

Grade 8

Project Citizen Steps Correlation to Tennessee State Standards in Social Studies, Science, English/Language Arts, and Mathematics

Grade 8: Social Studies/Governance and Civics

4.0 Governance establishes structures of power and authority in order to provide order and stability. Civic efficacy requires understanding rights and responsibilities, ethical behavior, and the role of citizens within their community, nation, and world.

Era 1: 3 Worlds Meet (Beginnings to 1620)		
Project Citizen Steps 2008 edition	Subject Area Standard TN State Performance Indicators (SPI)	National Standards for Civics & Government
<p>Step 1 Identifying Public Policy Problems in Your Community Part B Small Group Activity p. 11</p> <p>Step 3 Gathering Information and Research p. 18 – 27</p>	<p>8.1.5 identify how religion contributed to early American society (i.e., impact on government, education, social norms, slavery, tolerance)</p> <p>8.1.7 recognize how immigration and cultural diffusion have influenced the character of a place (i.e., religion within certain colonies...British vs. French influences)</p> <p>8.4.4 recognize the rights and responsibilities of individuals throughout the development of the United States</p> <p>8.5.7 recognize the major historical impacts of European settlement in North America</p> <p>8.5.11 identify conclusions about historical events using primary and secondary sources</p> <p>8.6.5 recognize how groups and institutions work together to meet common needs</p>	<p><i>NSS-C.5-8.2 Foundations Of The Political System</i> What are the Foundations of the American Political System?</p> <p>* What are the distinctive characteristics of American society?</p>

Sample Classroom Applications	Sample Resources
<p>8.1.7; 8.5.11 Divide students into 4 groups-Natives, Jamestown settlers, Plymouth settlers, and slaves. Have students examine primary documents and draw conclusions about similarities and differences between the groups.</p> <p>8.4.4; 8.5.7; 8.6.5 Use information gathered from initial data gathering analysis and create a dramatization including information on one of the first American settlements. Students must include cultural aspects of the group and how group members work together to meet common needs.</p>	<p>Print <i>Rethinking Columbus</i>, Bill Bigelow and Bob Peterson. Rethinking Schools: Milwaukee, 1998. This teacher’s guide gives a variety of perspectives to assist students in debate and discussion lessons. It also provides a great many resources to help with this subject.</p> <p>Internet <i>Etowah Indian Mounds State Historic Site</i> Etowah Indian Mounds State Park, Georgia http://ngeorgia.com/ang/Etowah_Indian_Mounds_State_Historic_Site Excellent resource for information on Native American culture</p> <p><i>Why Explorers Explored the World</i> ThinkQuest http://library.thinkquest.org/6174/ Gives significant information about basic exploration and provides additional links for more details</p>

Grade 8: Social Studies/Governance and Civics

Era 2: Colonization and Settlement (1585-1763)		
Project Citizen Steps 2008 edition	Subject Area Standard TN State Performance Indicators (SPI)	National Standards for Civics & Government
<p>Step 1 Identifying Public Policy Problems in Your Community Part A Class Discussion p.10 - 11</p> <p>Part B Small Group Activity p. 11</p> <p>Step 2 Selecting a Problem for Class Study p. 17</p> <p>Step 3 Gathering Information and Research p. 18 – 27</p> <p>Step 4 Developing a Class Portfolio p. 28 – 49</p> <p>Step 5 Presenting Your Portfolio p. 50 – 52</p> <p>Step 6 Reflecting on Your Learning Experience p. 53 - 55</p>	<p>8.1.2 identify cultures that contributed to the development of the United States (i.e., Native American, African, British, Scottish, Irish, German)</p> <p>8.2.6 interpret a variety of economic graphs and charts with topics (i.e., the Columbian Exchange, numbers of slaves, population of colonies, population diversity)</p> <p>8.4.3 recognize the purpose of government and how its powers are acquired, used, and justified</p> <p>8.5.6 classify the characteristics of major historical events into causes and effects (i.e., exploration, colonization, revolution, expansion, and Civil War)</p> <p>8.5.7 recognize the major historical impacts of European settlement in North America</p>	<p><i>NSS-C.5-8.2 Foundations Of The Political System</i> What are the Foundations of the American Political System?</p> <p>* What are the distinctive characteristics of American society? * What is American political culture?</p>

Sample Classroom Applications	Sample Resources
<p>8.4.3 Complete graphic organizer on how government acquires, uses, and justifies its power.</p> <p>8.5.6 Complete cause and effect graphic organizer on the causes and effects of major historical events divided into immediate and long-term consequences</p> <p>8.1.2 Discuss cultures that contributed to the development of the United States followed by a map activity identifying the location of origin of these new people. Then work in groups to discuss and complete a graphic organizer of who, what, where, when, how and why these groups migrated to Colonial America.</p>	<p>Print <i>A History of the United States</i>, Philip Jenkins. MacMillan, 1997. This book gives a brief history of the United States from 1492-1996 and includes maps and population data.</p> <p>Internet Cause and Effect Graphic Organizers http://educationoasis.com/curriculum/Go/cause_effect.htm Offers a variety of cause and effect graphic organizers</p> <p>Graphic Organizers ThinkPort http://www.thinkport.org/technology/template.tp Great site with a collection of pre-formatted graphic organizers offered in 3 different formats-HTML,PDF, and WORD</p>

Grade 8: Social Studies/Governance and Civics

Era 3: Revolution and the New Nation (1754-1820)		
Project Citizen Steps 2008 edition	Subject Area Standard TN State Performance Indicators (SPI)	National Standards for Civics & Government
<p>Step 1 Identifying Public Policy Problems in Your Community Part A Class Discussion p.10 - 11</p> <p>Part B Small Group Activity p. 11</p> <p>Step 2 Selecting a Problem for Class Study p. 17</p> <p>Step 3 Gathering Information and Research p. 18 – 27</p> <p>Step 4 Developing a Class Portfolio p. 28 – 49</p> <p>Step 5 Presenting Your Portfolio p. 50 – 52</p> <p>Step 6 Reflecting on Your Learning Experience p. 53 - 55</p>	<p>8.1.5 identify how religion contributed to early American society (i.e., impact on government, education, social norms, slavery, tolerance)</p> <p>8.2.10 distinguish among various economic markets found in early America (i.e., traditional, monopoly, oligopoly, free competition)</p> <p>8.4.1 identify the rights, responsibilities, and privileges of a member of the United States (i.e., Declaration of Independence, Articles of Confederation, Constitution, Bill of Rights)</p> <p>8.4.3 recognize the purpose of government and how its powers are acquired, used, and justified</p> <p>8.4.6 recognize the rights guaranteed in the Bill of Rights</p> <p>8.4.8 recognize how a right must be interpreted to balance individual rights with the need for order (i.e., freedom of speech, freedom of religion, trial by jury)</p> <p>8.5.4 recognize causes and consequences of conflict (i.e., French and Indian War, Revolutionary War, War of 1812)</p> <p>8.6.4 identify the role of institutions in furthering both continuity and change (i.e., governments, churches, families, schools, communities)</p>	<p><i>NSS-C.5-8.1 Civic Life, Politics And Government</i> What are Civic Life, Politics, and Government?</p> <ul style="list-style-type: none"> * What is civic life? What is politics? What is government? Why are government and politics necessary? What purposes should government serve? * What are the essential characteristics of limited and unlimited government? * What are the nature and purposes of constitutions? <p><i>Nss-C.5-8.2 Foundations Of The Political System</i> What are the Foundations of the American Political System?</p> <ul style="list-style-type: none"> * What is the American idea of constitutional government? * What are the distinctive characteristics of American society? * What is American political culture? * What values and principles are basic to American constitutional democracy? <p><i>Nss-C.5-8.3 Principles Of Democracy</i> How Does the Government Established by the Constitution Embody the Purposes, Values, and Principles of American Democracy?</p> <ul style="list-style-type: none"> * How are power and responsibility distributed, shared, and limited in the government established by the United States Constitution? * What does the national government do? * How are state and local governments organized and what do they do? * Who represents you in local, state, and national governments?

