Florida Department of Education
Introduction to the GED Curriculum Framework

This curriculum supplement has a dual purpose: to provide a resource for teachers to help students prepare for the General Educational Development (GED) Test and to assist teachers in creating an educational program which fosters the development of students' knowledge and skills so that they can become independent learners.

Overview of the GED Tests

Language Arts, Writing

The GED Language Arts, Writing Test measures a student's ability to write a well-constructed essay, as well as to revise and edit sample texts. The Language Arts, Writing Test is divided into two parts. Part I requires that students demonstrate revising and editing skills – organization, sentence structure, usage, and mechanics – by answering multiple-choice questions based on specific passages of writing. Part II requires that students write an essay. The scores earned on both parts of the test are combined and reported on a standard score scale as a single score.

Social Studies

The GED Social Studies Test is composed of multiple-choice questions that require students to understand, use, analyze, and evaluate information from selected passages, charts, maps, graphs, political cartoons, photographs, and diagrams. This test measures the student's ability to use knowledge and information about fundamental social studies concepts and principles in a variety of ways. The questions cover the areas of U. S. and world history, civics and government, economics, and geography. Approximately 50% of the questions include graphic-based information presented in the form of graphs, charts, maps, photographs, and political cartoons.

Science

The GED Science Test requires that students understand or use the information provided to solve a problem or make a judgment, using abstract reasoning and problem-solving skills. The questions that compose this test are taken from the areas of: life sciences/biology, physical science (including physics and chemistry, and earth and space science. Students need knowledge of fundamental science concepts and issues with the ability to apply higher-order thinking skills. Approximately 50% of the questions include graphic-based information presented in the form of graphs, charts, maps, photographs, and political cartoons.

Language Arts, Reading

The GED Language Arts, Reading Test assesses a student's ability to comprehend and interpret reading passages. Students are also required to apply what they have read to new situations. The test includes passages from literary texts, such as poetry, drama, and fiction prose, as well as nonfiction prose from workplace and community documents. The test includes seven passages derived from two types of literary texts, literary and nonfiction. Most passages consist of 200-400 words with four to eight questions for each selection.

Mathematics

The GED Mathematics Test is divided into two parts. Part I allows for the use of a calculator. Part II does not. Both parts include multiple-choice questions, as well as open-ended questions in which the answers are placed on a grid. The GED Mathematics Test includes questions from four major areas: number operations and number sense; measurement and geometry; data analysis, statistics, and probability; and

algebra, functions, and patterns. The GED Mathematics Test is designed to measure problem-solving, analytical, and reasoning skills in real-life situations.

General Education Development (GED) Standards

Language Arts, Writing	Demonstrate and apply advanced language skills through writing and communicating ideas effectively.
Social Studies	Demonstrate and apply advanced reading and visual processing skills using selections and graphics in United States and world history, geography, government, civics, and economics.
Science	Demonstrate and apply advanced reading and visual processing skills as outlined by the National Science Education Standards, using selections in biology, chemistry, earth science, space science, physics and environmental and health topics.
Language Arts, Reading	Demonstrate and apply advanced reading skills using selections in various literary genres including fiction, non-fiction, poetry, drama literary forms, nonfiction prose, as well as workplace and community documents.
Mathematics	Demonstrate advanced mathematics skills in number operations and number sense; measurement and geometry; data analysis, statistics, and probability; and algebra, functions, and patterns.
Study, Test-Taking, and Reference Skills	Demonstrate basic study, test taking, and reference skills appropriate to the GED.
Workplace Readiness Skills	Demonstrate acceptable job acquisition and job retention skills.
Basic Computer Literacy	Demonstrate basic computer literacy skills.

Language Arts, Writing Standard

Demonstrate and apply advanced language skills through writing and communicating ideas effectively.

Objective/Benchmark	Examples/Strategies
01.01 Apply basic rules of mechanics, including capitalization, punctuation, and spelling related to possessives, contractions, and homonyms, to different types of workplace, community, instructional, "how-to", and informational documents.	Examples of Content Required • Capitalization • Punctuation • Spelling • Possessives • Contractions • Homonyms
	Strategies • Teach rules of capitalization, punctuation, and spelling related to possessives, contractions, and homonyms. • Have students proofread and edit workplace and community documents, such as letters, memos, reports, resumes, applications, executive summaries, and brochures. Students should check the documents for capitalization and punctuation errors, as well as for basic rules of mechanics. • Have students correct mechanical errors in business letters and "how-to" and instructional documents. • Have students identify and correct errors in personal, school, or community-related documents. • Have students proofread and edit texts for the correct use of colons, semi-colons, and quotation marks. • Have students locate common errors in homonym usage and spelling in real-world documents. Students should correct the documents and share their findings with the class. • Create "Find the Error" worksheets. Divide students into teams and give a time limit for them to correct as many errors as possible. Include errors in the use of subordinate clauses, appositives, direct address, and divided quotes. • Have students keep a personal list of frequently misspelled/misused possessives, contractions, and homonyms. • Proofread and edit documents for correct possessive forms and contractions. Have students create incorrect paragraphs to be edited by their peers. • Have students imagine that they are discussing a promotion with their boss. Students should use quotation marks to write a dialogue in which they discuss their concerns. • Have students select a magazine photograph that has two or more people in it. Have them create a conversation based on the picture and use correct punctuation. • Have students write a memo to a classmate that includes at least five examples of incorrect possessives, contractions, and homonyms. Have the classmate edit the paper. • Have students write a paragraph that includes no punctuation marks. Have students exchange papers and correctly punctuate the writing sample. • Write lists of singular and plural nouns on the board. Have students use each word's possessive form and use it in a

