

# Standards ITEA Standards for Technological Literacy 6-8

● Indicates standard is focused on    ○ Indicates standard is covered in a general way

Standard 1: <i>Scope of Technology</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to comprehend the scope of technology, students in Grades 6-8 should learn that:</b>								
F	New products and systems can be developed to solve problems or to help do things that could not be done without the help of technology.	●	○	○	○	○	●	●
G	The development of technology is a human activity and is the result of individual or collective needs and the ability to be creative.	○						○
H	Technology is closely linked to creativity, which has resulted in innovation.							○

Standard 2: <i>Core Concepts of Technology</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to recognize the core concepts of technology, students in Grades 6-8 should learn that:</b>								
M	Technological systems include input, processes, output, and at times, feedback.		○	○	○	●	●	○
N	Systems thinking involves considering how every part relates to others.			○	○	○	○	○
O	An open-loop system has no feedback path and requires human intervention, while a closed-loop system uses feedback.					○		
P	Technological systems can be connected to one another.	○	○	○	○	○	○	○
Q	Malfunctions of any part of a system may affect the function and quality of the system.		○	○	○	○	○	○
R	Requirements are the parameters placed on the development of a product or system.			○	○	○	○	●
S	Trade-off is a decision process recognizing the need for careful compromises among competing factors.			○				●
T	Different technologies involve different sets of processes.		○		○			
U	Maintenance is the process of inspecting and servicing a product or system on a regular basis in order for it to continue functioning properly, to extend its life, or to upgrade its quality.							●
V	Controls are mechanisms or particular steps that people perform using information about the system that causes systems to change.		●					

Standard 3: <i>The Relationships Among Technologies and the Connections Between Technology and Other Fields</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to appreciate the relationships among technologies and other fields of study, students should learn that:</b>								
D	Technological systems often interact with one another.		○	○	○	○	○	○
E	A product, system, or environment developed for one setting may be applied to another setting.	○	○	○	○	○	○	●
F	Knowledge gained from other fields of study has a direct effect on the development of technological products and systems.	○		●	○	●	●	●

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Standard 4: <i>The Cultural, Social, Economic, and Political Effects of Technology</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to recognize the changes in society caused by the use of technology, students should learn that:</b>								
D	The use of technology affects humans in various ways, including their safety, comfort, choices, and attitudes about technology's development and use.	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
E	Technology, by itself, is neither good nor bad, but decisions about the use of products and systems can result in desirable or undesirable consequences.						<input type="radio"/>	<input type="radio"/>
G	Economic, political, and cultural issues are influenced by the development and use of technology.							<input type="radio"/>

Standard 6: <i>The Role of Society in the Development and Use of Technology</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to realize the impact of society on technology, students should learn that:</b>								
D	Throughout history, new technologies have resulted from the demands, values, and interests of individuals, businesses, industries, and societies.							<input type="radio"/>
E	The use of inventions and innovations has led to changes in society and the creation of new needs and wants.							<input type="radio"/>
F	Social and cultural priorities and values are reflected in technological devices.							<input type="radio"/>
G	Meeting societal expectations is the driving force behind the acceptance and use of products and systems.							<input type="radio"/>

Standard 7: <i>The Influence of Technology on History</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to be aware of the history of technology, students should learn that:</b>								
C	Many inventions and innovations have evolved using slow and methodical processes of tests and refinements.							<input type="radio"/>
D	The specialization of function has been at the heart of many technological improvements.	<input type="radio"/>						<input type="radio"/>
E	The design and construction of structures for service or convenience have evolved from the development of techniques for measurement, controlling systems, and the understanding of spatial relationships.							
F	In the past, an invention or innovation was not usually developed with the knowledge of science.							

Standard 8: <i>The Attributes of Design</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to realize the attributes of design, students should learn that:</b>								
E	Design is a creative planning process that leads to useful products and systems.			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
F	There is no perfect design.			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G	Requirements for design are made up of criteria and constraints.						<input type="radio"/>	<input checked="" type="radio"/>

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Standard 9: <i>Engineering Design</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to comprehend engineering design, students should learn that:</b>								
F	Design involves a set of steps, which can be performed in different sequences and repeated as needed.				<input type="radio"/>		<input type="radio"/>	<input checked="" type="radio"/>
G	Brainstorming is a group problem-solving design process in which each person in the group presents his or her ideas in an open forum.				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H	Modeling, testing, evaluating, and modifying are used to transform ideas into practical			<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Standard 10: <i>The Role of Troubleshooting, Research and Development, Invention and Innovation, and Experimentation in Problem Solving</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to comprehend other problem-solving approaches, students should learn that:</b>								
F	Troubleshooting is a problem-solving method used to identify the cause of a malfunction in a technological system.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G	Invention is a process of turning ideas and imagination into devices and systems. Innovation is the process of modifying an existing product or system to improve it.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
H	Some technological problems are best solved through experimentation.			<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

Standard 11: <i>Apply the Design Process</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>As part of learning how to apply design processes, students should learn that:</b>								
H	Apply a design process to solve problems in and beyond the laboratory-classroom.		<input checked="" type="radio"/>					
I	Specify criteria and constraints for the design.			<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
J	Make two-dimensional and three-dimensional representations of the designed solution.						<input type="radio"/>	<input type="radio"/>
K	Test and evaluate the design in relation to pre-established requirements, such as criteria and constraints, and refine as needed.			<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
L	Make a product or system and document the solution.			<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

Standard 12: <i>The Role of Society in the Development and Use of Technology</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>As part of learning how to use and maintain technological products and systems, students should learn that:</b>								
H	Use information provided in manuals, protocols, or by experienced people to see and understand how things work.		<input type="radio"/>	<input checked="" type="radio"/>				
I	Use tools, materials, and machines safely to diagnose, adjust, and repair systems.				<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
J	Use computers and calculators in various applications.	<input type="radio"/>	<input checked="" type="radio"/>					
K	Operate and maintain systems in order to achieve a given purpose.	<input type="radio"/>	<input checked="" type="radio"/>					

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Standard 13: <i>Assess the Impact of Products and Systems</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>As part of learning how to assess the impact of products and systems, students should learn that:</b>								
F	Design and use instruments to gather data.	●	●	●	●	●	●	●
G	Use data collected to analyze and interpret trends in order to identify the positive and negative effects of a technology.	○		●	○		○	○
H	Identify trends and monitor potential consequences of technological development.							○
I	Interpret and evaluate the accuracy of the information obtained and determine if it is useful.					○	●	●

Standard 16: <i>Energy and Power Technologies</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to select, use, and understand agricultural and related biotechnologies, students should learn that:</b>								
G	Power is the rate at which energy is converted from one form to another or transferred from one place to another, or the rate at which work is done.				○			
H	Power systems are used to drive and provide propulsion to other technological products and systems.				○			

Standard 17: <i>Information and Communication Technologies</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to select, use, and understand information and communication technologies, students should learn that:</b>								
H	Information and communication systems allow information to be transferred from human to human, human to machine, and machine to human.	○	○	○	○	○	○	○
K	The use of symbols, measurements, and drawings promotes a clear communication by providing a common language to express ideas.		○	○	○	○	○	●

Standard 18: <i>Transportation Technologies</i>		Inquiry Video	Tutorial	Heat	Motion	Sound	Light	Project
<b>In order to select, use, and understand transportation technologies, students should learn that:</b>								
G	Transportation vehicles are made up of subsystems, such as structural propulsion, suspension, guidance, control, and support, that must function together for a system to work effectively.				○			