

Grades K, 1, 2

Adopted 2011

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 (K-4)

1 (K-2). Students demonstrate an understanding of the nature of technology by: ET1.1 (K-2)

- 1a.** investigating life without current technology (e.g. role-play use of the bucket brigade instead of a fire truck)
- 1b.** describing how technology affects daily human routines (e.g. How does milk get from the cow to the home refrigerator?)
- 1c.** differentiating between needs/wants, helpful/harmful, disposable/reusable, and natural/human-made products.

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 (K-4)

2 (K-2). Students demonstrate an understanding of the need for technology by: ET1.2 (K-2)

- 2a.** understanding that technology can make life easier (e.g. clothes, telephone, automobile, microwave).
- 2b.** discussing the purpose of technology and its relationship to the natural and designed world

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 (K-4)

1 (K-2). Students demonstrate an understanding of the attributes of a design process by: ET2.1 (K-2)

- 1a.** asking questions, making observations, and brainstorming various ideas.
- 1b.** exploring solutions to a problem based upon observations and brainstorming ideas.
- 1c.** completing tasks cooperatively in a group setting.

2 (K-4). Explore and recognize basic technological products and systems, as well as their tools. ET2.2 (K-4)

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

- 2a.** identifying and safely using the required tools (e.g. glue, scissors, tape) for a specific task.
- 2b.** collecting and using information about everyday products and symbols. (e.g. shape and color of a stop sign)
- 2c.** exploring how things work.
- 2d.** exploring the properties of a product (e.g. size, type of material, shape).

3 (K-4). Explore the processes of research and development, invention and innovation, experimentation, and troubleshooting in planning practical solutions to problems. ET2.3 (K-4)

3 (K-2). Students demonstrate an understanding of effective design by: **ET2.3 (K-2)**

- 3a.** recognizing there are steps to solving a problem.
- 3b.** experimenting/exploring with various simple machines (e.g. wheels, axles, gears, pulleys) to demonstrate their uses and discuss their differences.
- 3c.** asking questions and making observations of design solutions (e.g. comparing toothbrush designs).
- 3d.** comparing and contrasting various design solutions (e.g. bus vs. race car).

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 (K-4)

1 (K-2). Students demonstrate an understanding of the areas of engineering and technology by: **ET3.1 (K-2)**

- 1a.** identifying community workers in the areas of engineering and technology. (e.g. bus driver in the area of transportation)
- 1b.** making connections between the different areas of engineering and technology (e.g. recognize that transportation technologies are involved in construction).

2 (K-4). Select and utilize appropriate tools to measure, design, and implement specific technologies. ET3.2 (K-4)

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

- 2a.** recognizing that there are specialized tools for different areas of engineering and technology.