

Introduction to Technology & Engineering (8481)

Introducing Technology

- A** Define technology. [I.A](#)
- B** Identify historical examples of technology. [I.B](#)
- C** Identify how technologies have emerged through the use of engineering. [I.C](#)
- D** Research careers and the technologies used in them. [I.D](#)

Investigating the Effects of Technology

- A** Describe how society affects technology and technology affects society. [II.A](#)
- B** Analyze how an invention or innovation was influenced by its historical context and future need.(Optional) [II.B](#)
- C** Identify emerging technologies.(Optional) [II.C](#)
- D** Predict future technological changes. [II.D](#)

Examining Resources of Technology

- A** Identify resources used in technology and engineering. [III.A](#)
- B** Identify the six simple machines that make mechanical technology work. (Optional) [III.B](#)
- C** Differentiate between types of materials.(Optional) [III.C](#)
- D** Select materials based on their properties when designing a technology. (Optional) [III.D](#)
- E** Demonstrate the safe use of a minimum of three tools and/or pieces of equipment as part of the design process. [III.E](#)
- F** Explain the ethical and moral use of technologies. [III.F](#)
- G** Demonstrate types of measuring. [III.G](#)
- H** Create sketches and drawings. [III.H](#)

Designing Solutions

- A** Describe the Virginia Department of Education (VDOE) engineering design process. [IV.A](#)

	B Demonstrate the use of an engineering design process. IV.B
Using the Engineering Design Process	A Define the goal of a challenge. V.A
	B Design a device using criteria and constraints. V.B
	C Evaluate viable solutions. V.C
	D Select a solution. V.D
	E Plan the model or prototype. V.E
	F Produce a model or prototype. V.F
	G Assess the design. V.G
	H Describe how the solution could be improved. V.H
	I Communicate the results. V.I
	J Use the engineering design process as part of a team. V.J
Examining Systems (Optional)	A Illustrate how processes change inputs to outputs in any system. VI.A
	B Identify the parts of a system within a device. VI.B
Identifying the Contexts of Technology and Engineering	A Identify contexts of technology and engineering. VII.A
	B Describe the energy and power context of technology and engineering. (Optional) VII.B
	C Describe the medical and health-related technologies contexts of technology and engineering. (Optional) VII.C
	D Describe the agricultural and biological technologies contexts of technology and engineering. (Optional) VII.D
	E Describe the information and communication contexts of technology and engineering. (Optional) VII.E
	F Describe the built environment contexts of technology and engineering. (Optional) VII.F
	G Describe the transportation and logistics contexts of technology and engineering. (Optional) VII.G
	H Describe the material conversion and processing contexts of technology and engineering. (Optional) VII.H

I Describe the computation, automation, AI, and robotics contexts of technology and engineering. (Optional VII.I