	workplace document. • Have students write a business letter of complaint about the quality of a product. Have students construct sentences within the letter that require the use of colons and apostrophes. • Have students work in pairs or teams. Create index cards for editing quotes, possessives, homonyms, and capitalization. Give students a specified time frame to see how many corrections they can make. Keep score.
01.02 Apply basic rules of grammar usage, including subject-verb agreement, verb tense, verb forms, and pronoun usage, to different types of workplace, community, instructional, "how-to", and informational documents.	Examples of Content Required • Subject-verb agreement • Verb tense • Verb forms • Pronoun usage, including reference, shifts, and agreement
	Strategies • Teach the rules of grammar usage: subject-verb agreement, verb tense and forms, and pronoun usage. • Proofread and edit personal, school, and workplace documents for correct grammar, verb forms, pronouns, and subject-verb agreement. • Have students write a paragraph about their favorite and least favorite jobs. Students should use compound subjects/predicates in the sentences. Use peer editing to check for correct subject-verb agreement. • Write a list of compound subjects on the board; each should contain at least one pronoun (e.g., Mary and me, she and I). Have students use the compound subjects correctly in a memo to their supervisor. • Write a paragraph on the board that contains shifts in tense. Have students rewrite the paragraph correctly. • Have students identify active/passive verb forms in real-life documents and rewrite the examples/sentences in the opposite voice. • Create a stack of incorrect grammar usage cards. Deal out five cards to each student. Identify one area at a time, such as verb tense. If a student has the card, the student must "play" that card and edit the card so it is correct. The winner is the first person to use and correctly edit all of his/her cards. • Divide the class into teams. Have students edit paragraphs from workplace and community documents where each person edits one sentence and then "passes it on" to other team members until the entire passage is edited. Teams can compete for the fastest and most accurate editing.
01.03 Apply basic rules of sentence structure, including parallelism, repetition, subordination, run-on sentences, sentence fragments, comma splices, and misplaced/dangling modifiers, to different types of workplace, community,	Examples of Content Required • Parallel structure • Repetition • Subordination • Run-on sentences • Sentence fragments • Comma splices

instructional, “how-to”, and informational documents.	• Misplaced/dangling modifiers
	Strategies • Explain and model the three different question types: correction, revision, and construction shift. • Define and provide examples of parallel structure, repetition, subordination, run-on sentences, sentence fragments, comma splices, and dangling and misplaced modifiers. • Present examples of sentences written with correct parallel structure that use various parts of speech. • Have students identify parallel structure from a list of sentences. • Assign students to work in pairs. Provide a handout in which students must correct parallel structure errors. • Provide students with questions from different content areas, such as science and social studies. Have students compose answers to the questions using complete sentences with correct parallel structure. • Define independent clause, dependent clause, and complex sentence for students. Provide examples of each from real-life documents. • Provide students with a list of subordinating conjunctions. Show them the relationships that exist. • Give students groups of related simple sentences. Divide students into teams. Have each team form a complex sentence from the group of related simple sentences. Students should use appropriate subordinating conjunctions. Have students share their sentences with the class. • Have students locate subordinating conjunctions in newspaper articles and show the relationship that is stated. • Have students identify incorrectly written sentences, run-on sentences, sentence fragments, comma splices, repetition, incorrect subordination, and misplaced/dangling modifiers in real-life documents. Have students construct complete sentences to correct the errors noted. • Assign students the task of reading local newspapers and scrutinizing them for errors in Edited American English (EAE). Have them bring their “errors” to class. The class may wish to create a bulletin board of editing errors. • Give students a real world document, such as a set of instructions or a letter of application. Assign them to condense the number of sentences in the document by eliminating verbosity and using subordinating conjunctions. Students should maintain the original meaning of the text. • Have students compose letters of application for jobs which they have found in the local newspaper. Students should follow the rules of Edited American English (EAE) when writing their applications. Assign the students to critique one another’s letters. • Arrange a class project where students revise specific sections of the school’s student handbook. • Ask each student to write a letter to the editor of the local newspaper regarding an issue about which he/she possesses strong feelings. Have students critique each letter for conventions of Edited American English (EAE) prior

	to sending the letter.
01.04 Analyze and revise the organization of workplace, community, instructional, "how-to", and informational documents, demonstrating an understanding of topic sentences, unity, coherence, and effective text divisions.	Examples of Content Required • Topic sentences • Unity • Coherence • Effective text division/paragraph structure
	Strategies • Teach concepts of topic sentence, unity, coherence, effective text divisions, and paragraph structure. • Provide students with a list of sentences in random order. Have them identify the topic sentence and arrange the supporting sentences in correct order to form a coherent paragraph. • Divide the sentences of a three to four paragraph document into separate sentences on strips of paper. Assign the students to organize the sections into logical order and then into correct paragraph formation. • Provide students with paragraphs that include irrelevant sentences. Have students analyze the paragraphs and determine which sentences are essential to the main idea and which sentences are irrelevant and should be removed. • Arrange a class project where students revise parts of the school's student handbook. • Ask each student to write a letter to the editor of the local newspaper regarding an issue about which he/she possesses strong feelings. Have students critique each letter for conventions of EAE prior to sending the letter. • Obtain a variety of workplace, community, and instructional documents. Create one document which randomly combines the sentences or excerpts from all of the original documents. Allow students to work in groups to organize and reconstruct the documents to their original form. • Obtain the directions from a piece of furniture or a bicycle that requires assembly. Remove the words that explain the assembly procedure and leave only the illustration showing the process. Have students produce a set of written instructions. Students should use complete sentences and make sure that their directions are in sequential order as depicted by each illustration.
01.05 Plan, compose, and edit different types of documents, including workplace, community, instructional, "how-to", and informational documents, correctly applying rules of mechanics, usage, sentence structure, and organization.	Examples of Content Required • Audience and purpose • Research resources • Business document rules and conventions • Proofreading • Editing • Revising
	Strategies • Teach the concepts of audience and purpose. Show students different types of text and have them discuss the author's purpose for writing the text. Have students identify

