engineering design. Engineering and technology emerge from the application of scientific and mathematical knowledge and therefore, both are inextricably tied to science and mathematics. The document, *Engineering in K–12 Education: Understanding the Status and Improving the Prospects*, noted that inclusion of engineering and technology provides the K-12 student with a number of benefits including stimulating interest and improving achievement in mathematics and science, developing design skills, increasing technological literacy, and attracting students to careers in the STEM fields[1]. In fact, the report found that enhancing the study of science and mathematics for all students—the "mainline"—was the most common objective of existing K–12 engineering curricula. Only a few had as their primary purpose preparing students to pursue careers in engineering or other technical fields, often referred to as the engineering or STEM "pipeline."[2]

> *"Technological literacy is much more than just knowledge about computers and their application. It involves a vision where each citizen has a degree of knowledge about the nature, behavior, power, and consequences technology from a broad perspective."*
> Technology for ALL Americans page 1

This document, the *Rhode Island K-12 Grade Span Expectations (GSEs) in Engineering and Technology,* has been developed as a means to identify the concepts and skills necessary to foster literacy in Engineering and Technology expected of all students. The GSEs provide direction for in-depth learning and application of skills that will be required to meet the challenges of a future that is increasingly dependent upon a STEM literate workforce.

The RI Engineering and Technology GSEs were informed by the International Technology and Engineering Education Association (ITEEA) *Standards for Technological Literacy*. They are intended as guidelines that represent the aspects of the

[1] National Academy of Engineering. 2009. Engineering in K–12 Education: Understanding the Status and Improving the prospects. Edited by L. Katehi, G. Pearson, and M. Feder. Washington, DC: National Academies Press.
[2] National Academy of Engineering. 2010. Standards for K-12 Engineering Education? Edited by G. Pearson, M Keitz, and C. Arenberg. Washington, DC: National Academies Press.

Engineering and Technology curriculum at each grade span and are meant to illuminate the elements of the designed world. The intent of this document is to inform local curriculum development, not to restrict it. The RI Engineering and Technology GSEs assessment targets encompass the content eligible for inclusion in local assessment.

The Engineering and Technology GSEs are written in grade spans, specifically, K--4, 5-8, and 9-12. As you review the *Rhode Island K-12 Grade Span Expectations in Engineering and Technology,* the following information is important to understand, particularly the relationship between the Engineering and Technology GSEs and the Engineering and Technology assessment targets.

The Engineering and Technology GSEs are organized in the following manner:

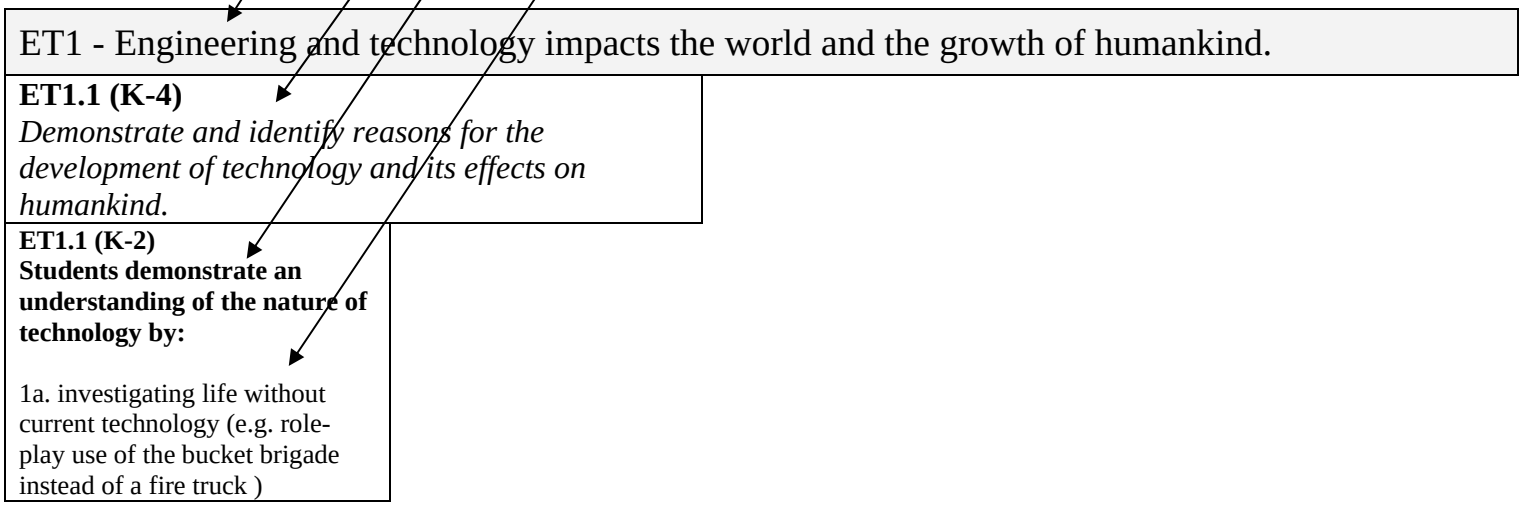
1. The three **Statements of Enduring Knowledge** (EK) (listed in Table 1):
    a. are intended to identify the fundamental knowledge/concepts
    b. cut across grade levels, so that learning is developmental/built upon across grades (although not all aspects of the EK may be addressed at all grade levels)
    c. are of comparable grain size
    d. encompass, as a set, the *essential learning for Engineering and Technology*
    e. imply topics of study (and therefore, lead to focused instruction, as identified in Engineering and Technology standards/benchmarks/GSEs)