Sample Classroom Applications	Sample Resources
<p>8.4.1; 8.4.3; 8.4.8 Use RAFTS (Role-Audience-Format-Topic-Strong verb) to explore specific component of early American government (e.g., <i>Articles of Confederation, Declaration of Independence, Constitution</i>)</p> <p>8.4.6 Create a song to the tune of <i>The Twelve Days of Christmas</i>. Students must use the ten amendments of the Bill of Rights and two other amendments that they feel are most important to their lives.</p> <p>8.5.4 Complete a 5W 1H graphic organizer on the causes and consequences of conflict. (i.e., French and Indian War, Revolutionary War, and the War of 1812).</p> <p>8.6.4; 8.2.10; 8.1.5 Complete a cluster diagram identifying the role of institutions in furthering both continuity and change (i.e., government, family, economics, religion, and education).</p>	<p>Print <i>1776</i>, David McCullough. Simon and Schuster: New York, 2005. This book examines provides a great deal of background information on several topics of the Revolutionary Era, from the signing of the Declaration of Independence to the crossing of the Delaware by Washington and his men. It is written as a powerful drama with incredible narrative vitality.</p> <p>Internet <i>Commander in Chief George Washington Resigns</i> Library of Congress http://www.americaslibrary.gov/cgi-bin/page.cgi/jb/revolut/resign_1 Excellent resource to help students appreciate the sacrifices made and rewards earned by Washington before becoming president.</p> <p><i>Washington DC Became the Capitol July 16, 1790</i> Library of Congress http://www.americaslibrary.gov/cgi-bin/page.cgi/jb/nation/capital_1 Helps students understand the issues and reasons why the nation selected the District of Columbia to be its capitol.</p> <p>Graphic Organizers ThinkPort http://www.thinkport.org/technology/template.tp Great site with a collection of pre-formatted graphic organizers offered in 3 different formats-HTML,PDF, and WORD</p> <p>Video <i>John Adams</i>, HBO, 2008. This seven-episode miniseries will be available on DVD and VHS after the conclusion of its run on HBO. Based on David McCullough's book of the same title, it has outstanding depictions of Boston prior to the war, as well as how the nation developed after the war's conclusion.</p>

Grade 8: Social Studies/Governance and Civics

Project Citizen Steps 2008 edition	Subject Area Standard TN State Performance Indicators (SPI)	National Standards for Civics & Government
		<ul style="list-style-type: none"> * What is the place of law in the American constitutional system? * How does the American political system provide for choice and opportunities for participation? <p><i>NSS-C.5-8.5 Roles Of The Citizen</i> What are the Roles of the Citizen in American Democracy?</p> <ul style="list-style-type: none"> * What is citizenship? * What are the rights of citizens? * What are the responsibilities of citizens? * What dispositions or traits of character are important to the preservation and improvement of American constitutional democracy? * How can citizens take part in civic life?

Sample Classroom Applications	Sample Resources

Grade 8: Social Studies/Governance and Civics

Era 4: Expansion and Reform (1801-1861)		
Project Citizen Steps 2008 edition	Subject Area Standard TN State Performance Indicators (SPI)	National Standards for Civics & Government
<p>Step 1 Identifying Public Policy Problems in Your Community Part A Class Discussion p.10 - 11</p> <p>Part B Small Group Activity p. 11</p> <p>Step 2 Selecting a Problem for Class Study p. 17</p> <p>Step 3 Gathering Information and Research p. 18 – 27</p> <p>Step 4 Developing a Class Portfolio p. 28 – 49</p> <p>Step 5 Presenting Your Portfolio p. 50 – 52</p> <p>Step 6 Reflecting on Your Learning Experience p. 53 - 55</p>	<p>8.1.2 identify cultures that contributed to the development of the United States (i.e., Native American, African, British, Scottish, Irish, German)</p> <p>8.3.1 recognize the causes and examples of migration and immigration in early America (i.e., land, religion, money, pioneer spirit, indentured servitude, displacement, and slavery)</p> <p>8.4.5 identify how conditions, actions, and motivations contributed to conflict and cooperation between states, regions, and nations</p> <p>8.4.7 recognize the impact major court decisions have had on American life (i.e., Marbury v. Madison, McCulloch v. Maryland, Dred Scott v. Sandford)</p> <p>8.4.9 analyze the contributions of Tennessee political leaders on the national scene (e.g., Andrew Jackson, Andrew Johnson, James K. Polk, Sequoyah, Sam Houston)</p> <p>8.5.5 recognize the consequences of the westward expansion of the United States</p> <p>8.5.6 classify the characteristics of major historic events into causes and effects (i.e., exploration, colonization, revolution, expansion, and Civil War)</p> <p>8.5.8 determine the social, political, and economic factors that contributed to institution of slavery in America</p> <p>8.5.9 interpret a timeline, detailing the development of political parties in the United States to the Civil War.</p>	<p><i>NSS-C.5-8.2 Foundations Of The Political System</i> What are the Foundations of the American Political System?</p> <ul style="list-style-type: none"> * What is the American idea of constitutional government? * What are the distinctive characteristics of American society? * What is American political culture? * What values and principles are basic to American constitutional democracy? <p><i>NSS-C.5-8.3 Principles Of Democracy</i> How Does the Government Established by the Constitution Embody the Purposes, Values, and Principles of American Democracy?</p> <ul style="list-style-type: none"> * How are power and responsibility distributed, shared, and limited in the government established by the United States Constitution? * What does the national government do? * What is the place of law in the American constitutional system? * How does the American political system provide for choice and opportunities for participation?