	possible audiences that the author was addressing. • Have students explore and use research resources, such as newspapers, libraries, and the Internet when developing writing projects. • Have students use sample workplace and community documents as guidelines for writing equivalent documents that address their current life situations. • Obtain real-life documents from local businesses, such as manuals, workplace policies, or instructions for using machinery or chemicals. Have students select a section of the workplace document that lacks clarity or proper usage of Edited American English (EAE). Have students edit and revise the selection. Have students analyze each writing sample and determine which is easiest to read. • Assign students to small groups. Have each group establish its own business. Assign each group to compose a workplace document (e.g., procedures for completing an application process, guidelines for proper protection while using pesticides, a policy for attendance). Have students analyze and revise each group's work. • Have students peer edit writing samples by using cooperative learning strategies.
01.06 Apply appropriate prewriting strategies to plan and organize ideas in order to compose well-organized writing samples on given topics, utilizing the rules of Edited American English (EAE).	Examples of Content Required • Prewriting strategies (brainstorming, mind mapping) • Graphic organizers
	Strategies • Provide an overview of the essay section of the GED Language Arts, Writing Test. Review the GED essay scoring rubric with the students. • Explain brainstorming and why it is useful for timed essay tests. As a class, have students complete a brainstorming activity on a specific prompt. Make sure that everyone contributes ideas. As a class, narrow the ideas to three main points or ideas. Have students develop supporting details and examples for each of the three main ideas. • Explain mind mapping as an alternative to brainstorming. As a class, complete a mind map on a specific prompt. Have students provide ideas to create three primary "bubbles" and at least three supporting details/examples for each "bubble" or idea. • Provide topics for individual prewriting practice. Have students analyze each topic individually or through group discussion. Have students identify the elements of the topic that must be addressed. • Discuss and practice organizing ideas by using graphic organizers, by developing the main idea to include in the introductory paragraph of the essay, and by combining related ideas to create the most effective organization of ideas for each paragraph. Show students how to use each type of graphic organizer through modeling the practice. • Practice time management skills in the classroom. Provide students with a specified amount of time to plan and organize essay ideas in response to a given prompt (e.g.,

	10-15 minutes).
01.07 Compose well-organized expository or "how-to" essays that clearly address given topics and develop ideas that use specific and relevant details and examples.	Examples of Content Required • Focused response to topics • Paragraph structure: topic sentence, and supporting details and examples • Essay structure • Transitional devices
	Strategies • Have students compose a "baseline" essay for measuring their progress in essay writing. • Explain the term "prompt" and show students the "prompt" format used on the Language Arts, Writing Test. Discuss the importance of developing ideas that directly address the given prompt when completing the GED essay. Have students develop their own prompts. Use these prompts in the classroom for writing practice. • Provide practice exercises for teaching students how to better understand and respond to different types of prompts, such as cause/effect, descriptive, opinion, and compare/contrast. • Review paragraph concept and structure, including topic sentences and supporting details. • Discuss the basic five-paragraph essay structure and the use of graphic organizers in the writing process. • Discuss and complete group exercises on transitional devices in order to craft more effective writing samples. • Have students practice writing five-paragraph essays in response to different prompts. Provide students with a time management goal of about 15-20 minutes for drafting a writing sample after the prewriting stage has been completed. • Pair students and have them assess each other's draft essays (peer review) and make recommendations regarding the writer's response to the prompt and essay structure or organization.
01.08 Proofread and edit expository or "how-to" essays on given topics for effective sentence structure, conventions of Edited American English (EAE), and word choice.	Examples of Content Required • Sentence structure • Conventions of Edited American English (EAE) • Word choice – clarity, descriptiveness, appropriateness, etc. • Writing style for different types of writing
	Strategies • Explain the GED essay scoring rubric for sentence structure, conventions of Edited American English (EAE) and word choice. • Identify error patterns in individual student essays and review applicable rules for correcting them, including rules for sentence structure, mechanics, usage, punctuation, and spelling. • Develop an individual "spelling list" for each student. Each list should include misspelled/misused words (including

	possessives, contractions, and homonyms) that appear in that student's essays. • Discuss writing style with the class, emphasizing varied sentence structure, appropriate word choice, and clarity of writing. • Guide students in the proofreading and editing process. Point out that on the GED Language Arts, Writing Test, students will need to edit and revise their draft, as they will not have time to rewrite an entire essay. • Suggest a time management goal of 5-10 minutes for final editing of a writing sample. • Pair students and have them analyze each other's edited essay drafts (peer editing) and propose editing changes related to correct sentence structure and Edited American English (EAE). Require that students explain and support their proposed changes. Follow up the peer review process by analyzing the essays with both students and supporting or correcting the proposed editing changes.
01.09 Revise original expository or "how-to" essays for focused response to prompt, clear and logical organization, and coherent development with relevant details and examples.	Examples of Content Required • Essay revision for focus, organization, and development • Word choice and use of varied details and examples
	Strategies • Review essays individually with each student. Refer to the GED essay scoring rubric for response to prompt, organization, and development and details. Identify error patterns related to these three evaluation criteria. • Guide students in the revision process. Show students how to revise neatly without rewriting the entire essay. Suggest a time management goal of 5-10 minutes for the structural revision process. • With student permission, read well-organized essays aloud to class. • Have students use the GED essay scoring rubric (provide this as a handout) to individually score the essays that are read aloud. Lead a group discussion regarding student feedback and have students provide reasons to support their conclusions.

