

Invention and Innovation

Grade 7 (2019)

Demonstrate employability skills required by business and industry. **MS-ENGR-II-1**

- A** Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities **MS-ENGR-II-1.1**

- B** Demonstrate creativity by asking challenging questions and applying innovative procedures and methods. **MS-ENGR-II-1.2**

- C** Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations. **MS-ENGR-II-1.3**

- D** Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity. **MS-ENGR-II-1.4**

- E** Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills. **MS-ENGR-II-1.5**

- F** Present a professional image through appearance, behavior and language. **MS-ENGR-II-1.6**

Demonstrate proper safety techniques and tool usage in the Engineering and Technology Laboratory. **MS-ENGR-II-2**

- A** Accurately interpret and adhere to safety signs, symbols, and labels. **MS-ENGR-II-2.1**

- B** Demonstrate and incorporate safe laboratory procedures in lab, shop, and field environments. **MS-ENGR-II-2.2**

- C** Identify, select, and use appropriate Personal Protective Equipment (PPE), follow work area organization procedures and follow Standard Operating Procedures (SOP) when performing work. **MS-ENGR-II-2.3**

- D** Identify, select, and use appropriate tools and machines for specific tasks. **MS-ENGR-II-2.4**

- E** Demonstrate safe use of tools and machines. **MS-ENGR-II-2.5**

Investigate inventions and innovations and

- A** Students will differentiate between invention and innovation **MS-ENGR-II-3.1**

their impact in society. MS-ENGR-II-3

- B Examine the role that Engineering & Technology and society play in the invention and innovation process** MS-ENGR-II-3.2
- C Identify an important past and current invention or innovation and its impact on society** MS-ENGR-II-3.3
- D Research an artifact related to Engineering and Technology that is at least 25 years old and how it has changed over time** MS-ENGR-II-3.4
- E Examine the patent process and the protection of intellectual property** MS-ENGR-II-3.5

Demonstrate an understanding of the Engineering Design Process through various problem-solving activities. MS-ENGR-II-4

- A Describe the steps of the Engineering Design Process** MS-ENGR-II-4.1
- B Construct a simple technological system** MS-ENGR-II-4.2
- C Explain how your technological system operates** MS-ENGR-II-4.3
- D Reverse engineer a consumer product** MS-ENGR-II-4.4
- E Utilize an Engineering Design Notebook as a record of process** MS-ENGR-II-4.5

Invent and/or innovate a technological product or system that addresses a societal need using the Engineering Design Process. MS-ENGR-II-5

- A Research a societal problem** MS-ENGR-II-5.1
- B Show evidence of the steps of the Engineering Design Process in an Engineering Design Notebook.** MS-ENGR-II-5.2
- C Construct a prototype or model of the solution to the societal problem** MS-ENGR-II-5.3
- D Use mathematical and scientific reasoning as evidence to support an engineering solution** MS-ENG.4R-II-5

Explore how related career and technology student organizations are integral parts of career and technology education courses. Students will develop leadership, interpersonal, and problem-solving skills through participation in co-curricular activities associated with the Technology Student Association. MS-ENGR-

- A Explain the goals, mission and objectives of CTSO organizations.** MS-ENGR-II-6.1
- B Explain how participation in career and technology education student organizations can promote lifelong responsibility for community service and professional development** MS-ENGR-II-6.2
- C Demonstrate teamwork, leadership, interpersonal relations, and project management skills.** MS-ENGR-II-6.3

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