TABLE 1 Statements of Enduring Knowledge (EK)	
Engineering and Technology	ET1 - Engineering and technology impacts the world and the growth of humankind.
	ET2 - Effective design through engineering and technology is the outcome of a problem solving process involving the application of content knowledge, acquired skills, and creativity
	ET3 - The designed world community selects and uses the appropriate technology.

2. Each **Assessment Target** is linked to one Statement of Enduring Knowledge (EK), as indicated with the target's coding (e.g., The code,**ET1,** means Engineering and Technology and refers to the first EK statement, **ET2** means Engineering and Technology refers to the second EK, etc.)

3. The *Rhode Island K-12 Grade Span Expectations in Engineering and Technology* are sequenced in the following manner:

Statement of Enduring Knowledge (EK)
Assessment Target that addresses the EK
STEM that couples the Target to the Grade Span Expectation (GSE)
Grade Span Expectation that addresses the assessment target



4. Table 2 illustrates an example: ET2.1 (K-4) means that this target addresses the second Engineering and Technology EK statement (ET2); the (K-4) grade span; and is the first assessment target listed. For a more detailed explanation see READING AN ENGINEERING AND TECHNOLOGY GSE found on page 5 of this document.

Table 2
Sample Target Coding

ET2 - Effective design through engineering and technology is the outcome of a problem solving process involving the application of content knowledge, acquired skills, and creativity. (ITEA STL 8-13)

Elementary Target	Middle School Target	High School Target
ET2.1 (K-4) *Explore and recognize the attributes of the design process.*	**ET2.1 (5-8)** *Explore and recognize the attributes of the design process.*	**ET2.1 (9-12)** *Explore and recognize the attributes of the design process.*

Assessment Targets are numbered consecutively. For example, at grades K-4, Engineering and Technology targets are numbered 1.1 though 3.2 (beginning with ET1 and then continuing with ET2 and ET3).