Social Studies Standard

Demonstrate and apply advanced reading and visual processing skills using selections and graphics in United States and world history, geography, government, civics, and economics.

Objective/Benchmark	Examples/Strategies
02.01 Demonstrate and apply concepts of United States history through the use of advanced reading comprehension and visual processing skills.	Examples of Content Required • Beginning to 1820, native peoples, colonization. settlement, Revolution, new nation • 1800-1900, westward expansion, reform , Civil War, Reconstruction, Industrial Revolution • 1890 to present modern America, Great Depression, World Wars I and II, postwar U.S., contemporary United States
	Strategies • Have students develop time lines identifying major events in each time period (Columbus, Jamestown, Pilgrims, Revolutionary War, etc.) • Provide students with political cartoons from a variety of time periods and have them contrast different points-of-view. • Use popular films in the classroom to have students assess events (Example: Roots, Amistad, Far and Away, All the President's Men). • Have students read biographies of major historical figures from a variety of time periods and assess the individual's contributions. • Have students evaluate and contrast major Supreme Court decisions (Plessy vs. Ferguson/Brown vs. Board of Education) and relate those decisions to the mood of the society at the time.
02.02 Demonstrate and apply concepts of world history through the use of advanced reading comprehension and visual processing skills.	Examples of Content Required • Beginning-1000 B. C. (Early Civilizations) • 1000 B.C.-300 B. C. (Classical Traditions, Empires, Religions) • 300 B. C. -1770 A. D. (Trade, First Global Age) • 1750-1914 (Age of Revolutions) • 1900-Present (Urbanization, World Wars, Global Depression, New Democracies in Africa, Asia, South America, the Cold War, Global Culture)
	Strategies • Have students develop time lines identifying major events and civilizations in each time period. • Group students and have them create maps of major trade routes and assess the effect of trade route location on development of society, customs, economics, and conflicts. • Have students compare and contrast the effects of major revolutions (American, French, Russian, Industrial) on the societies of the time and today.
02.03 Demonstrate and apply concepts of civics and government through the use of advanced comprehension and	Examples of Content Required • Civic life • Politics

visual processing skills.	• American government • Foundations of the American political system • Relationship of U. S. to other nations • Role of citizens in American democracy
	Strategies • Provide students with practical documents, such as taxes, voter registrations, and political communications. Have them complete the documents and discuss their purpose and necessity. • Choose a current issue that is important to local politics and have students evaluate political advertising, editorials, and letters to the editor. Students may wish to draft their own letters supporting their personal viewpoint. • Lead students in a discussion that contrasts the relationship of the U.S. to other nations throughout a variety of historical periods, including: pre and post WWI, pre and post WWII, Cold War, and pre and post Vietnam era.
02.04 Demonstrate and apply concepts of geography through the use of advanced reading comprehension and visual processing skills.	Examples of Content Required • World in spatial terms • Places, regions, and physical systems • Human systems • Environment • Uses of geography
	Strategies • Introduce and review the continents of the world and discuss the people, political structure, weather, and geographical points of interest. Supplement the discussion with PBS videos and photographic journals. • Introduce and review geography vocabulary through games and puzzles. • Discuss the impact of the environment on the human system. Example: heat waves and excessive dryness can cause brush fire damage. Have the students research examples of identified environmental issues in the newspaper and on the Internet.
02.05 Demonstrate and apply concepts of economics through the use of advanced reading comprehension and visual processing skills.	Examples of Content Required • Economic reasoning and choice • Comparison of economic systems • Free enterprise system • Production • Consumers • Financial institutions • Government's role in economy • Labor and the economy • Global markets • Foreign trade
	Strategies • Have students review the finance section of a local newspaper. Students should look at stock prices and current

	interest rates. Explain the concept of supply and demand in everyday life. Example: Use the newspaper to locate articles on gas prices and other high-demand products. Demonstrate high demand = higher prices. High demand = jobs = good economy. Discuss the importance of balance in an economy and what happens when prices go excessively high or low. • Introduce students to the concept of interest and the national debt. Discuss the Federal Reserve and its' role in the economy. Have the students relate this information to their own bank account, interest rates, and a potential home purchase or existing mortgage costs. • Introduce students to the concepts of a global market and foreign trade by having them price compare items purchased at a local store, one item made in America and a similar item made in China. Have the students discuss if there is a price difference and if so, why. Have the students research where each item was made and what the economy or daily life is like in the country of production.
02.06 Understand, interpret, analyze, evaluate, and critique visual stimuli or graphics such as political cartoons, advertisements, diagrams, photographs, drawings, timelines, maps, graphs, charts, and tables from a variety of sources and determine effects of presenting visual data in different ways.	Examples of Content Required • Newspapers • Periodicals • Books • Internet access
	Strategies • Have students locate editorial cartoons in newspapers and political magazines (Time, Newsweek and/or Weekly Standard). Have the students present their "cartoon of the day" to the class. • Obtain various articles on the same topic. Have students explore the compare and contrast the different points-of-view. • Group the students into two or three person teams and assign each group an Internet scavenger hunt to establish a time line in history. Example: Place the following events in the correct timeline order - Revolutionary War, Benjamin Franklin, Spiro Agnew, John Hancock, Spanish-American War. This activity can be used in other content areas where a timeline will assist students in connecting an event to a specific time period. • Create a literacy center that includes various media such as photo journals, newspapers, atlases, local maps, and encyclopedias. Post a historic time line and create a word wall of social studies vocabulary words. If possible, provide access to the Internet for the students. Have the students assist in creating the time line and word wall as they encounter new words and new events. Encourage the students to spend at least twenty minutes a day in the literacy center.
02.07 Determine the implications, effects, and the value of a historical document such as the Declaration of Independence, the U.S.	Examples of Content Required • Declaration of Independence • Federalist Papers • U.S. Constitution • Historic speeches and documents

