Rhode Island Engineering and Technology

Grades 7, 8

Adopted 2011

Engineering and technology impacts the world and humankind. ET1

1 (5-8). Compare, contrast, and provide evidence of how technology influences history and impacts society. ET1.1 (5-8)

1 (5-6). Students demonstrate an understanding of the impact of technology by: ET1.1 (5-6)

- 1a. researching and displaying how technological advancements have inspired historical events (e.g. Cold War/Sputnik, slavery/cotton gin)
- 1b. listing and describing the importance of technology in daily life and its trade-offs
- 1c. evaluating the many and varying uses of technology within different geographic regions (e.g. geothermal, tidal, and wind power

1 (7-8). Students demonstrate an understanding of the impact of technology by: ET1.1 (7-8)

- 1a. describing how technological advances affect society (e.g. horse drawn carriages to automobiles)
- 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
- 1c. analyzing the use of technology within various cultures (e.g. Amish, Japanese

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2 (5-8). Describe and demonstrate the effects of technological systems on humankind in terms of a national scale. ET1.2 (5-8)

2 (7-8). Students demonstrate an understanding of the outcomes of technology by: ET1.2 (7-8)

- 2a. designing a technological product and explaining how it may impact society. (e.g. television, cell phones, jumbo jets, water purification systems)
- 2b. associating and illustrating the effects of particular technological systems over a period of time (e.g. waste disposal systems, potable water systems)

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 (5-8). Utilize the attributes of a design process to solve a real world problem. ET2.1 (5-8)

1 (7-8). Students demonstrate an understanding of the attributes of a design process by: ET2.1 (7-8)

- 1a. defining a problem that addresses a scenario by identifying its criteria and constraints.
- 1b. selecting and justifying an appropriate design solution for a given scenario or task.
- 1c. explaining what makes an effective design team and working together to achieve a desired result.

2 (5-8). Use and maintain technological products and systems, as well as their tools. ET2.2 (5-8)

2 (7-8). Students demonstrate an understanding of technological products and systems by: ET2.2 (7-8)

- 2a. safely using the required tools and organizing and explaining information resources for a specific task.
- 2b. incorporating information, proper materials and tool selection throughout the design process.
- 2c. using tools to diagnose, adjust, and repair problems that arise in the course of the design process.
- 2d. interpreting and evaluating the accuracy of information for the purpose of developing possible solutions.

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 (5-8)

3 (7-8). Students demonstrate an understanding of effective designs of products and systems by: ET2.3 (7-8)

- 3a. independently develop and utilize a process to solve a real world problem.
- 3b. presenting documentation, revisions, and final working model to their peers using a variety of technological tools.

The designed world community selects and uses appropriate technologies. ET3

1 (5-8). Explore the various areas in engineering and technology and their interconnections. ET3.1 (5-8)

1 (7-8). Students demonstrate an understanding of the areas of engineering and technology by: ET3.1 (7-8)

- 1a. researching and defining the requirements of a particular engineering / technological discipline.
- 1b. evaluating the connections within the areas of engineering and technology as they apply to an assigned product.

2 (5-8). Compare and contrast tools to measure, design, and implement specific technologies. ET3.2 (5-8)

2 (7-8). Students demonstrate an understanding of selecting appropriate tools by: ET3.2 (7-8)

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.