Sample Classroom Applications	Sample Resources
<p>8.4.9 Assume the identity of a famous Tennessee political leader. The student must bring the character back to life to the current time period and share their proudest accomplishments.</p> <p>8.4.5 Debate how conditions, actions, and motivations contributed to cooperation between regions (i.e., North, South, West) as it relates to migration and immigration in Early America. Students will use the Tel-Star technique.</p> <p>8.4.7 Research the major court decisions (i.e., Marbury v. Madison, McCullough v. Maryland, Dred Scott v. Sandford) that have impacted American life and will write a pro or con position paper on a particular case.</p> <p>8.5.5; 8.5.13 Work in groups to create an annotated and illustrated map that shows the demographic changes brought about by westward movement over time. Each map will reflect a different time in American history to show change over time.</p> <p>8.5.8 Complete a cluster diagram that shows the social, political, and economic factor that contributed to the institution of slavery in America.</p> <p>8.4.2; 8.4.5 Compare and contrast the governance systems of confederation and republic using a Venn diagram.</p> <p>8.4.5 Compare and contrast the culture of the North, South and West regions using a Venn diagram</p> <p>8.5.6; 8.6.1 Create foldable notes (tri-fold) over various elements of the Civil War (e.g., vocabulary, battles, people, pictures, reflections, etc.)</p>	<p>Print <i>Tennessee, A Short History</i>, Robert E. Corlew. Knoxville, 1989. Excellent book on the history of Tennessee from a well-known Tennessee Historian</p> <p>Internet Social Studies Help Center Historic Supreme Court Cases http://www.socialstudieshelp.com/CourtCases.htm Includes summaries of important Supreme Court Cases and information on how to write a research paper</p> <p>The Expansion of the American West Key Dates-American West's Expansion http://www.Americanwest.com/pages/westwrd.2.htm Timeline of westward expansion of the United States</p> <p>Venn Diagram http://eduplace.com/graphicorganizer/pdf/venn.pdf Great Venn Diagram with lines to write details comparing and contrasting two subjects</p> <p>http://www.tnhistoryforkids.org/civics/e Tennessee History for Kids website</p>

Grade 8: Social Studies / Governance and Civics

<p>Project Citizen Steps 2008 edition</p>	<p>Subject Area Standard TN State Performance Indicators (SPI)</p>	<p>National Standards for Civics & Government</p>
	<p>8.5.10 interpret maps, timelines, and charts that illustrate key elements of history (i.e., expansion, economics, politics, society)</p> <p>8.5.13 examine the demographic changes brought about by westward movement (i.e., slavery, industrialization, and Native American relocation)</p> <p>8.6.5 recognize how groups and institutions work together to meet common needs</p>	

Sample Classroom Applications	Sample Resources

Grade 8: Social Studies/Governance and Civics

Era 5: Civil War and Reconstruction (1850-1877)		
Project Citizen Steps 2008 edition	Subject Area Standard TN State Performance Indicators (SPI)	National Standards for Civics & Government
<p>Step 1 Identifying Public Policy Problems in Your Community Part A Class Discussion p.10 - 11</p> <p>Part B Small Group Activity p. 11</p> <p>Step 2 Selecting a Problem for Class Study p. 17</p> <p>Step 3 Gathering Information and Research p. 18 – 27</p> <p>Step 4 Developing a Class Portfolio p. 28 – 49</p> <p>Step 5 Presenting Your Portfolio p. 50 – 52</p> <p>Step 6 Reflecting on Your Learning Experience p. 53 - 55</p>	<p>8.4.2 identify the purposes and structures of various systems of governance (i.e., federalism, confederation, republic, democracy, executive, legislative, judicial)</p> <p>8.4.5 recognize how conditions, actions, and motivations contributed to conflict and cooperation between states, regions, and nations</p> <p>8.4.7 recognize the impact major court decisions have had on American life (i.e., Marbury v. Madison, McCulloch v. Maryland, Dred Scott v. Sandford)</p> <p>8.4.9 analyze the contributions of Tennessee political leaders on the national scene (i.e., Andrew Jackson, Andrew Johnson, James K. Polk, Sequoyah, Sam Houston)</p> <p>8.5.6 classify the characteristics of major historic events into causes and effects (i.e., exploration, colonization, revolution, expansion, and Civil War)</p> <p>8.6.1 identify the impact of individual and group decisions on historical events</p>	<p><i>NSS-C.5-8.1 Civic Life, Politics And Government</i> What are Civic Life, Politics, and Government? * What are the nature and purposes of constitutions?</p> <p><i>NSS-C.5-8.2 Foundations Of The Political System</i> What are the Foundations of the American Political System? * What is the American idea of constitutional government? * What are the distinctive characteristics of American society? * What is American political culture? * What values and principles are basic to American constitutional democracy?</p> <p><i>NSS-C.5-8.3 Principles Of Democracy</i> How Does the Government Established by the Constitution Embody the Purposes, Values, and Principles of American Democracy? * How are power and responsibility distributed, shared, and limited in the government established by the United States Constitution? * What does the national government do? * Who represents you in local, state, and national governments? * What is the place of law in the American constitutional system?</p>

Sample Classroom Applications	Sample Resources
<p>8.4.5 Divide into groups to debate the following question: Should southern officers and soldiers have been granted amnesty for their participation and support of the Confederacy during the Civil War? Why or Why not?</p> <p>8.4.7 Complete a chart that shows the features of the 13th, 14th, and 15th amendments vs. the Dred Scott Decision.</p> <p>8.4.3 Write explanations of how Congress after the Civil War devised the Reconstruction plan that called for military districts, martial law, and readmission requirements and determine the constitutionality of that plan.</p> <p>8.6.1 Complete a Venn diagram that compares/contrasts Lincoln’s plan for Reconstruction with the Radical Republicans’ plan. Students can then write an analysis of how history might have been changed had Lincoln lived to implement his plan.</p>	<p>Print <i>When the Yankees Came.</i> Steven V. Ash. University of North Carolina Press. 1995.</p> <p>Internet Social Studies Help Center Historic Supreme Court Cases http://www.socialstudieshelp.com/CourtCases.htm Includes summaries of important Supreme Court Cases and information how to write research paper.</p> <p>Venn Diagram http://eduplace.com/graphicorganizer/pdf/venn.pdf Great Venn Diagram with lines to write details comparing and contrasting two subjects.</p> <p>www.historyplace.com/CivilWar Chronologically arranged resources and links.</p> <p>http://www.tnhistoryforkids.org/civics/e Tennessee History for Kids website</p> <p>Video <i>April 18, 1865</i> (video) History Channel. Chronicles the last month of the Civil War.</p>