Constitution, Federalist Papers, landmark Supreme Court cases, and significant historical political speeches.	• Landmark Supreme Court cases Strategies • Discuss the Bill of Rights and its implications on present day liberties. Divide the class into teams. Have each team evaluate an amendment and the effect it has on our present life. Have teams provide an example of their amendment in action. Students may wish to locate real-life examples of each amendment in the newspaper. • Have students analyze the effects of landmark Supreme Court cases on the people and the country. Divide the class into groups. Have each group research a landmark Supreme Court case and report on the implications of the case in today's world. Example: Miranda rights when arrested. • Discuss Dr. Martin Luther King's "I Have a Dream" speech and the climate of our country during the time of the Civil Rights Movement. Students may wish to listen to an audio recording of the speech and discuss the impact that the speech had on the Civil Rights Movement. • Assign each student a particular historical event, speech, or document. Create a timeline and have the students discuss the value of their piece to the development of our country and its present day implications. Display each piece as part of the timeline. • Use www.cr.nps.gov/nr/travel/civilrights/ka1.htm and http://library.thinkquest.org to access historical documents for class discussion and research.
02.08 Restate information, summarize ideas, identify implications, and make inferences from a social studies selection.	Examples of Content Required • American history selections • World history selections • Civics and government selections • Maps, charts, and graphs • Editorial cartoons • Editorials Strategies • Have students summarize and present a social studies selection to the class discussing the significance of the passage to our country's history. Examples: Emancipation Proclamation, Vietnam War, Watergate). • Have students listen to audio and video tapes from the History Channel. Pair students and have them summarize the main points of the tape and report their findings to the class. • Divide students into groups. Discuss a major event or time period in history. Have students read a social studies passage regarding the discussion and have them identify the main idea and key thoughts. Students should look for clues to make accurate inferences and conclusions. • Divide students into pairs. Identify and discuss maps, charts, and graphs within a social studies selection. Have students develop a GED-type question on their graphic. Students should exchange their questions with others. Discuss whether or not correct conclusions were obtained. • Have students bring editorial cartoons to class. Create a wall

	of events depicted by the cartoons. Discuss the different points-of-view, symbolism, and inferences shown by the cartoons. • Locate current legislation through the Internet or newspaper. Have students track bills as they go through the legislative process. Students should create a log summarizing the key points of the legislation. • Have students watch videos that highlight major events in U. S. and World History. Examples: Underground Railroad, The Attack in Pearl Harbor, the Assassinations of John F. Kennedy and Martin Luther King. Pair students and have them develop a short summary of the video. Have students share their thoughts with the class. • Discuss American involvement in conflicts over time. Divide the class into small groups and assign each group a conflict or war that they will research. Have students create a picture book or timeline of the major battles or important dates. Post the students' work in the classroom. • Implement the editorial cartoon of the day. Access cartoons from newspapers, magazines, or Internet sites such as Cagle.com at http://cagle.msnbc.com/. • For articles and research on American History, access www.memory.loc.gov/ammem/ndlpedu/lessons/01/map/.
02.09 Identify generalizations, principles, or strategies in a social studies selection and apply the concepts to new situations.	Examples of Content Required • American history selections • World history selections • Civics and government documents • Maps, charts, and graphs • Newspapers • Workplace and community documents
	Strategies • Have students read specific Constitutional Amendments. Have them identify an application of the Amendment to a current event. • Discuss major interest groups and lobbyists. Identify their influence on public policy and its effect on the community. Example: Mothers Against Drunk Drivers (MADD). Have students identify a current issue that has raised the awareness of the public. • Discuss the different forms of government. Have students apply these differing concepts of governance to operating a business or family dynamics. • Discuss the role of economics in one's daily life and the concept of supply and demand. Have students identify how supply and demand affect them. Examples: housing shortages and the cost of purchasing or renting a home or gasoline prices and events in the world. • Have students compare and contrast national security before and after September 11, 2001. Students should include in their discussion how security has changed the workforce (computer hackers, identity theft, airline travel). Have students create a list of ideas to assist in keeping the public safe.

