

### Addressing the Standards for Technological Literacy

This document correlates all components of *Technology Today and Tomorrow* to the national standards developed by the International Technology Education Association.

**SE** = Student Edition, ISBN 0-07-830829-1

**SW** = Student Workbook, ISBN 0-07-830831-3

**TRG** = Teacher Resource Guide, ISBN 0-07-830833-X

**CD** = Teacher Productivity CD-ROM, ISBN 0-07-830834-8

**Web site** = *Technology Today & Tomorrow* Web site and others as noted

Standard	Benchmark Topics Grades 9-12	Resources in <i>Technology Today and Tomorrow</i>
<b>NATURE OF TECHNOLOGY</b>		
Standard 1: The Characteristics and Scope of Technology	<ul style="list-style-type: none"> <li>• Nature of technology</li> <li>• Rate of technological diffusion</li> <li>• Goal-directed research</li> <li>• Commercialization of technology</li> <li>•</li> </ul>	<b>SE:</b> Chapters 1, 4, 5, 6, 7, 9, 19, 21 <b>SW:</b> Worksheets for Chs. 1, 4, 5, 6, 7, 9, 19, 21 Making Connections Activities on pages 77, 115 Technology Activity on page 181 <b>TRG:</b> Transparency Masters 1-1, 1-2 <b>CD:</b> PowerPoint® presentation for Unit 1
Standard 2: The Core Concepts of Technology	<ul style="list-style-type: none"> <li>• Systems</li> <li>• Resources</li> <li>• Requirements</li> <li>• Optimization &amp; trade-offs</li> <li>• Processes</li> <li>• Controls</li> </ul>	<b>SE:</b> Chapters 1, 2, 3, 4, 5, 7, 8, 9, 10, 14, 19, 23 <b>SW:</b> Worksheets for Chs. 1, 2, 3, 4, 5, 7, 8, 9, 10, 14, 19, 23 Making Connections Activities on pages 98, 115, 118, 134, 148 Technology Activities on pages 187, 195 <b>TRG:</b> Transparency Masters 1-2, 1-3, 3-1, 3-2, 4-2, 8-1, 9-2, 10-1, 14-2, 17-2 <b>CD:</b> PowerPoint® presentations for Units 1, 2, 3, 4, 5, 6

Standard	Benchmark Topics Grades 9-12	Resources in <i>Technology Today and Tomorrow</i>
Standard 3: The Relationships among Technologies and the Connections between Technology and Other Fields	<ul style="list-style-type: none"> <li>• Technology transfer</li> <li>• Innovation &amp; invention</li> <li>• Knowledge protection and patents</li> <li>• Technological knowledge and advances of science and mathematics and vice versa</li> </ul>	<p><b>SE:</b> Chapters 1, 2, 4, 6, 9, 13, 20, 22, 23</p> <p><b>SW:</b> Worksheets for Chs. 1, 2, 4, 6, 9, 13, 20, 22, 23 Making Connections Activities on pages 73-177</p> <p><b>TRG:</b> Transparency Master 1-2</p>
<b>TECHNOLOGY AND SOCIETY</b>		
Standard 4: The Cultural, Social, Economic, and Political Effects of Technology	<ul style="list-style-type: none"> <li>• Rapid or gradual changes</li> <li>• Trade-offs &amp; effects</li> <li>• Ethical implications</li> <li>• Cultural, social, economic, and political changes</li> </ul>	<p><b>SE:</b> Chapters 1, 5, 6, 8, 18 Section 4: Activity 5</p> <p><b>SW:</b> Worksheets for Chs. 1, 5, 6, 8, 18 Making Connections Activities on pages 75, 88, 133, 134, 139, 151, 152 Technology Activity on page 181</p>

