

TE.TE. Tech Expo (Pending)
Frederick County Public Schools

Essential Discipline Goals

- Develop an understanding of the nature of technology.
- Develop abilities to assess the impacts of technology.
- Demonstrate knowledge of and apply the engineering design and development process.
- Demonstrate knowledge of and skills related to the core technologies.
- Demonstrate knowledge of the major enterprises that produce goods and services of the designed world.

| Standard # | Standard Indicators |
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| TE.TE..01 | Develop an understanding of the nature, characteristics and scope of technology.* (ITEA, STL 1) |
| TE.TE.01.01 | Understand, acquire, and use new vocabulary related to technology. (VSC Reading Processes/Vocabulary) |
| TE.TE.01.02 | Explain that new products and systems can be developed to solve problems or to help do things that could not be done without the help of technology. |
| TE.TE.02 | Develop an understanding of the core concepts of technology. * (ITEA, STL 2) |
| TE.TE.02.01 | Explain that technological systems include input, processes, output and at times feedback. |
| TE.TE.02.02 | Explain that systems have parts or components that work together to accomplish a goal. |
| TE.TE.02.03 | Identify and describe technological systems including their input, processes, output, and at times, feedback. |
| TE.TE.02.04 | Recognize and explain that systems thinking involves considering how every part relates to others. |
| TE.TE.03 | Develop an understanding of the relationships among technologies and the connections between technology and other fields of study.* (ITEA, STL 3) |
| TE.TE.03.01 | Explain that knowledge gained from other fields of study has a direct effect on the development of technological products and systems. |
| TE.TE.03.02 | Recognize and explain that technology systems are often combines to create more complex systems. |
| TE.TE.03..03 | Describe how technology systems often interact with one another |
| TE.TE.04 | Develop abilities to assess the impacts of products and systems.* (ITEA, STL 13) |
| TE.TE.04.01 | Design and use instruments to gather data. |
| TE.TE.04.02 | Interpret and evaluate the accuracy of the information obtained to determine if it is useful. |
| TE.TE.05 | Develop an understanding of the cultural, social, economic, and political effects of technology.* (ITEA, STL 4) |
| TE.TE.05.01 | Explain that the use of technology affects humans in various ways, including their safety, comfort, choices, and attitudes about technology's development and use. |
| TE.TE.05.02 | Recognize and explain that when using technology results can be good or bad. |
| TE.TE.05.03 | Evaluate the historical impact of various technological and scientific contributions. |
| TE.TE.06 | Develop an understanding of the effects of technology on the environment.* (ITEA, STL 5) |
| TE.TE.06.01 | Recognize and explain that technological changes and advances have consequences for the immediate environment as well as for other places and future times. |
| TE.TE.07 | Develop an understanding of the role of society in the development and use of technology.* (ITEA, STL 6) |
| TE.TE.07.01 | Explain that throughout history, new technologies have resulted from the demands, values, and interests if individuals, businesses and societies. |
| TE.TE.08 | Develop an understanding of the attributes of design.* (ITEA, STL 8) |
| TE.TE.08.01 | Explain that design is a creative planning process. |
| TE.TE.08.02 | Explain that there is no perfect design. |

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| TE.TE.08.03 | Explain that requirements for a design are made up of criteria and constraints. |
| TE.TE.09 | Develop an understanding of engineering design.* (ITEA, STL 9) |
| TE.TE.09.01 | Explain that design involves a series of steps that can be performed in different sequences and repeated as needed. |
| TE.TE.09.02 | Explain that brainstorming is a group problem solving design process in which each person in the group presents their ideas in an open form. |
| TE.TE.10 | Develop abilities to apply and analyze the design process.* (ITEA, STL 11) |
| TE.TE.10.01 | Identify the problem |
| TE.TE.10.02 | Research and Brainstorm |
| TE.TE.10.03 | Choose the solution and justify |
| TE.TE.10.04 | Construct a model or prototype |
| TE.TE.10.05 | Test and Record Data |
| TE.TE.10.06 | Evaluate, Reflect and Communicate |
| TE.TE.11 | Select and use tools and equipment correctly and safely.* |
| TE.TE.11.01 | Select and use the appropriate tools and equipment in: making two-dimensional and three-dimensional representations of design solutions; forming and molding processes; machining and assembly processes. |
| TE.TE.11.02 | Select and use appropriate tools based on the properties of materials. |
| TE.TE.11.03 | Select and use tools and instruments in the testing and evaluation of design solutions. |
| TE.TE.12 | Develop an understanding of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.* (ITEA, STL 10) |
| TE.TE.12.01 | Explain that troubleshooting is a problem solving method used to identify the cause of a malfunction in a technological system. |
| TE.TE.13 | Develop abilities to use and maintain technological products and systems.* (ITEA, STL 12) |
| TE.TE.13.01 | Use information to determine how things work. |
| TE.TE.14 | Develop an understanding of medical technologies.* (ITEA, STL 14) |
| TE.TE.14.01 | Explain that advances and innovations in medical technology are used to improve health. |
| TE.TE.15 | Develop an understanding of energy and power technologies.* (ITEA, STL 16) |
| TE.TE.15.01 | Explain that energy is the capacity to do work. |
| TE.TE.15.02 | Explain that power is the rate at which work is converted from one form to another or transferred from one place to another, at the rate at which work is done. |
| TE.TE.16 | Develop an understanding of information and communication technologies. * (ITEA, STL 17) |
| TE.TE.16.01 | Identify and describe the parts of a communication system. |
| TE.TE.17 | Develop an understanding of transportation technologies.* (ITEA, STL 18) |
| TE.TE.17.01 | Analyze transportation systems, such as: land; water; air; space |
| TE.TE.18 | Develop an understanding of manufacturing technologies.* (ITEA, STL 19) |
| TE.TE.18.01 | Explain that the manufacturing process includes designing; development; making, and servicing of products and systems. |
| TE.TE.19 | Develop an understanding of construction technologies.* (ITEA, STL 20) |
| TE.TE.19.01 | Explain that buildings generally contain a variety of subsystems. |

Key

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Standard from the Maryland Voluntary State Curriculum