02.10 Describe historical context, distinguish fact from opinion, recognize unstated assumptions and logical fallacies, identify cause and effect relationships, compare and contrast points of view, and recognize information designed to persuade an audience in a social studies selection.	Examples of Content Required • Slogans • Videos, cassettes, DVD's of political debates and speeches • Letters to the editor • Editorial cartoons • Historical documents and speeches • Articles, editorials, and current events from newspapers and magazines
	Strategies • Explain unstated assumption and logical fallacy. • Have students assess what significant historical events influenced the design of the Bill of Rights. • Have students work in pairs and locate newspaper articles that deal with each of the first ten amendments and share with the class how the article supports the amendment in today's world. • Arrange for students to watch a video of a political speech. Have students analyze the speaker and the presentation for subtleties in appearance and gestures used as persuasive tactics. • Have students read the transcript or listen to a cassette of a political speech and analyze the verbiage designed with intent to persuade. • Assign students to critique letters to the editor from a local newspaper comparing and contrasting writers' points of view on a controversial topic. • Assign students to research a controversial issue in the news about which they have an interest. Have them compose a letter to the editor of the local newspaper. Prior to sending the letter, have students edit and critique each other's letters. • Assign students to read a world affairs newspaper article and produce a list of unstated assumptions in the article. • Extract a random variety of paragraphs from several sections of a local newspaper for students to assess the passages as facts or opinion • Collect editorial cartoons from a variety of newspapers and magazines. Interpret editorial cartoons and have students categorize the cartoons as local, state, national, or international issues. • Collect graphs, tables, and charts from such sources as USA Today, Time, or Newsweek. Have students interpret the information and draw conclusions about the information. • Explain the purpose of and how to interpret a timeline. Group students to construct time lines using the important events from several historical periods. • Use www.cagle.com for editorial cartoon analysis. • Interpret charts and graphs of sales data from local or national companies. • Use www.pbs.org/weta/reportingamericaatwar/.
02.11 Assess the accuracy of facts, the appropriateness of generalizations and conclusions,	Examples of Content Required • Historical documents • Supreme Court decisions

and recognize the role that differing points of view, values, beliefs, and convictions play in historical accounts.	• Political speeches and debates • Editorials • Newspaper and magazine articles
	Strategies • Define generalization, conclusion, value, and conviction. • Have students evaluate how generalizations and conclusions are formulated in everyday life. • Assign students to read historical passages and produce instances of generalizations. In the same passages, have students choose the conclusions. • Assign students to read passages from the Civil War period written from the point of view of a northern businessman, a southern plantation owner, a slave, a union soldier, and a confederate soldier. Have students evaluate and validate the values, beliefs, and convictions of each individual. Use www.memory.loc.gov/ammem/tcrhtml/. (This strategy could easily be utilized with points of view from World War II or the Vietnam War.) • Divide students into groups. Assign each group to represent a specific person involved in a historical event (e.g. Viet Nam War era soldier who was drafted, draft dodger who fled to Canada, Kent State University student, National Guardsman) and as a group, write three paragraphs detailing their values, beliefs, and convictions. • Use the following sites as research for Supreme Court decisions, timelines, and Constitutional issues: o www.loc.gov/exhibits/brown/ o www.ed.gov/free/constitution/index.html o www.loc.gov/rr/program/bib/ourdocs/Constitution.html
02.12 Describe the legal and ethical rights and responsibilities of an employee, an employer, and a citizen.	Examples of Content Required • Consumer information • Voters' guides • Atlases • Tax forms • Budget graphs • Political speeches • Almanacs • Statistical abstracts • Contracts • Credit applications • Advertisements • Want ads
	Strategies • Provide students with practical documents dealing with such topics as contracts, credit applications, business transactions, and advertising. Have students complete the documents and/or evaluate how they are used in daily life. • Create a list of possible interview questions. Include questions which are appropriate, as well as some which are inappropriate for a job interview. Provide the questions to the students. Have them identify which are appropriate and which

	are inappropriate and why. Discuss why certain questions should not be asked in an interview. • Assign each student to locate a job in the classified ads and set up mock interviews with students acting the role of both employer and employee. • Have students research OSHA and identify the role OSHA plays in the workplace. • Have students evaluate the positive and negative aspects of workman's compensation. Have students role play the positions of the employer, an injured employee, an insurance representative, and a lawyer in a mock mediation. Each student must validate his/her position. • Have students compare and contrast employee manuals from different places of employment and evaluate their appropriateness for the job. • Have students identify persuasive techniques used in advertising (words, pictures, actors, models, timing, medium, audience) and evaluate the effectiveness these techniques have on the general public. • Ask students to bring to class a variety of product labels and assess why certain information is printed on them. • Have students access the U. S. Consumer Information bureau in Denver, Colorado and list the types of information they can access through the governmental service. • Discuss how interest rates, late charges, and other fees are calculated on credit cards and analyze the influence they have on prices and consumers. • Discuss the purpose of a contract, explaining such terms as litigious and how a litigious society affects the employer, employee, and consumer. • Locate examples of cases in newspapers or magazines that demonstrate how being a litigious society affects employer, employee, and consumer.

Science Standard

Demonstrate and apply advanced reading and visual processing skills as outlined by the National Science Education Standards, using selections in biology, chemistry, earth science, space science, physics and environmental and health topics.