Standard	Benchmark Topics Grades 9-12	Resources in <i>Technology Today and Tomorrow</i>
Standard 5: The Effects of Technology on the Environment	<ul style="list-style-type: none"> <li>● Conservation</li> <li>● Reduce resource use</li> <li>● Monitor environment</li> <li>● Alignment of natural and technological processes</li> <li>● Reduce negative consequences of technology</li> <li>● Decisions &amp; trade-offs</li> </ul>	<p><b>SE:</b> Chapters 1, 3, 4, 8, 22 Section 1: Activity 2 Section 4: Activity 1 Section 6: Activity 1</p> <p><b>SW:</b> Worksheets for Chs. 1, 3, 4, 8, 22 Making Connections Activities on pages 75, 98, 139, 151, 155, 173</p> <p><b>CD:</b> PowerPoint® presentations for Units 3, 4, 6</p> <p><b>Web site:</b> See WebQuest at <a href="http://www.glencoe.com/sec/Tech_Ed/recycle.shtml">http://www.glencoe.com/sec/Tech_Ed/recycle.shtml</a> and <a href="http://www.glencoe.com/sec/Tech_Ed/hevs.shtml">http://www.glencoe.com/sec/Tech_Ed/hevs.shtml</a> Also see Interactive Exploration on “Wastewater” at <a href="http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qj=3734">http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qj=3734</a></p>
Standard 6: The Role of Society in the Development and Use of Technology	<ul style="list-style-type: none"> <li>● Different cultures and technologies</li> <li>● Development decisions</li> <li>● Factors affecting designs &amp; demands of technologies</li> </ul>	<p><b>SE:</b> Chapters 1, 2, 3, 9, 18, 19, 20, 22</p> <p><b>SW:</b> Worksheets for Chs. 1, 2, 3, 9, 18, 19, 20, 22 Making Connections Activities on pages 75, 88 Technology Activity on page 181</p> <p><b>CD:</b> PowerPoint® presentation for Unit 1</p>

Standard	Benchmark Topics Grades 9-12	Resources in <i>Technology Today and Tomorrow</i>
Standard 7: The Influence of Technology on History	<ul style="list-style-type: none"> <li>● Evolutionary development of technology</li> <li>● Dramatic changes in society</li> <li>● History of technology</li> <li>● Early technological history</li> <li>● The Iron Age</li> <li>● The Middle Ages</li> <li>● The Renaissance</li> <li>● The Industrial Revolution</li> <li>● The Information Age</li> </ul>	<p><b>SE:</b> Chapters 1, 5, 6, 7, 14, 19, 20, 23</p> <p><b>SW:</b> Worksheets for Chs. 1, 5, 6, 7, 14, 19, 20, 23 Making Connections Activities on pages 77, 113 Technology Activity on page 181</p> <p><b>CD:</b> PowerPoint® presentation for Unit 1</p>
<b>DESIGN</b>		
Standard 8: The Attributes of Design	<ul style="list-style-type: none"> <li>● The design process</li> <li>● Design problems are usually not clear</li> <li>● Designs need to be refined</li> <li>● Requirements</li> </ul>	<p><b>SE:</b> Chapters 2, 7</p> <p><b>SW:</b> Worksheets for Chs. 2, 7 Making Connections Activities on pages 86, 87, 115, 116, 121 Technology Activities on pages 187, 199, 201, 205, 207, 217, 237</p> <p><b>TRG:</b> Transparency Master 7-1</p> <p><b>Web site:</b> See Virtual Tour of a GPS Satellite at this <i>Technology Today and Tomorrow</i> Web site</p>

Standard	Benchmark Topics Grades 9-12	Resources in <i>Technology Today and Tomorrow</i>
Standard 9: Engineering Design	<ul style="list-style-type: none"> <li>• Design principles</li> <li>• Influence of personal characteristics</li> <li>• Prototypes</li> <li>• Factors in engineering design</li> </ul>	<p><b>SE:</b> Chapters 7, 9, 13, 15 Section 3: Activity 2</p> <p><b>SW:</b> Worksheets for Chs. 7, 9, 13, 15 Making Connections Activities on pages 85, 115, 154 Technology Activities on pages 183, 187, 199, 205, 207, 217, 229, 237</p> <p><b>Web site:</b> See Interactive Exploration on “Document Design” at <a href="http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qj=3734">http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qj=3734</a></p>
Standard 10: The Role of Troubleshooting, Research and Development, Invention and Innovation, and Experimentation in Problem Solving	<ul style="list-style-type: none"> <li>• Research &amp; development</li> <li>• Researching technological problems</li> <li>• Not all problems are technological or can be solved</li> <li>• Multidisciplinary approach</li> </ul>	<p><b>SE:</b> Chapters 1, 2, 4</p> <p><b>SW:</b> Worksheets for Chs. 1, 2, 4 Making Connections Activities on pages 83, 138 Technology Activities on pages 183, 201, 207, 217, 237</p> <p><b>Web site:</b> See Virtual Tour of a GPS Satellite at this <i>Technology Today and Tomorrow</i> Web site</p>

