

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.