Objective/Benchmark	Examples/Strategies
03.01 Interpret and apply scientific concepts through the use of advanced reading comprehension and visual processing skills in a physics or chemistry selection.	Examples of Content Required • Structure of atoms • Structure of properties of matter • Chemical reactions • Motions and forces • Conservation of energy and increase in disorder • Interactions of energy and matter • Graphs, charts, and diagrams • Periodic table • Chemical formulas, chemical bonding, and chemical equations • Newton's laws of motion
	Strategies • Have students use graphic literacy in real-life situations in the areas of physics and chemistry through using different graphic displays, such as reading meters, installing equipment, using periodic tables. • Have students identify a common product that they use in the home, such as weed killer, and research the risks versus the benefits of using the product. • Teach students how to recognize the characteristics/families of elements listed on the periodic table. • As a class, discuss the safety reasons for having fuses and circuit breakers in basic household wiring, automobile wiring, flashlights, and power lines. • Brainstorm real-life examples of the laws of physics as viewed in daily life, such as why one should wear a seat belt, why coffee spills when one stops suddenly, or why a grape and an orange that are dropped from the same height and at the same time, land at the same time. • Teach students pre-, during, and post-reading strategies, such as TIPP? and GIST. • Have students evaluate cause and effect situations through careful reading, using context clues, definitions, and equations found in the reading selection.
03.02 Interpret and apply scientific concepts through the use of advanced reading comprehension and visual processing skills in a life science selection.	Examples of Content Required • The cell • Molecular basis of heredity • Biological evolution • Interdependence of organisms • Matter, energy, and organization in living systems • Characteristics and behaviors of organisms • Heredity • Punnett Square

	Strategies • Have students apply pre-reading strategies appropriate to a scientific text, such as making predictions, brainstorming, generating questions, and skimming and scanning to anticipate content, purpose, and organization of a reading selection. • Have students diagram the stages of the life cycle for a human disease-causing organism. Students should explain their diagram to the class. Post the diagrams in the classroom. • Have students compare and contrast cells with different functions using real-life examples. Students should use an appropriate graphic organizer, such as a Venn Diagram. • Provide students with a chart of the different classifications of organisms. Divide the class into teams. Prepare questions that can be answered only by locating the organism on the chart. Have students compete to see who can be the first team to locate the organism's classification. • As a class, discuss real-life situations of biotic and abiotic factors, such as the impact of an oil spill (abiotic) on marine life (biotic) and possible outcomes on other segments of the environment. • Review a chart, discuss and have the students apply the concepts of dominant and recessive genetics to themselves as they figure out if their genetics are dominant or recessive. • Discuss the mechanisms and/or actions that facilitate biochemical reactions in the body as well as the role of DNA in the production of cell proteins. Have students research biochemical reactions and report their findings to the class.
03.03 Interpret and apply scientific concepts through the use of advanced reading comprehension and visual processing skills in selections from earth and space science.	Examples of Content Required • Energy in the earth system • Geochemical cycles • Origin and evolution of the earth system • Origin and evolution of the universe • Ecology • Geology • Meteorology • Oceanography • Paleontology • Solar system
	Strategies • Have students locate articles in the media that deal with the effects of current agricultural practices and urban development. • Have students explore NASA's website and identify a specific point of interest to report to the class. A section of the NASA website to explore is: www.imagine.gsfc.nasa.gov/docs/science. • Show students pictures of natural occurrences, such as glaciers, earthquakes, and volcanic activities. As a class, discuss why these natural phenomena occur and how they change the earth's surface.

	• Have students locate different surface features of the earth using topographical maps. • Teach students how to use basic scientific tools, such as a telescope, to explore the different planetary and star systems. • Take students on a field trip to visit an observatory, planetarium, or space museum. Such visits assist in expanding a student's knowledge of earth science, such as the ability to view a meteorite or moon rock or to experience different scientific phenomena.
03.04 Understand and comprehend the planning and conducting of investigations using appropriate tools and techniques, analyzing evidence, constructing explanations, and communicating scientific arguments.	Examples of Content Required • Physical, life, and earth and space science • Methods and tools for data analysis • Communicating scientific arguments orally and in writing • Scientific method • Charts, tables, graphs, and diagrams
	Strategies • Have students research a living organism that no longer inhabits today's world and identify the reasons for the organism's extinction. Discuss the theory that supports the survival of the fittest. • Discuss the impact of today's environment on current living organisms, such as pollution, the green house effect, overpopulation, and disease. Divide the class into two teams. Have each team take a position on a specific issue, such as pollution. Have the students debate the reasons for the problem and possible solutions. Document the students' reasons and have them check the validity and accuracy of each reason. Students should identify each reason as a fact or opinion, as well as whether the rationale used provides a strong or weak argument for the solution. • Have students collect science articles and graphics from local newspapers. Use the different articles and graphics as daily discussion items to connect science to real-world situations. • Explain to students how different theories have been developed to explain how surface features have been formed, such as the Ice Age Theory being responsible for the formation of the Great Lakes region and the Grand Canyon and the Plate Tectonics Theory being responsible for the formation of mountains and glaciers. • Have students hypothesize what climatic changes may have occurred to produce specific ages, such as the Ice Age and the potential age resulting from the green house effect. • Record product commercials, such as those for medicine or a car's fuel efficiency. Have students listen to a commercial and identify those statements that are fact versus those that are opinions. • Show students how to use the Internet as a tool to assist in the research of scientific topics. Have students write a short essay on a scientific topic of interest to them using information they have obtained through an Internet search.