Grade 8: Science

Project Citizen Steps 2008 edition	2009 Subject Area Standards TN State Performance Indicators (GLE/SPI)*		National Science Education Standards
Step 1 Identifying Public Policy Problems in Your Community p.10 - 16	GLE 0807.Inq.1 GLE 0807.Inq.2 GLE 0807.Inq.3 GLE 0807.Inq.4	SPI 0807.Inq.1 SPI 0807.Inq.2 SPI 0807.Inq.4	<p>CONTENT STANDARD A: As a result of activities in grades 5-8, all students should develop</p> <ul style="list-style-type: none"> Abilities necessary to do scientific inquiry Understandings about scientific inquiry <p>CONTENT STANDARD E: As a result of activities in grades 5-8, all students should develop</p> <ul style="list-style-type: none"> Abilities of technological design Understandings about science and technology <p>CONTENT STANDARD F: As a result of activities in grades 5-8, all students should develop understanding of</p> <ul style="list-style-type: none"> Personal health Populations, resources, and environments Natural hazards Risks and benefits Science and technology in society <p>CONTENT STANDARD G: As a result of activities in grades 5-8, all students should develop understanding of</p> <ul style="list-style-type: none"> Science as a human endeavor Nature of science History of science
Step 2 Selecting a Problem for Class Study p. 17	GLE 0807.Inq.1 GLE 0807.Inq.2 GLE 0807.Inq.3 GLE 0807.Inq.4	SPI 0807.Inq.1 SPI 0807.Inq.2 SPI 0807.Inq.4	
Step 3 Gathering Information and Research p. 18 – 27	GLE 0807.Inq.2 GLE 0807.Inq.3 GLE 0807.Inq.4 GLE 0807.T/E.1	SPI 0807.Inq.2 SPI 0807.Inq.3 SPI 0807.Inq.4 SPI 0807.Inq.5	
Step 4 Developing a Class Portfolio p. 28 – 49	GLE 0807.Inq.2 GLE 0807.Inq.3 GLE 0807.Inq.4 GLE 0807.Inq.5 GLE 0807.T/E.2	SPI 0807.Inq.3 SPI 0807.Inq.4 SPI 0807.Inq.5	
Step 5 Presenting Your Portfolio p. 50 – 52	GLE 0807.Inq.5		
Step 6 Reflecting on Your Learning Experience p. 53 - 55	GLE 0807.Inq.4 GLE 0807.Inq.5	SPI 0807.Inq.4 SPI 0807.Inq.5	
	<p>*legend for GLEs and SPIs ↗</p>		

Sample Classroom Applications	Sample Resources
<p>An example for GLE 0807.5.4 and/or GLE 0807.5.5 A pond at a public park adjacent to a large farm receives animal waste and fertilizer run-off.</p> <ul style="list-style-type: none"> • Identify tools and techniques needed to gather, organize, analyze, and interpret data collected by surveying biodiversity in and around the pond. • Investigate the impact of increased nutrient content to the biodiversity of plant and animal life in and around the pond. • Explore alternate forms of fertilizer. • Consider the impact of diverting run-off around the pond to a nearby sewage drain. 	<p>Print</p> <p><i>Project WET Curriculum and Activity Guide, 1995</i> A collection of activities which address local and regional water quality by teaching the impact of water quality on society.</p> <p><i>Project WILD Curriculum and Activity Guide</i> (www.projectwild.org) Compilation of activities designed to address wildlife conservation and environmental issues.</p> <p><i>Our Wonderful World (AIMS Activities, Grades 5-9)</i> Publication by AIMS which integrates science, math, social studies, and language arts with hands-on activities.</p> <p><i>Down to Earth</i> AIMS publication which integrates science, math, social studies, and language arts with hands-on activities.</p> <p>Internet</p> <p>Environmental Protection Agency. http://www.epa.gov Federal website devoted to environmental issues.</p> <p>Internet 4 Classrooms http://www.internet4classrooms.com Includes activities to support Tennessee curriculum standards for grades K-12.</p> <p>Problem-Based Learning Framework http://www.cotf.edu/ete/teacher/teacherout.html Frameworks for problem-based learning.</p> <p>Enchanted Learning http://www.enchantedlearning.com Subscription website includes activities, hand-outs, illustrations, worksheets, and other relevant materials.</p> <p>Middle School Science Links http://www.middleschoolscience.com Website provides compilation of websites for various science topics.</p> <p style="text-align: right;">↗</p>

Grade 8: Science

Project Citizen Steps 2008 edition	*Science GLE/SPI Legend	National Science Education Standards
	<p>GRADE LEVEL EXPECTATIONS GLE 0807.Inq.1 Design and conduct open-ended scientific investigations. GLE 0807.Inq.2 Use appropriate tools and techniques to gather, organize, analyze, and interpret data. GLE 0807.Inq.3 Synthesize information to determine cause and effect relationships between evidence and explanations. GLE 0807.Inq.4 Recognize possible sources of bias and error, alternative explanations, and questions for further exploration. GLE 0807.Inq.5 Communicate scientific understanding using descriptions, explanations, and models.</p> <p>GLE 0807.T/E.1 Explore how technology responds to social, political, and economic needs. GLE 0807.T/E.2 Know that the engineering design process involves an ongoing series of events that incorporate design constraints, model building, testing, evaluating, modifying, and retesting.</p> <p>STATE PERFORMANCE INDICATORS SPI 0807.Inq.1 Design a simple experimental procedure with an identified control and appropriate variables. SPI 0807.Inq.2 Select tools and procedures needed to conduct a moderately complex experiment. SPI 0807.Inq.3 Interpret and translate data into a table, graph, or diagram. SPI 0807.Inq.4 Draw a conclusion that establishes a cause and effect relationship supported by evidence. SPI 0807.Inq.5 Identify a faulty interpretation of data that is due to bias or experimental error.</p>	

Sample Classroom Applications	Sample Resources
	<p>Tennessee Valley Authority http://www.tva.gov Federal website includes information on environmental issues specific to TVA watersheds.</p> <p>U.S. Geological Survey http://www.usgs.gov Federal website focuses on soil conservation, maps, watersheds, and other geology issues.</p> <p>Tennessee Department of Environment and Conservation http://www.state.tn.us/environment State website devoted to environmental and conservation topics.</p> <p>Access Excellence http://www.accessexcellence.org A collection of simulations, representations, graphic galleries, and lesson exchanges, particularly for life sciences.</p> <p>Nova Online http://www.pbs.org/wgbh/nova On-line simulations, resources, extensions of PBS broadcasts.</p> <p>Other Local Agricultural Extension Office Local Health Department Podcasts Tennessee Wildlife Resource Agency (TWRA) East Tennessee State University Department of Public Health</p>