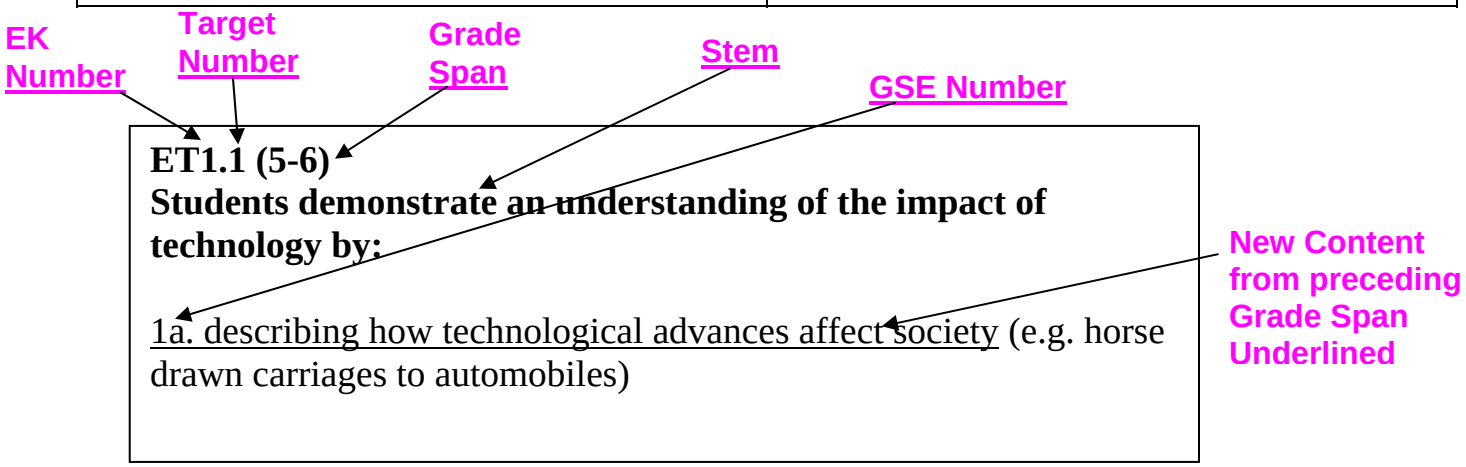
While the Statements of Enduring Knowledge are the same across all grade spans, the set of related targets within a grade span do not address all aspects of the EK Statement. This was done intentionally to focus instruction and assessment on the essential learning for the grade span, as well as on the developmentally appropriate concepts and skills. For example, at the elementary grade span, ET1.1 will focus on reasons for the development of technology, while the middle school grade span will move to providing evidence of how technology influences history and society,

The Rhode Island K-12 Engineering and Technology Assessment Targets are…

- derived from and aligned with ITEEA *Standards for Technological Literacy*
- designed to be general/broad enough to allow for multiple assessments with varying cognitive demands (Depth of Knowledge Levels)
- written, for the most part, with an intended cognitive demand ceiling consistent with Depth of Knowledge (DOK) Levels 2 (Skills & Concepts) or 3 (Strategic Thinking) – based on the work of Norman L. Webb

READING AN ENGINEERING AND TECHNOLOGY GSE

Statement of Enduring Knowledge	Target
ET1 - Engineering and technology impacts the world and the growth of humankind.	**ET1.1 (5-8)** *Compare, contrast, and provide evidence of how technology influences history and impacts society.*



ET1 - Engineering and technology impacts the world and humankind.					
ET1.1 (K-4) *Demonstrate and identify reasons for the development of technology and its effects on humankind.*		**ET1.1 (5-8)** *Compare, contrast, and provide evidence of how technology influences history and impacts society.*		**ET1.1 (9-12)** *Identify the factors affecting technological advances (e.g. social, economic, political, cultural, and environmental) throughout history.*	
Grade Span Expectations (K-4)		**Grade Span Expectations (5-8)**		**Grade Span Expectations (9-12)**	
ET1.1 (K-2) **Students demonstrate an understanding of the nature of technology by:**	**ET1.1 (3-4)** **Students demonstrate an understanding of the nature of technology by:**	**ET1.1 (5-6)** **Students demonstrate an understanding of the impact of technology by:**	**ET1.1 (7-8)** **Students demonstrate an understanding of the impact of technology by:**	**ET1.1 (9-12)** **Students demonstrate an understanding of the influences of technology by:**	***Example Extensions*** **Students demonstrate an understanding of the influences of technology by:**
1a. investigating life without current technology (e.g. role-play use of the bucket brigade instead of a fire truck)	1a. comparing and contrasting life with and without current technology and how technology impacts everyday life.	1a.). researching and displaying how technological advancements have inspired historical events (e.g. Cold War/Sputnik, slavery/ cotton gin)	1a. describing how technological advances affect society (e.g. horse drawn carriages to automobiles)	1a. analyzing factors related to the development of technology and its effects on the rate of change on the designed world.	1aa. forecasting technological advancements based on potential needs and wants. (e.g. eBooks, Kindle)
1b. describing how technology affects daily human routines (e.g. How does milk get from the cow to the home refrigerator?)	1b. recognizing that technology has positive and negative outcomes utilizing specific examples.	1b. listing and describing the importance of technology in daily life and its trade-offs	1b. comparing and contrasting the social and economic concerns that arise for the individual, the family, and/or the community as a result of technological advancements	1b. assessing the relationship between available resources and the development of technology.	1bb. developing technology to meet a need and identify potential tradeoffs.
1c. differentiating between needs/wants, helpful/harmful, disposable/reusable, and natural/human-made products.	1c. identifying natural (e.g. wood, fur, stone) vs. human-made objects (e.g. plastic, Styrofoam)	1c. evaluating the many and varying uses of technology within different geographic regions (e.g. geothermal, tidal, and wind power	1c. analyzing the use of technology within various cultures (e.g. Amish, Japanese	1c. analyzing the evolution of factors affecting technological advances in a global environment (e.g. satellites, transportation, media).	

