

**Science
Unit 6: Inventions**

<p align="center">Essential Understandings</p>	<ul style="list-style-type: none"> ▪ Some inventions are unique, while others improve upon existing designs. ▪ Technological design is a process involving multiple steps. ▪ Designing an invention requires technological design. ▪ Technological design and scientific inquiry may have different goals.
<p align="center">Essential Questions</p>	<ul style="list-style-type: none"> ▪ How are ideas for inventions developed? ▪ What processes are used in designing and building an invention?
<p align="center">Essential Knowledge</p>	<ul style="list-style-type: none"> ▪ Inventions start with research. ▪ Technological design is not necessarily a linear process.
<p align="center">Vocabulary</p>	<ul style="list-style-type: none"> ▪ <u>Terms:</u> <ul style="list-style-type: none"> ○ invention, technological design, materials, measurement, process, expected outcome
<p align="center">Essential Skills</p>	<ul style="list-style-type: none"> ▪ Follow the technological design process to research, design, build, test, modify, and evaluate an invention.
<p align="center">Related Maine Learning Results</p>	<p><u>Science</u></p> <p>B. The Skills and Traits of Scientific Inquiry and Technological Design B2.Skills and Traits of Technological Design Students use a systematic process, tools, equipment, and a variety of materials to design and produce a solution or product to meet a specified need, using established criteria.</p> <ol style="list-style-type: none"> a. Identify appropriate problems for technological design. b. Design a solution or product. c. Communicate a proposed design using drawings and simple models. d. Implement a proposed design. e. Evaluate a completed design or product. f. Suggest improvements for their own and others' designs and try out proposed modifications. g. Explain the design process including the solution design, implementation, and evaluation. <p>C. The Scientific and Technological Enterprise C2.Understandings About Science and Technology Students understand and compare the similarities and differences between scientific inquiry and technological design.</p> <ol style="list-style-type: none"> a. Compare the process of scientific inquiry to the process of technological design. b. Explain how constraints and consequences impact scientific inquiry and technological design.

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<p style="text-align: center;">Sample Lessons And Activities</p>	<ul style="list-style-type: none"> ▪ Review of simple machines. ▪ Exploration of possible design materials for inventions, based on cost and availability. ▪ Peer review of design.
<p style="text-align: center;">Sample Classroom Assessment Methods</p>	<ul style="list-style-type: none"> ▪ Presentation of invention and process. ▪ Design log of the invention process.
<p style="text-align: center;">Sample Resources</p>	<ul style="list-style-type: none"> ▪ <u>Publications:</u> <ul style="list-style-type: none"> ○ DaVinci poster ○ Skymall magazine ○ Great Inventors and their Inventions ○ http://inventors.about.com/ ○ www.uspto.gov/wev/offices/pac/doc/general/index.html ○ www.mikids.com/Smachines.htm ○ MSSV volunteers ▪ <u>Videos:</u> <ul style="list-style-type: none"> ○ YouTube videos of inventions