Grade 8: English / Language Arts

<p align="center">Project Citizen Steps 2008 edition</p>	<p align="center">2009 Subject Area Standard TN Grade Level Expectations (GLE)</p>	<p align="center">National Standards for English/Language Arts http://www.ncte.org/about/over/standards/110846.htm</p>
<p>Introduction to Project Citizen p. 1-9</p> <p>Step 1 Identifying Public Policy Problems in Your Community p. 10-16</p> <p>Part A Class Discussion p. 10-11</p> <p>Part B Small Group Activity p. 11</p>	<p>GLE 0701.2.1/0801.2.1 Demonstrate critical listening skills essential for comprehension, evaluation, problem solving, and task completion.</p> <p>GLE 0701.2.3/0801.2.5 Understand strategies for expressing ideas clearly and effectively in a variety of oral contexts.</p> <p>GLE 0701.2.5/0801.2.7 Participate in work teams and group discussions.</p> <p>GLE 0701.3.2/0801.3.2 Employ a variety of prewriting strategies.</p>	<p><i>See appendix for complete text of the National Standards items. Information below represents main idea of the related standards.</i></p> <p>4. Audience and purposes</p> <p>12. Spoken, written, visual language</p>
<p>Part C Homework Assignments p. 13-16</p>	<p>GLE 0701.2.1/0801.2.1 Demonstrate critical listening skills essential for comprehension, evaluation, problem solving, and task completion.</p> <p>GLE 0701.4.2/0801.4.2 Gather relevant information from a variety of print and electronic sources, as well as from direct observation, interviews, and surveys.</p> <p>GLE 0701.4.3/0801.4.3 Make distinctions about credibility, reliability, consistency, strengths, and limitations of resources, including information gathered from web sites.</p> <p>GLE 0701.5.2/0801.5.2 Evaluate arguments for false premises, logical fallacies, and quality of evidence.</p> <p>GLE 0701.6.3/0801.6.3 Read, interpret, and analyze graphics that support informational texts.</p> <p>GLE 0701.7.1/0801.7.1 Analyze media for their ability to inform, persuade, and entertain.</p>	<p>1. Print and non-print texts</p> <p>3. Comprehend, interpret, evaluate, appreciate texts</p> <p>4. Audience and purposes</p> <p>7. Research by generating ideas, questions, problems</p> <p>8. Technological and information resources</p> <p>12. Spoken, written, visual language</p>

Sample Classroom Applications	Sample Resources
<p>Introduction: Class Discussion</p> <p>Writing assignment: Choose one of the following topics and write a well-developed paragraph or essay:</p> <p>(1) Communities across the United State have many problems in common. Consider an environmental problem you see in our community. Recall what you have heard on the news, read in the newspaper, or heard your parents or other adults discussing. Write about what you already know about the problem or what you have heard.</p> <p>(2) All communities have problems involving community standards. Some of these standards may be in regard to crosswalks, littering, recycling, or other issues where specific guidelines are required. Think about a problem involving standards in our community. Explain what these problems are and support your reasons for citing these problems with examples and details.</p> <p>(3) There are three categories of rights that are important to democracy and to American citizens. These are personal rights, political rights, and economic rights. When people become aware of problems in their communities, they often want government to develop and carry out policies to deal with those problems. These may be problems for which there are existing policies or laws that do not work well or are not being enforced. OR, there are no policies or laws. One example is the large number of people who do not vote in local elections. Another problem that many people argue is that money plays too great a role in the election of government officials. Consider what you have read in the newspaper, seen on the news, or heard your parents or other adults discussing that involves basic liberties.</p> <p>Step 1 Part A Class Discussion</p> <p>Hold organized class discussions in discussion circles.</p> <p>Brainstorm ideas about community problems.</p> <p>Work in pairs and complete graphic organizer sorting problems into groups based on headings of students' choosing (safety, environment, etc.)</p> <p>Step 1 Part B Small Group Activity</p> <p>Meet in small groups to discuss topics generated through discussions, brainstorming, and graphic organizers. Answer questions on the Problem Identification and Analysis Form in the <u>Project Citizen</u> guide (p. 11)</p>	<p>Print</p> <p>Writing prompts listed under Sample Classroom Activities</p> <p><i>Guidelines for Discussion Circles</i> TCCL nb p.321-325 / cd p.348-353*</p> <p><i>Alphabet Chart</i> TCCL nb p.232 / cd p.258</p> <p><i>Graphic organizer</i> TCCL nb p. 167 / cd p.183</p> <p><i>Discussion Web graphic organizer</i> TCCL nb p. 347 / cd p.376</p> <p><u>Project Citizen</u> guide. 2008 edition</p> <p>Internet</p> <p><u>New York Times on the web Learning Network</u> http://www.nytimes.com/learning/teachers/lessons Contains extensive daily lesson plans and interactive lessons for students. Lessons are primarily on current events.</p> <p><u>Official White House internet site</u> http://www.whitehouse.gov/kids Includes links to lessons and activities for students. Lessons are on current or historical events. Many topics will inform students about current civics issues.</p> <p><u>Peace Center of Central Oregon</u> http://www.pcoco.org/Discussion_Circles.html Lists discussion circles protocols for any age group.</p> <p><u>Graphic Organizers Concept Mapping References</u> http://www.graphic.org Contains examples of numerous simple graphic organizers. Samples are filled in to guide students in correct use of the specific organizer selected.</p>
<p>TCCL nb/cd– <i>TN Cross-Curricular Learning</i> available as a notebook or as a cd; page numbers are not identical in the two formats.</p>	

Grade 8: English / Language Arts

<p align="center">Project Citizen Steps 2008 edition</p>	<p align="center">2009 Subject Area Standard TN Grade Level Expectations (GLE)</p>	<p align="center">National Standards English/Language Arts</p>
<p>Step 2 Selecting a Problem for Class Study A. Class Discussion p. 17</p>	<p>GLE 0701.2.1/0801.2.1 Demonstrate critical listening skills essential for comprehension, evaluation, problem solving, and task completion. GLE 0701.2.5/0801.2.7 Participate in work teams and group discussions.</p>	<p>4. Audience and purposes 12. Spoken, written, visual language</p>
<p>Step 3 Gathering Information A. Class Discussion p. 18-20</p>	<p>GLE 0701.4.2/0801.4.2 Gather relevant information from a variety of print and electronic sources, as well as from direct observation, interviews, and surveys.</p>	<p>1. Print and non-print texts 3. Comprehend, interpret, evaluate, appreciate texts 7. Research by generating ideas, questions, problems 8. Technological and information resources 12. Spoken, written, visual language</p>
<p>B. Guidelines p. 21-27</p>	<p>GLE 0701.2.1/0801.2.1 Demonstrate critical listening skills essential for comprehension, evaluation, problem solving, and task completion. GLE 0701.4.2/0801.4.2 Gather relevant information from a variety of print and electronic sources, as well as from direct observation, interviews, and surveys. GLE 0701.4.3/0801.4.3 Make distinctions about the credibility, reliability, consistency, strengths, and limitations of resources, including information gathered from web sites.</p>	<p>1. Print and non-print texts 3. Comprehend, interpret, evaluate, appreciate texts 7. Research by generating ideas, questions, problems 8. Technological and information resources 12. Spoken, written, visual language</p>
<p>C. Homework Assignments p. 22</p>	<p>GLE 0701.2.1/0801.2.1 Demonstrate critical listening skills essential for comprehension, evaluation, problem solving, and task completion. GLE 0701.4.2/0801.4.2 Gather relevant information from a variety of print and electronic sources, as well as from direct observation, interviews, and surveys.</p>	<p>1. Print and non-print texts 3. Comprehend, interpret, evaluate, appreciate texts 7. Research by generating ideas, questions, problems 8. Technological and information resources</p>

