**2020 STEL Benchmarks at 3-5 Grade Level 5/7/2020**

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| Grade Band | **STEL Benchmark** |
|  | **STEL 1 Nature and Characteristics of Technology and Engineering** |
| 3-5 | **1E** Compare how things found in nature differ from things that are human-made, noting differences and similarities in how they are produced and used. |
| 3-5 | **1 F**. Describe the unique relationship between science and technology, and how the natural world can contribute to the human-made world to foster innovation. |
| 3-5 | **1 G.** Differentiate between the role of scientists, engineers, technologists and others in creating and maintaining technological systems. |
| 3-5 | **1 H**. Design solutions by safely using tools, materials, and skills. |
| 3-5 | **1 I.** Explain how solutions to problems are shaped by economic, political and cultural forces. |
|  | **STEL 2 Core Concepts of Technology and Engineering** |
| 3-5 | **2F.** Describe how a subsystem is a system that operates as a part of another, larger system. |
| 3-5 | **2G**. Illustrate how, when parts of a system are missing, it may not work as planned. |
| 3-5 | **2H**. Identify the resources needed to get a technical job done, such as people, materials, capital, tools, machines, knowledge, energy, and time. |
| 3-5 | **2I.** Describe the properties of different materials. |
| 3-5 | **2J.** Demonstrate how tools and machines extend human capabilities, such as holding, lifting, carrying, fastening, separating, and computing. |
| 3-5 | **2K.** Describe requirements of designing or making a product or system. |
| 3-5 | **2L.** Create a new product that improves someone's life. |
|  | **STEL 3 Integration of Knowledge, Technologies, and Practices** |
| 3-5 | **3C**. Demonstrate how simple technologies are often combined to form more complex systems. |
| 3-5 | **3D.** Explain how various relationships can exist between technology and engineering and other content areas. |
|  | **STEL 4 Impacts of Technology** |
| 3-5 | **4F.** Describe the helpful and harmful effects of technology. |
| 3-5 | **4G**. Judge technologies to determine the best one to use to complete a given task or meet a need. |
| 3-5 | **4H.** Classify resources used to create technologies as either renewable or non-renewable. |
| 3-5 | **4I.** Explain why responsible use of technology requires sustainable management of resources. |
| 3-5 | **4J.** Predict how certain aspects of their daily lives would be different without given technologies. |
|  | **STEL 5 Influence of Society on Technological Development** |
| 3-5 | **5D**. Determine factors that influence changes in a society’s technological systems or infrastructure. |
| 3-5 | **5E**. Explain how technologies are developed or adapted when individual or societal needs and wants change. |
|  | **STEL 6 History of Technology** |
| 3-5 | **6B.** Create representations of the tools people made, how they cultivated to provide food, made clothing, and built shelters to protect themselves. |
|  | **STEL 7 Design in Technology and Engineering Education** |
| 3-5 | **7H.** Illustrate that there are multiple approaches to design. |
| 3-5 | **7I.** Apply the technology and engineering design process. |
| 3-5 | **7J.** Evaluate designs based on criteria, constraints and standards. |
| 3-5 | **7K.** Interpret how good design improves the human condition. |
| 3-5 | **7L.** Apply universal principles and elements of design. |
| 3-5 | **7M.** Evaluate the strengths and weaknesses of existing design solutions, including their own solutions. |
| 3-5 | **7N.** Practice successful design skills. |
| 3-5 | **7O.** Apply tools, techniques, and materials in a safe manner as part of the design process. |
|  | **STEL 8 Applying, Maintaining, and Assessing Technological Products and Systems** |
| 3-5 | **8D**. Follow directions to complete a technological task. |
| 3-5 | **8E.** Use appropriate symbols, numbers, and words to communicate key ideas about technological products and systems. |
| 3-5 | **8F**. Identify why a product or system is not working properly. |
| 3-5 | **8G.** Examine information to assess the trade-offs of using a product or system. |