ET1 - Engineering and technology impacts the world and humankind.

ET1.2 (K-4) *Discuss and develop an understanding of technology and its relationship to the natural and designed (human-made) world in the local community.*		**ET1.2 (5-8)** *Describe and demonstrate the effects of technological systems on humankind in terms of a national scale.*		**ET1.2 (9-12)** *Analyze and explain advancements in technological systems and their impact on the world.*	
Grade Span Expectations (K-4)		**Grade Span Expectations (5-8)**		**Grade Span Expectations (9-12)**	
ET1.2 (K-2) **Students demonstrate an understanding of the need for technology by:**	**ET1.2 (3-4)** **Students demonstrate an understanding of the need for technology by:**	**ET1.2 (5-6)** **Students demonstrate an understanding of the outcomes of technology by:**	**ET1.2 (7-8)** **Students demonstrate an understanding of the outcomes of technology by:**	**Students demonstrate an understanding of the impacts of technology by:**	***Example Extensions*** **Students demonstrate an understanding of the impacts of technology by:**
2a. understanding that technology can make life easier (e.g. clothes, telephone, automobile, microwave).	2a. understanding that technology is any process or invention that affects society (e.g. impact of the tractor on farming, indoor plumbing).	2a. making connections between technological inventions and their impacts on a nation. (e.g. automobiles and highway systems; computerized machines and manufacturing).	2a. designing a technological product and explaining how it may impact society. (e.g. television, cell phones, jumbo jets, water purification systems)	2a. revising a current technological system and analyzing the global effects of the innovation (e.g. transition from fossil fuels to use of renewable resources).	2aa. designing a technological system to meet a specified need and analyzing its potential impact on the world
2b. discussing the purpose of technology and its relationship to the natural and designed world	2b. discussing the purpose of technology and how it has affected humankind. (e.g. interview people from different generations to compare changes in lifestyles due to technological advancements).	2b. researching and analyzing the effects on humankind and the environment that a particular technology has had over a period of time (e.g. landfill, dam on a river, desalinization plant).	2b. associating and illustrating the effects of particular technological systems over a period of time (e.g. waste disposal systems, potable water systems)	2b. modeling the design of a technological system and evaluating its impact on humankind	

ET2 - Effective design through engineering and technology is the outcome of a problem solving process involving the application of content knowledge, acquired skills, and creativity.					
ET2.1 (K-4) *Explore and recognize the attributes of a design process.*		**ET2.1 (5-8)** *Utilize the attributes of a design process to solve a real world problem.*		**ET2.1 (9-12)** *Evaluate and refine the design used to solve a real world problem.*	
Grade Span Expectations (K-4)		**Grade Span Expectations (5-8)**		**Grade Span Expectations (9-12)**	
ET2.1 (K-2) **Students demonstrate an understanding of the attributes of a design process by:**	**ET2.1 (3-4)** **Students demonstrate an understanding of the attributes of a design process by:**	**ET2.1 (5-6)** **Students demonstrate an understanding of the attributes of a design process by:**	**ET2.1 (7-8)** **Students demonstrate an understanding of the attributes of a design process by:**	**ET2.1 (9-12)** **Students demonstrate an understanding of the attributes of a design process by:**	**Example Extensions** **Students demonstrate an understanding of the attributes of a design process by:**
1a. asking questions, making observations, and brainstorming various ideas.	1a. defining a problem and expressing design ideas for that problem to others.	1a. defining a problem that addresses a scenario with given criteria and constraints.	1a. defining a problem that addresses a scenario by identifying its criteria and constraints.	1a. identifying in-depth criteria and constraints by developing a concise problem statement.	1aa. reevaluating the process utilized in the development of the design solution with the goal of enhanced efficiency.
1b. exploring solutions to a problem based upon observations and brainstorming ideas.	1b. solving problems through the creation of design solutions.	1b. selecting an appropriate design solution for a given scenario or task.	1b. selecting and justifying an appropriate design solution for a given scenario or task.	1b. evaluating and finalizing the most appropriate design solution for a given scenario or task	1bb. identifying the personnel positions required to complete a task and the essential qualities required of each position
1c. completing tasks cooperatively in a group setting.	1c. identifying the characteristics of being an effective team member and working together to complete a task.	1c. fulfilling a specific function as a team member to achieve a desired result.	1c. explaining what makes an effective design team and working together to achieve a desired result.	1c. creating a team and assigning roles to team members for the purpose of achieving an overall desired result.	