Sample Classroom Applications	Sample Resources
<p>Step 1 Part C Homework Assignments Conduct interviews with family, friends, neighbors, school personnel, or others about information pertinent to any topic being studied.</p> <p>Identify information in newspapers or other reliable news-related print sources to support and develop topics being studied in the language arts program.</p> <p>Take notes on an appropriate form (such as Cornell notes) while listening to or watching a report on radio, television, or the Internet. Share the information orally in a group or write a summary.</p>	<p>Print Assignments and forms provided in <u>Project Citizen</u> guide: Interview form, p. 14; Printed Sources form, p. 15; Radio, Television, Internet Sources form p. 16</p> <p>Internet <i>Our Stories project website designed to help people share their stories.</i> http://www.ourstories.org/studentguide.html Includes steps for conducting an interview. Sample questions are included.</p>
<p>Step 2 Selecting a Problem for Class Study</p> <p>Students use Four Corners/On the Fence strategy. Undecided students go to the middle of the room—on the fence. Others go to the four corners of the room to stand in the designated corner representing strongly agree or somewhat agree or strongly disagree or somewhat disagree.</p>	<p>Print Teacher-prepared laminated signs with the categories: 1. Strongly Agree; 2. Agree; 3. Disagree; 4. Strongly Disagree</p> <p>Internet <i>Education World website with practical lesson plans for teachers</i> http://www.educationworld.com/a_lesson/03/lp304-04.shtml Sample debate lesson using four corners strategy</p>
<p>Step 3 Gathering Information and Research</p> <p>Arrange a time for the school librarian/media specialist to instruct students how and where to gather information using the school library and the public library.</p> <p>Distinguish between primary and secondary sources.</p> <p>Use an Information Search</p> <p>Have students work with a continuum from most to least valid source.</p>	<p>Print TCCL nb p.297-98; cd p.323-24 TCCL nb p.385-88; cd p. 414-17 TCCL nb p.392 (393-96); cd p. 421 (422-35)</p> <p>Discussion Web graphic organizer TCCL nb p. 347; cd p.376</p> <p>Internet University of Cal/Berkeley teaching internet research methods site http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html Includes links to identifying reliability of sites on the web</p>
<p>Step 3 Part C Homework Assignments</p> <p>Write business letters using performance assessment grading rubric. Letters can be to elected officials, school or community leaders, or other members of the community who have an interest in topics related to improved quality of life for all members of the represented body.</p>	<p>Print TCCL nb p. 333; cd p. 361 Forms provided in <u>Project Citizen</u> guide p. 23-27</p>

Grade 8: Language Arts

Project Citizen Steps 2008 edition	2009 Subject Area Standard TN Grade Level Expectations (GLE)	National Standards for English/Language Arts
<p>Step 4 Developing a Class Portfolio A. Class Discussion p. 28-34</p>	<p>GLE 0701.2.1/0801.2.1 Demonstrate critical listening skills essential for comprehension, evaluation, problem solving, and task completion.</p> <p>GLE 0701.2.3/0801.2.5 Understand strategies for expressing ideas clearly and effectively in a variety of oral contexts.</p> <p>GLE 0701.2.5/0801.2.7 Participate in work teams and group discussions.</p>	<p>4. Audience and purposes</p> <p>6. Language structure, conventions, media techniques</p> <p>7. Research by generating ideas, questions, problems</p> <p>8. Technological and information resources</p> <p>12. Spoken, written, visual language</p>
<p>C. Evaluation Criteria p. 35</p>	<p>GLE 0701.4.3/0801.4.3 Make distinctions about credibility, reliability, consistency, strengths, and limitations of resources, including information gathered from web sites.</p> <p>GLE 0701.5.1/0801.5.1 Distinguish among facts and opinions, evidence, and inferences.</p> <p>GLE 0701.5.2/0801.5.2 Evaluate arguments for false premises, logical fallacies, and quality of evidence.</p> <p>GLE 0701.5.3/0801.5.3 Analyze the logical features of an argument, including inductive and deductive elements.</p>	<p>3. Comprehend, interpret, evaluate, appreciate texts</p> <p>7. Research by generating ideas, questions, problems</p> <p>8. Technological and information resources</p> <p>12. Spoken, written, visual language</p>
<p>D. Group Instructions p. 36</p>	<p>GLE 0701.2.1/0801.2.1 Demonstrate critical listening skills essential for comprehension, evaluation, problem solving, and task completion.</p> <p>GLE 0701.2.3/0801.2.5 Understand strategies for expressing ideas clearly and effectively in a variety of oral contexts.</p> <p>GLE 0701.2.5/0801.2.7 Participate in work teams and group discussions.</p>	<p>4. Audience and purposes</p> <p>12. Spoken, written, visual language</p>

Sample Classroom Applications	Sample Resources
<p>Step 4 Part A Class Discussion</p> <p>Work in collaborative groups to develop a consensus for a class activity, lesson, work of literature, or project.</p>	<p>Print Worksheets provided in <u>Project Citizen</u> Guide p. 29-34</p> <p>Internet <i>Berkeley website dedicated to specific teaching strategies.</i> http://teaching.berkeley.edu/bgd/collaborative.html Focus is on establishing and monitoring collaborative groups.</p>
<p>Step 4 Part C Evaluation Criteria</p> <p>Self assess individual or group work. Students should use the rubric provided by a teacher for any lesson to evaluate the quality of the product they have developed. Careful self-examination of assignments develops independent learning.</p>	<p>Print Forms provided in <u>Project Citizen</u> Guide p. 49</p> <p>Internet <i>Teacher-friendly rubric building site</i> http://www.rubrics4teachers.com/ This site provides templates online for teachers to create rubrics. There are also many rubrics available for use or for adaptation to any assignment. Teachers can store their rubrics on the web for a limited time.</p>
<p>Step 4 Part D Group Instructions and Portfolio Group</p> <p>Evaluate a varied selection of art works with attention to form, structure, color, etc., as preparation for using the elements of art in the preparation of the display boards.</p>	<p>Print Forms for examining public policy are provided in <u>Project Citizen</u> Guide p. 45-47; p. 49</p> <p>Internet <i>Elmers Glue website on creating appealing presentation boards</i> http://www.elmers.com/products/pdfs/poster.pdf</p>