<b>ABILITIES FOR A TECHNOLOGICAL WORLD</b>		
Standard 11: Apply the Design Process	<ul style="list-style-type: none"> <li>● Identify a design problem</li> <li>● Identify criteria and constraints</li> <li>● Refine the design</li> <li>● Evaluate the design</li> <li>● Develop a product or system using quality control</li> <li>● Reevaluate final solution(s)</li> </ul>	<p><b>SE:</b> Chapters 2, 11, 15, 16  <b>SW:</b> Worksheets for Chs. 2, 11, 15, 16            Technology Activities on pages 183, 187, 199, 205, 207, 217, 237</p>
Standard 12: Use and Maintain Technological Products and Systems	<ul style="list-style-type: none"> <li>● Document &amp; communicate processes &amp; procedures</li> <li>● Diagnose a malfunctioning system</li> <li>● Troubleshoot &amp; maintain systems</li> <li>● Operate &amp; maintain systems</li> <li>● Use computers to communicate</li> </ul>	<p><b>SE:</b> Chapters 3, 4            Section 1: Activities 1, 2, 3            Section 6: Activity 1  <b>SW:</b> Worksheets for Chs. 3, 4            Making Connections Activities on page 118            Technology Activities on pages 191, 211</p>

Standard 13: Assess the Impact of Products and Systems	<ul style="list-style-type: none"> <li>• Collect information &amp; judge its quality</li> <li>• Synthesize data to draw conclusions</li> <li>• Employ assessment techniques</li> <li>• Design forecasting techniques</li> </ul>	<b>SE:</b> Chapters 1, 2, 3 <b>SW:</b> Worksheets for Chs. 1, 2, 3 Technology Activity on page 211
<b>THE DESIGNED WORLD</b>		
Standard 14: Medical Technologies	<ul style="list-style-type: none"> <li>• Medical technologies for prevention &amp; rehabilitation</li> <li>• Telemedicine</li> <li>• Genetic therapeutics</li> <li>• Biochemistry</li> </ul>	<b>SE:</b> Chapters 1, 5, 23, 24 <b>SW:</b> Worksheets for Chs. 1, 5, 23, 24 Making Connections Activities on pages 169, 175 Technology Activity on page 237 <b>TRG:</b> Transparency Masters 23-2,-24-2 <b>CD:</b> PowerPoint® presentation for Unit 6
Standard 15: Agricultural and Related Biotechnologies	<ul style="list-style-type: none"> <li>• Agricultural products &amp; systems</li> <li>• Biotechnology</li> <li>• Conservation</li> <li>• Engineering design &amp; management of ecosystems</li> </ul>	<b>SE:</b> Chapters 1, 3, 5, 23, 24 Section 6: Activities 1, 2 <b>SW:</b> Worksheets for Chs. 1, 3, 5, 23, 24 Making Connections Activities on pages 167, 171, 173 Technology Activity on page 233 <b>TRG:</b> Transparency Masters 23-1, 24-1 <b>CD:</b> PowerPoint® presentation for Unit 6 <b>Web site:</b> See WebQuest at <a href="http://www.glencoe.com/sec/Tech_Ed/cloning.shtml">http://www.glencoe.com/sec/Tech_Ed/cloning.shtml</a>

Standard 16: Energy and Power Technologies	<ul style="list-style-type: none"> <li>● Law of conservation of energy</li> <li>● Energy sources</li> <li>● Second law of thermodynamics</li> <li>● Renewable and nonrenewable forms of energy</li> <li>● Power systems are a source, a process, and a load</li> </ul>	<p><b>SE:</b> Chapters 1, 3, 17, 20, 22</p> <p><b>SW:</b> Worksheets for Chs. 1, 3, 17, 20, 22 Making Connections Activities on pages 80, 138</p> <p><b>TRG:</b> Transparency Master 3-2</p> <p><b>Web site:</b> See Interactive Exploration on “Energy Sources” at <a href="http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734">http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734</a></p>
Standard 17: Information and Communication Technologies	<ul style="list-style-type: none"> <li>● Parts of information &amp; communication systems</li> <li>● Information &amp; communication systems</li> <li>● The purpose of information &amp; communication technology</li> <li>● Communication systems &amp; subsystems</li> <li>● Many ways of communicating</li> <li>● Communicating through symbols</li> </ul>	<p><b>SE:</b> Chapters 1, 4, 5, 6, 7 Section 2: Activities 1, 2, 3, 4 Section 3: Activity 4</p> <p><b>SW:</b> Worksheets for Chs. 1, 4, 5, 6, 7 Making Connections Activities on pages 91, 93, 95, 96, 97, 99, 101, 102, 103, 105, 108, 110, 165, 166 Technology Activities on pages 185, 187, 191</p> <p><b>TRG:</b> Transparency Masters 4-1, 4-2, 5-1, 5-2, 6-1, 6-2, 7-1, 7-2, 12-2, 13-1</p> <p><b>CD:</b> PowerPoint® presentation for Unit 2</p> <p><b>Web site:</b> See Virtual Tour of a GPS Satellite at this <i>Technology Today and Tomorrow</i> Web site Also see Interactive Exploration on “Document Design” at <a href="http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734">http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734</a></p>