ET2 - Effective design through engineering and technology is the outcome of a problem solving process involving the application of content knowledge, acquired skills, and creativity.					
ET2.2 (K-4) *Explore and recognize basic technological products and systems, as well as their tools.*		**ET2.2 (5-8)** *Use and maintain technological products and systems, as well as their tools.*		**ET2.2 (9-12)** *Incorporate technological products, systems and their tools to achieve design solutions.*	
Grade Span Expectations (K-4)		**Grade Span Expectations (5-8)**		**Grade Span Expectations (9-12)**	
ET2.2 (K-2) **Students demonstrate an understanding of technological products and systems by:**	**ET2.2 (3-4)** **Students demonstrate an understanding of technological products and systems by:**	**ET2.2 (5-6)** **Students demonstrate an understanding of technological products and systems by:**	**ET2.2 (5-6)** **Students demonstrate an understanding of technological products and systems by:**	**ET2.2 (9-12)** **Students demonstrate an understanding of technological products and systems by:**	**Example Extensions** **Students demonstrate an understanding of technological products and systems by:**
2a. identifying and safely using the required tools (e.g. glue, scissors, tape) for a specific task.	2a. identifying and safely using the required tools (e.g. glue, scissors, tape) and information resources for a specific task.	2a. safely using the required tools and organizing information resources for a specific task.	2a. safely using the required tools and organizing and explaining information resources for a specific task.	2a. selecting independently the proper tools or information resources used in completing a task.	2aa. designing specific tools (e.g. jigs and fixtures) to expedite the task.
2b. collecting and using information about everyday products and symbols. (e.g. shape and color of a stop sign)	2b. using information to identify patterns within those systems.	2b. incorporating assigned materials and assigned tools throughout the design process.	2b. incorporating information, proper materials and tool selection throughout the design process.	2b. incorporating proper information, material selection and appropriate tools throughout the design process. (e.g. digital micrometers, digital oscilloscopes)	2bb. creating technically written documentation to support a designed product.
2c. exploring how things work.	2c. following step by step procedures and identifying sequential actions.	2c. using information to discover, diagnose and troubleshoot problems that arise in the course of the design process.	2c. using tools to diagnose, adjust, and repair problems that arise in the course of the design process.	2c. documenting, communicating, and evaluating processes and procedures used to build, operate, and maintain systems.	
2d. exploring the properties of a product (e.g. size, type of material, shape).	2d. identifying the effects of technology and comparing and contrasting tradeoffs (e.g. advantage of using scissors vs. paper cutter or tearing paper).	2d. interpreting the accuracy of information for the purpose of developing possible solutions.	2d. interpreting and evaluating the accuracy of information for the purpose of developing possible solutions.	2d. integrating information to develop possible solutions and evaluate designs.	