Grade 8: English / Language Arts

<p align="center">Project Citizen Steps 2008 edition</p>	<p align="center">2009 Subject Area Standard TN Grade Level Expectation (GLE)</p>	<p align="center">National Standards for English/Language Arts</p>
<p>Step 5 Presenting Your Portfolio A. Opening Oral Presentation p. 50-51</p> <p>B. Follow-Up Questions p. 51</p>	<p>GLE 0701.2.1/0801.2.1 Demonstrate critical listening skills essential for comprehension, evaluation, problem solving, and task completion.</p> <p>GLE 0701.2.3/0801.2.5 Understand strategies for expressing ideas clearly and effectively in a variety of oral contexts.</p> <p>GLE 0701.2.4/0801.2.6 Deliver effective oral presentations.</p> <p>GLE 0701.2.5/0801.2.7 Participate in work teams and group discussions.</p>	<p>4. Audience and purposes</p> <p>12. Spoken, written, visual language</p>
<p>Step 6 Reflecting on Learning Experience p. 53-55</p>	<p>GLE 0701.2.5/0801.2.7 Participate in work teams and group discussions.</p>	<p>4. Audience and purposes</p> <p>12. Spoken, written, visual language</p>

Sample Classroom Applications	Sample Resources
<p>Step 5 Part A Opening Oral Presentation</p> <p>Make a persuasive speech to legislator. Prepare by writing a letter to a legislator. Practice the presentation by reading the letter to classmates who use a persuasive letter rubric to score effectiveness of the arguments.</p>	<p>Print</p> <p>Sample persuasive letter to a legislator TCCL nb p. 361; cd p. 390</p> <p>Assessment rubric for a persuasive letter TCCL nb p. 362064; cd p. 391-93</p> <p>Rubrics TCCL nb p. 35,36, 38-40; cd. P. 38, 39, 41-43</p> <p>Cooperative learning rubric TCCL nb p. 43; cd p. 46</p> <p>Oral presentation rubric TCCL nb p. 330; cd p. 358</p> <p>Internet</p> <p><i>University of Wisconsin website about rubrics for practical use in classrooms.</i> http://www.uwstout.edu/soe/profdev/rubrics.shtml#oral Oral presentation rubric available.</p>
<p>Step 5 Part B Follow-up Questions</p> <p>Use the six hat discussion strategy. Students are given one of six colors each of which represents a different assignment in the upcoming class discussion. This helps students focus on a task and forces them to present information from a variety of perspectives.</p> <p>White: neutral; objective; facts and figures only. Red: anger; rage; emotions; feelings Black: somber; serious; points out obstacles Yellow: sunny; positive about benefits of the idea Green: creativity; new ideas about making the proposal better or successful Blue: what needs to be done to make this happen</p>	<p>Print</p> <p>Modified from <u>Six Thinking Hats</u> by Edward DeBono</p> <p>Laminated pieces of the 6 colors of construction paper for students to hold when assigned a role.</p> <p>Internet</p> <p><i>Mind Tools Website for Essential Skills</i> http://www.uwstout.edu/soe/profdev/rubrics.shtml#oral Includes developed explanation of the Six Thinking Hats strategy. Link to a free worksheet is on the site, as well as examples of student responses.</p>

Standards for the English Language Arts

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<http://www.ncte.org/about/over/standards/110846.htm>

1. Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.
2. Students read a wide range of literature from many periods in many genres to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience.
3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).
4. Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
5. Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.
6. Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and non-print texts.
7. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.
8. Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.
9. Students develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.
10. Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.
11. Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities.
12. Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

Notes

Grade 8: Mathematics

Project Citizen Steps 2008 edition	Subject Area Standard TN State Performance Indicators (SPI)	National Council of Teachers of Mathematics Standards
<p>Step 3 Gathering Information and Research p. 18 – 27</p> <p>Step 4 Developing a Class Portfolio p. 28 – 49</p> <p>Step 5 Presenting Your Portfolio p. 50 – 52</p>	<p align="center"><i>Standard 1 Mathematical Processes</i></p> <p>SPI 0806.1.1 Solve problems involving rate/time/distance (i.e., $d = rt$)</p> <p>SPI 0806.1.2 Interpret a qualitative graph representing a contextual situation</p> <p>SPI 0806.1.3 Calculate rates involving cost per unit to determine the best buy</p>	<p><i>Problem Solving</i> Apply and adapt a variety of appropriate strategies to solve problems</p> <p><i>Communication</i> Communicating mathematical thinking coherently and clearly to peers, teachers, and others. Analyze and evaluate the mathematical thinking and strategies of others. Create and use representations to organize, record, and communicate mathematical ideas.</p> <p><i>Measurement</i> Apply appropriate techniques, tools, and formulas to determine measurements.</p>
	<p align="center"><i>Standard 2 Numbers Operations</i></p> <p>SPI 0806.2.1 Order and compare rational and irrational numbers and locate on the number line</p> <p>SPI 0806.2.2 Identify numbers and square roots as rational or irrational</p> <p>SPI 0806.2.3 Use scientific notation to compute products and quotients</p> <p>SPI 0806.2.4 Solve real-world problems requiring scientific notation</p>	<p><i>Number and Operation</i> Understanding numbers, ways of representing numbers, relationships among numbers, and number systems.</p> <p><i>Number and Operation</i> Understanding numbers, ways of representing numbers, relationships among numbers, and number systems. Compute fluently and make reasonable estimates.</p> <p><i>Communication</i> Communicating mathematical thinking coherently and clearly to peers, teachers, and others. Analyze and evaluate the mathematical thinking and strategies of others. Use the language of mathematics to express mathematical ideas precisely.</p>

Sample Classroom Applications	Sample Resources
<p><i>Standard 1 Mathematical Process</i></p> <p>Example for SPI 0806.1.1 Depending on the problem chosen, use the distance formula in problem dealing with speed zone near a school or park.</p> <p>Example for SPI 0806.1.2 Representing data gathered from research or survey and accurately describing the information as part of the Project Citizen Portfolio.</p> <p>Example for SPI 0806.1.3 Representing data gathered from research supporting proposal for change in public policy to deal with the problem</p> <p><i>Standard 2 Numbers Operations</i></p> <p>Example for SPI 0806.2.1 Using number line placement to represent increases or decreases in researched information. Displaying these increases or decreases on number line when presenting alternative policies to deal with the problem.</p> <p>Example for SPI 0806.2.2 Students may use a line plot to represent data collected or to organize data from a survey.</p> <p>Example for SPI 0806.2.3 Depending on the problem, scientific notation would be useful in computing very large or very small numbers and representing these when proposing public policy to deal with the problem.</p> <p>Example for SPI 0806.2.4 Depending on the problem, scientific notation would be useful in computing very large or very small numbers and representing these when proposing public policy to deal with the problem.</p>	<p><i>Project Citizen Math Web Sites</i></p> <p>http://www.schoolhousetech.com/</p> <p>http://www.lessonplanet.com/search/Math?OVRAW=math%20lesson%20plan&OVKEY=math%20lesson%20plan&OVMTC=standard&OVADID=17786608511&OVKWID=2206887511</p> <p>http://www.tutor.com/</p> <p>http://www.mathforum.com/</p> <p>http://www.kutasoftware.com/</p> <p>http://www.math.com/</p> <p>http://www.edhelper.com/math.htm?gclid=CL-9k6GezJICFR11godDgNZcA</p>

