

TechCenter21: Technology Education

# ***ITEA – Technology Literacy Standards***

## **Instructional Content Areas (Modules)**

Introduction to Technology

Aerodynamic Principles

Aerospace

Alternate Energy

Biosphere

CAM/CNC Mill

Communications

Construction & CAD

Desktop Publishing

Electronics & Control

Engineering Structures

Environmental Management

Graphic Design

Hydraulics

Lasers & Fiber Optics

Manufacturing/Automation

Mechanisms

Multimedia Basics

Pneumatics

Power & Energy

Road Transportation

Robotics

Video Production

Waste Management

Weather Monitoring

CO<sub>2</sub> Race Car Design

Structure Design for Earthquake



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## Overview

This document demonstrates the correlation between the ITEA Technology Literacy standards and the TechCenter21 curriculum supplied by Applied Educational Systems. The TechCenter21 (TC21) modules are listed alphabetically across the top row. Each module includes ten activities. The ITEA Technology Education standards are listed down the second column. The X's marked in the matrix formed by the standards and TC21 modules indicate that the standard is covered as part of that module.

Note that some ITEA technology standards are covered in each and every TC21 module. This broad coverage is a reflection of the curriculum development philosophy and process at Applied Educational Systems. The TC21 curriculum includes *core themes* written into each and every module as part of the planning and development of the curriculum. Core themes are areas of educational content deemed of critical importance. Repeated exposure to core themes enables students to internalize and apply critical concepts in real world scenarios. Through repeated exposure in a variety of contexts, students achieve ever-increasing levels of sophistication in understanding and application. For example, the ITEA standards 4, "...develop an understanding of the cultural, social, economic, and political effects of technology." And standard 7, "... develop an understanding of the influence of technology on history." are closely linked with the TC21 Core Theme: "Analyze the social, economic and environmental impacts of technology from the past to the present and then forecast these impacts into the future."

Source for ITEA standards listed on the following pages:

<http://www.iteawww.org/TAA/Listing.htm>

ITEA Technology Literacy Standards	TechCenter21 Course	Introduction Unit	Aerodynamics	Aerospace	Alternate Energy	Biosphere	CAM/CNC Milling	Communications	Construction/CAD	Desktop Publishing	Electronic Control	Engineer Structures	Environmental Management	Graphic Design	Hydraulics	Lasers and Fiber Optic	Manufacturing & Automation	Mechanism	Multimedia	Pneumatics	Power and Energy	Road Transportation	Robotics	Video Production	Waste Mgt.	Weather	CO <sub>2</sub> Race Car Design	Structure Design Earthquakes
	<b>The Nature of Technology</b>																											
Students will develop an understanding of the characteristics and scope of technology.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Students will develop an understanding of the core concepts of technology.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Technology and Society</b>																												
Students will develop an understanding of the cultural, social, economic, and political effects of technology.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Students will develop an understanding of the effects of technology on the environment.	✓				X	X						X	X								X	X			X	X		
Students will develop an understanding of the role of society in the development and use of technology.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Students will develop an understanding of the influence of technology on history.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
<b>Design</b>																												
Students will develop an understanding of the attributes of design.	✓		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Students will develop an understanding of engineering design.	✓		X	X	X				X		X	X					X				X	X					X	X
Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Abilities of a Technological World</b>																												
Students will develop abilities to apply the design process.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Students will develop abilities to use and maintain technological products and systems.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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	Students will develop abilities to assess the impact of products and systems.	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>The Designed World</b>																												
Students will develop an understanding of and be able to select and use medical technologies.	✓															X									X			
Students will develop an understanding of and be able to select and use agricultural and related biotechnologies.	✓					X							X												X	X		
Students will develop an understanding of and be able to select and use energy and power technologies.	✓				X																X						X	
Students will develop an understanding of and be able to select and use information and communication technologies.	✓							X		X				X						X				X			X	X
Students will develop an understanding of and be able to select and use transportation technologies.	✓		X	X											X			X		X		X					X	
Students will develop an understanding of and be able to select and use manufacturing technologies.	✓						X				X				X	X	X	X		X			X					
Students will develop an understanding of and be able to select and use construction technologies.	✓								X			X			X													X