<p>Standard 18: Transportation Technologies</p>	<ul style="list-style-type: none"> <li>● Relationship of transportation &amp; other technologies</li> <li>● Intermodalism</li> <li>● Transportation of services &amp; methods</li> <li>● Positive &amp; negative impacts of transportation systems</li> <li>● Transportation processes &amp; efficiency</li> </ul>	<p><b>SE:</b> Chapters 1, 12, 19, 20, 21, 22 Section 5: Activities 1, 2</p> <p><b>SW:</b> Worksheets for Chs. 1, 12, 19, 20, 21, 22 Making Connections Activities on pages 149, 150, 151, 152, 153, 154, 155, 156 Technology Activities on pages 217, 223, 229</p> <p><b>TRG:</b> Transparency Masters 19-1, 19-2, 20-1, 20-2, 21-1, 21-2 22-1, 22-2</p> <p><b>CD:</b> PowerPoint® presentation for Unit 5</p> <p><b>Web site:</b> See WebQuest at <a href="http://www.glencoe.com/sec/Tech_Ed/hevs.shtml">http://www.glencoe.com/sec/Tech_Ed/hevs.shtml</a> Also see Interactive Exploration on “Rockets” at <a href="http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734">http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734</a></p>
<p>Standard 19: Manufacturing Technologies</p>	<ul style="list-style-type: none"> <li>● Servicing &amp; obsolescence</li> <li>● Material classification</li> <li>● Durable or nondurable goods</li> <li>● Manufacturing systems</li> <li>● Interchangeability of parts</li> <li>● Chemical technologies</li> <li>● Marketing of products</li> </ul>	<p><b>SE:</b> Chapters 8, 9, 10, 11, 12, 13, 14, 24 Section 3: Activity 4</p> <p><b>SW:</b> Worksheets for Chs. 8, 9, 10, 11, 12, 13, 14, 24 Making Connections Activities on pages 85, 109, 110, 111, 113, 115, 116, 117, 118, 119, 121, 123, 125, 127 Technology Activities on pages 195, 199, 201, 233</p> <p><b>TRG:</b> Transparency Masters 8-1, 8-2, 9-1, 9-2, 10-2, 11-1, 11-2, 12-1, 12-2, 13-1, 13-2</p> <p><b>CD:</b> PowerPoint® presentation for Unit 3</p> <p><b>Web site:</b> See Interactive Exploration on “The Manufacturing Process” at <a href="http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734">http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734</a></p>

<p>Standard 20: Construction Technologies</p>	<ul style="list-style-type: none"> <li>• Infrastructure</li> <li>• Construction processes &amp; procedures</li> <li>• Requirements</li> <li>• Maintenance, alterations, &amp; renovation</li> <li>• Prefabricated materials</li> </ul>	<p><b>SE:</b> Chapters 14, 15, 16, 17, 18 Section 4: Activity 4</p> <p><b>SW:</b> Worksheets for Chs. 14, 15, 16, 17, 18 Making Connections Activities on pages 129, 131, 133, 134, 135, 137, 138, 139, 140, 141, 143, 145, 147, 148 Technology Activities on pages 207, 211, 223, 229</p> <p><b>TRG:</b> Transparency Masters 14-1, 14-2, 15-1, 15-2, 16-1, 16-2, 17-1, 17-2, 18-1, 18-2</p> <p><b>CD:</b> PowerPoint® presentation for Unit 4</p> <p><b>Web site:</b> See Interactive Exploration on “Parts of a Building” at <a href="http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734">http://www.glencoe.com/sec/Tech_Ed/intexplorations.shtml?mn=gr&amp;qi=3734</a></p>
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