Grade 8: Mathematics

Project Citizen Steps 2008 edition	Subject Area Standard TN State Performance Indicators (SPI) <i>Standard 3 Algebra</i>	National Council of Teachers of Mathematics Standards
<p>Step 3 Gathering Information and Research p. 18 – 27</p> <p>Step 4 Developing a Class Portfolio p. 28 – 49</p> <p>Step 5 Presenting Your Portfolio p. 50 – 52</p>	<p>SPI 0806.3.1 Find solutions to systems of two linear equations in two variables</p> <p>SPI 0806.3.2 Solve linear equations $f(x) = g(x)$</p> <p>SPI 0806.3.3 Solve and graph linear inequalities in two variables</p> <p>SPI 0806.3.4 Translate between various representations of a linear function</p> <p>SPI 0806.3.5 Determine the slope of a line from an equation, given points, a table or a graph</p> <p>SPI 0806.3.6 Analyze the graph of a linear function to find solutions, roots, and intercepts.</p> <p>SPI 0806.3.7 Identify, compare and contrast functions as linear or nonlinear</p>	<p>Algebra Understand patterns, relations, and functions.</p> <p>Represent and analyze mathematical situations and structures using algebraic symbols</p> <p>Represent and analyze mathematical situations and structures using algebraic symbols Explore relationships between symbolic expressions and graphs of lines, paying particular attention to the meaning of intercept and slope.</p> <p>Explore relationships between symbolic expressions and graphs of lines, paying particular attention to the meaning of intercept and slope.</p> <p>Identify functions as linear or nonlinear and contrast their properties from tables, graphs, or equations.</p>

Sample Classroom Applications	Sample Resources
<p><i>Standard 3 Algebra</i></p> <p>Example for SPI 0806.3.1 Linear functions may be used to compare relations between the problem and two or more solutions involving linear functions.</p> <p>Example for SPI 0806.3.2, SPI 0806.3.3, SPI 0806.3.4 Depending on the problem, linear functions may be used to represent possible solutions to the problem.</p> <p>Example for SPI 0806.3.5 Depending on the problem, linear functions may be used to represent rate of change and tie in slope using two given points, a table or graph.</p> <p>Example for SPI 0806.3.6 Depending on the problem, linear functions may be used to represent possible solutions to the problem using intercepts to represent starting points of a graph.</p> <p>Example for SPI 0806.3.7 Depending on the problem, linear functions may be used to represent possible solutions to the problem.</p>	

Grade 8: Mathematics

<p>Project Citizen Steps 2008 edition</p>	<p>Subject Area Standard TN State Performance Indicators (SPI)</p>	<p>National Council of Teachers of Mathematics Standards</p>
<p>Step 3 Gathering Information and Research p. 18 – 27</p> <p>Step 4 Developing a Class Portfolio p. 28 – 49</p> <p>Step 5 Presenting Your Portfolio p. 50 – 52</p>	<p><i>Standard 4 Geometry & Measurement</i></p>	<p>Geometry Use visualization spatial reasoning, and geometric modeling to solve problems.</p> <p>Create and critique inductive and deductive arguments concerning geometric ideas and relationships, such as congruence, similarity and the Pythagorean relationships.</p> <p>Use visualization spatial reasoning, and geometric modeling to solve problems.</p> <p>Measurement Understand measurable attributes of objects and the units, systems, and processes of measurement.</p> <p>Geometry Specify locations and describe spatial relationships using coordinate geometry and other representational systems.</p>
	<p>SPI 0806.4.1 Use the Pythagorean Theorem to find the missing side measure in a right triangle</p> <p>SPI 0806.4.2 Apply the Pythagorean theorem to find distances between points in the coordinate plane to measure lengths and analyze the polygons and polyhedron</p> <p>SPI 0806.4.3 Understand the relationships among the angles formed by parallel lines cut by transversals</p> <p>SPI 0806.4.4 Convert between and within the U.S. Customary System and the metric system</p> <p>SPI 0806.4.5 Identify the intersection of two or more geometric figures in the plane</p>	
	<p><i>Standard 5 Data Analysis, Statistics, and Probability</i></p>	<p>Data Analysis & Probability Understand and apply basic concepts of probability.</p> <p>Select and use appropriate statistical methods to analyze data.</p>
	<p>SPI 0806.5.1 Calculate probabilities of events from simple experiments with equally probable outcomes.</p> <p>SPI 0806.5.2 Use a variety of methods to compute probabilities for compound events (e.g., multiplication, organized lists, tree diagrams, area models</p> <p>SPI 0806.5.3 Generalize the relationship between two sets of data using scatterplots and lines of best fit.</p> <p>SPI 0806.5.4 Recognize misrepresentations of published data in the media.</p>	

Sample Classroom Applications	Sample Resources
<p><i>Standard 4 Geometry & Measurement</i></p> <p>Example for SPI 0806.4.1 Depending on the board layout, right triangles may be used in board layout and missing side measure can be calculated.</p> <p>Example for SPI 0806.4.2 Before covering the board, grid the board and allow students to use this for placement of objects. Then use these push pins to represent the placement and apply Pythagorean Theorem to calculate scale and check similarity.</p> <p>Example for SPI 0806.4.3 Depending on the project, parallel lines may be used on boards in layout. E.g., A close line on a board for displaying dress code items</p> <p>Example for SPI 0806.4.4 Depending on the problem, various units may be used to communicate measurements relating to the problem.</p> <p>Example for SPI 0806.4.5 Could be used in the layout process of the boards.</p> <p><i>Standard 5 Data Analysis, Statistics, and Probability</i></p> <p>Example for SPI 0806.5.1 Depending on the problem, students may use probable outcomes in the suggested solution.</p> <p>Example for SPI 0806.5.2 Tree diagrams and organized lists will be used in accumulating data from surveys.</p> <p>Example for SPI 0806.5.3 Depending on the problems and data to be reported, scatter plots and lines of best fit may be used to represent data gathered from research or survey.</p> <p>Example for SPI 0806.5.4 Depending on the problems and data to be reported, students must avoid misrepresentations of data. Students must also recognize misrepresentations of data to avoid inclusion in project display or portfolio.</p>	