ET2 - Effective design through engineering and technology is the outcome of a problem solving process involving the application of content knowledge, acquired skills, and creativity.					
ET2.3 (K-4) *Explore the processes of research and development, invention and innovation, experimentation, and troubleshooting in planning practical solutions to problems.*		**ET2.3 (5-8)** *Utilize processes (i.e. research and development, invention and innovation, experimentation, and troubleshooting) in designs that use criteria and constraints leading to useful products and systems.*		**ET2.3 (9-12)** *Refine the processes of research and development, invention and innovation, experimentation, and troubleshooting for the purpose of achieving an optimal design solution.*	
Grade Span Expectations (K-4)		**Grade Span Expectations (5-8)**		**Grade Span Expectations (9-12)**	
ET2.3 (K-2) **Students demonstrate an understanding of effective design by:**	**ET2.3 (3-4)** **Students demonstrate an understanding of effective design by:**	**ET2.3 (5-6)** **Students demonstrate an understanding of effective designs of products and systems by:**	**ET2.3 (7-8)** **Students demonstrate an understanding of effective designs of products and systems by:**	**ET2.3 (9-12)** **Students demonstrate an understanding of what is an optimal design solution by:**	**Example Extensions** **Students demonstrate an understanding of what is an optimal design solution by:**
3a. recognizing there are steps to solving a problem.	3a. exploring a process to solve a real world problem**.**	3a. given a process, with criteria and constraints, solve a real world problem.	3a. independently develop and utilize a process to solve a real world problem.	3a. independently develop and utilize a process to solve a real world problem and justifying the selection.	3aa. revising a process to solve a real world problem given unexpected constraints. (e.g. time, funding, personnel)
3b. experimenting / exploring with various simple machines (e.g. wheels, axles, gears, pulleys) to demonstrate their uses and discuss their differences.	3b. using age-appropriate construction materials based on specific properties (e.g. strength, hardness, flexibility) and tools (e.g. pliers, tape measure, hammer, nails) to build a model to solve a specific problem.	3b. utilizing materials provided to construct a working model for a given task (e.g. construct a contraption that utilizes all the simple machines – chain reaction machine).	3b. presenting documentation, revisions, and final working model to their peers using a variety of technological tools.	3b. selecting appropriate materials to construct a working prototype and/or simulation.	3bb.developing an alternative solution to a design problem.
3c. asking questions and making observations of design solutions (e.g. comparing toothbrush designs).	3c. testing, troubleshooting, and evaluating a basic design solution.	3c. testing, troubleshooting, and evaluating a design solution.		3c. evaluating and refining a complex design solution for a working prototype.	3cc. researching the patent application process.
3d. comparing and contrasting various design solutions (e.g. bus vs. race car).	3d. documenting the advantages and disadvantages of multiple designs (e.g. various designs of can openers).	3d. presenting final working model for peer review and revision.		3d. presenting comparative simulations/ prototypes and defending the selected solution.	3dd. presenting solutions to a community problem in a public forum (e.g. senior exhibitions).

ET3 - The designed world community selects and uses appropriate technologies.					
ET3.1 (K-4) *Recognize that there are various areas* in engineering and technology.*		**ET3.1 (5-8)** *Explore the various areas* in engineering and technology and their interconnections.*		**ET3.1 (9-12)** *Experience and implement the various areas* in engineering and technology.*	
Grade Span Expectations (K-4)		**Grade Span Expectations (5-8)**		**Grade Span Expectations (9-12)**	
ET3.1 (K-2) **Students demonstrate an understanding of the areas of engineering and technology by:**	**ET3.1 (3-4)** **Students demonstrate an understanding of the areas of engineering and technology by:**	**ET3.1 (5-6)** **Students demonstrate an understanding of the areas of engineering and technology by:**	**ET3.1 (7-8)** **Students demonstrate an understanding of the areas of engineering and technology by:**	**ET3.1 (9-12)** **Students demonstrate an understanding of the areas of engineering and technology by**	***Example Extensions*** **Students demonstrate an understanding of the areas of engineering and technology of by:**
1a. identifying community workers in the areas of engineering and technology. (e.g. bus driver in the area of transportation)	1a. identifying responsibilities of community workers in the areas of engineering and technology.	1a. differentiating among the various engineering and technological careers (e.g. medical technologist vs. biotechnologist).	1a. researching and defining the requirements of a particular engineering / technological discipline.	1a. preparing a career portfolio of a particular area of engineering or technology.	1aa. participating in an internship or job shadowing opportunity in a particular engineering / technological discipline.
1b. making connections between the different areas of engineering and technology (e.g. recognize that transportation technologies are involved in construction).	1b. specifying and explaining the connections within the areas of engineering and technology.	1b. researching the connections within the areas of engineering and technology as they apply to a given product.	1b. evaluating the connections within the areas of engineering and technology as they apply to an assigned product.	1b. evaluating the connections within the areas of engineering and technology as they apply to a student designed product.	

. The Areas of Engineering and Technology as identified by the International Technology Engineering and Education Association are: **Medical, Agricultural and Biotechnologies, Energy and Power, Information and Communication, Transportation, Manufacturing, and Construction. See the Introduction of this document for a description of each of the Areas of Engineering and Technology*

ET3 - The designed world community selects and uses appropriate technologies*.					
ET3.2 (K-4) *Select and utilize appropriate tools to measure, design, and implement specific technologies.*		**ET3.2 (5-8)** *Compare and contrast tools to measure, design, and implement specific technologies.*		**ET3.2 (9-12)** *Evaluate the effectiveness of tools to measure, design, and implement specific technologies.*	
Grade Span Expectations (K-4)		**Grade Span Expectations (5-8)**		**Grade Span Expectations (9-12)**	
ET3.2 (K-2) **Students demonstrate an understanding of selecting appropriate tools by:** 2a. recognizing that there are specialized tools for different areas of engineering and technology.	**ET3.2 (3-4)** **Students demonstrate an understanding of selecting appropriate tools by:** 2a. identifying characteristics of appropriate tools within different technologies. 2b. experimenting and selecting the optimal tool for a given task in a specific area of technology.	**ET3.2 (5-6)** **Students demonstrate an understanding of selecting appropriate tools by:** 2a. comparing and contrasting tools used for the same purpose across different technologies (e.g. linear measurement tools in construction vs. digital measurement tools in biotechnology). 2b. researching and selecting the optimal tool for a given task in a specific area of technology.	**ET3.2 (7-8)** **Students demonstrate an understanding of selecting appropriate tools by:** 2a. researching and explaining the evolution of key tool(s) used in specific technologies (e.g. the evolution of the microscope in the medical area). 2b. researching and selecting the optimal tool for a student-selected task in a specific area of technology.	**ET3.2 (9-12)** **Students demonstrate an understanding of selecting appropriate tools by:** 2a. evaluating the effectiveness of various tool(s) used in specific technologies. 2b. developing or improving a tool for a specific technology (e.g. software, jig, fixture).	***Example Extensions*** **Students demonstrate an understanding of selecting appropriate tools by:** 2aa. Design, manufacture and test a prototype.

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Glossary:

Biotechnology - Any technique that uses living organisms, or parts of organisms, to make or modify products, improve plants or animals, or to develop microorganisms for specific uses.

Design - An iterative decision-making process that produces plans by which resources are converted into products or systems that meet human needs and/or wants, or that solve problems.

Design Process – a systematic problem-solving strategy, with criteria and constraints, used to develop many possible solutions to solve a problem or satisfy human needs and wants and to narrow down possible solutions to one final choice.

Engineer - A person who is trained in and uses technological, mathematical, and scientific knowledge to solve practical problems.

Engineering - A profession involving the knowledge of mathematical and natural sciences (biological and physical) gained by study, experience, and practice, applied with judgment and creativity to develop ways to utilize the materials and forces of nature for the benefit of human-kind; work performed by an engineer.

Human-made – not naturally produced.

Machine - A device with fixed and moving parts that modifies mechanical energy in order to do work.

Manufacturing - The process of making a raw material into a finished product, especially in large quantities.

Material - The tangible substance (chemical, biological, or mixed) that goes into the makeup of a physical object. One of the basic resources used in a technological system.
Natural Material - Material found in nature, such as wood, stone, gases, and clay.

Process - 1. Human activities used to create, invent, design, transform, produce, control, maintain, and use products or systems; 2. A systematic sequence of actions that combines resources to produce an output.

Property - A characteristic, attribute, or trait of an object.

Resource - In a technological system, the basic technological resources are energy, capital, information, machines and tools, materials, people, and time.

Simple machines - The simple machines are the lever, pulley, and inclined plane, along with their most basic modifications, the wheel and axle, wedge, and screw. A complex machine is a machine made up of two or more simple machines.

System – a group of interacting, interrelated, or interdependent elements or parts that function together as a whole to accomplish a goal.

Technology - 1. Human innovation in action that involves generating knowledge and processes to develop systems that solve problems and extend human capabilities; 2. The innovation, change, or modification of the natural environment to satisfy perceived human needs and/or wants.

Trade-off – An exchange of one thing in return for another, especially relinquishment of one benefit or advantage for another regarded as more desirable.

Acknowledgments

The *Rhode Island K-12 Grade Span Expectations in Engineering and Technology* is the result of the contributions of many educators across our state. This document was generated through the contributions of the development team, educators who participated in the field review process, and members of the higher education and business community. The Department of Education wishes to thank all who contributed to the development of this important document.

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