03.05 Assess and evaluate information about personal and social issues in science such as health, environmental concerns, and challenges in science and technology.	Examples of Content Required • Charts, graphs, tables, and diagrams • Community environmental and health documents and brochures • Natural resources • Community health • Natural and human-induced hazards • Environmental issues
	Strategies • Have students identify a natural or human-induced hazard in their community and report how it has affected their environmental quality. • Identify a specific health issue, such as high blood pressure. Have students use information from health journals or materials obtained from physicians' offices to make informed decisions regarding the health issue identified. • Have the class create and prepare a timeline that shows the history of medical treatments for specific diseases. • Develop a list of federal and state health and safety laws and regulations. Discuss why such laws and regulations are necessary for health and safety in the workplace and the community. • Have students create posters on how to maintain a healthy lifestyle, such as exercise, controlled diet, good mental health, and health monitoring and screening activities. • Divide the class into two teams. Have the teams debate the value of protecting the environment versus the economic impact of those decisions. Have one team be composed of the environmentalists and the other team the business community. List the arguments provided by each team. As a class, discuss a compromise to the issue. Have students identify how natural resources can be protected and used at the same time. • Recognize need for staying up-to-date with basic scientific knowledge regarding one's personal health and new findings regarding cures for certain diseases. • Have students track the spread of a disease, such as AIDS, historically and globally. • Bring science journals and newspapers to the classroom. Have students find an article on a new finding regarding a cure for a disease or a new technology that has been developed in the area of science.
03.06 Understand, interpret, analyze, evaluate and critique visual stimuli such as diagrams, photographs, drawings, maps, graphs, charts and tables from a variety of sources.	Examples of Content Required • Graphs, charts, maps, diagrams, photographs, tables, and drawings • Different types of manuals, such as technical, how-to, safety, and product manuals • Newspapers, magazines, videos, and DVDs
	Strategies • Provide students with topographical maps and have them locate information regarding latitude/longitude, altitude, and different types of topographical elements, such as mountain

	ranges, lakes, rivers, and deserts. After students are able to locate basic information, divide the class into teams and play “Where Am I?”. Give each team a description of a location, such as its latitude/longitude, and see which team is first to identify the correct location. • Use graphics and process diagrams to install a ceiling fan, replace fuses/circuit breakers, insert timers onto the electrical system • Read labels that provide warnings regarding combining certain elements that can result in a caustic mixture, such as combining ammonia and chlorine bleach, different types of fertilizers, household chemicals, etc.
03.07 Apply basic scientific rules from the reading of materials and the interpretation of visual graphics and predict possible outcomes using the scientific method.	Examples of Content Required • Charts, graphs, diagrams, and tables • Local, state, national, and international environmental reports and studies • Scientific and medical journals and articles • Community resource materials and brochures • Newspapers, magazines, videos/DVDs • Scientific method
	Strategies • Have students predict the effect of ecological change on an environment, such as why cities may increase or decrease in population due to climate, weather factors (hurricanes, tsunamis, floods), pollution (factories, smog), and migration. • Provide students with graphs that are produced in scientific reports, as well as in flyers, regarding products and their possible effects, such as the latest medicine for depression and its possible side-effects. Have students create a thirty to sixty second commercial on their product and present their findings to the class. • Have students identify an environmental problem in their community. Have students apply the scientific method to hypothesize possible solutions to the problem and possible outcomes through the implementation of such solutions. Example: During the dry season, a community shows excessive water consumption. • Have students create a list of the different scientific resources in their community that can be used to solve local environmental problems.

Language Arts, Reading Standard

Demonstrate and apply advanced reading skills using selections in various literary genres, including fiction, non-fiction, poetry, drama literary forms, nonfiction prose, as well as workplace and community documents.

Objective/Benchmark	Examples/Strategies
04.01 Restate, paraphrase, explain, and summarize main ideas in a text selection.	Examples of Content Required • Non fiction texts • Fiction texts • Differentiate between the main idea of a reading selection and the supporting details
	Strategies • Option 1: Divide the class into four groups. Give each group a different edition of the local newspaper. Have each group choose and read an informational article of interest. As a small group, have the students restate the main idea and list a few incidental details. Each small group should share their summary with the group at large. • Option 2: Have students go to the Internet and read news articles or blogs on: o ABC.com o CBS.com o CNN.com o NBC.com o NPR.com Use the same discussion format as in Option 1. • Option 3: Using free podcasts, have students choose and listen to an episode of the: o CNN The Ali V podcast; o NPR Talk of the Nation episodes podcast; o Science Friday podcast; o Escape Pod Science Fiction Magazine, or o The Wizard of OZ podcast. Use the same discussion format as in Option 1.
04.02 Differentiate conclusions from supporting details and recognize unstated assumptions.	Examples of Content Required • Newspapers • Magazines • Editorials • Speeches • Visuals • Biographies/autobiographies • Business documents • Poetry • Dramas • Prose fiction
	Strategies • Define conclusion, supporting detail, and unstated assumption. • Describe a real world situation to students, tell them all of the supporting details, and have them draw a conclusion as to what you are describing. Example: Traffic is stopped and

	starting to back up. You see two police cars, a fire truck, and an ambulance speed by. What do you conclude? • Obtain a real world document (e.g., an employee manual, school handbook, newspaper or magazine article). Separate paragraphs into individual sentences. Assign students to work in pairs to identify the supporting details. Next, have the pairs of students arrange the paragraphs in order and determine a conclusion to the passage. • Select a newspaper article about an on-going court trial or a police investigation. Assign students to extract supporting details about the case, draw conclusions about what could happen next, and make predictions about the final outcome. • Arrange a mock trial. Students volunteer for roles: defense/prosecuting attorneys, defendant, jury, judge, two newspaper reporters (one sympathetic to the defense/one in favor of prosecution); and witnesses. Lawyers and witnesses present supporting details of the case. Jury draws conclusions. Entire class assesses unstated assumptions in the process of the trial. This lesson could also be used in conjunction with a social studies lesson, benchmarks 2.10 and 2.11. • Critique editorial cartoons. Identify supporting details in the cartoons and formulate the conclusion. Identify the unstated assumptions. One resource to use is Cagle.com at: www.cagle.com. • Assess a passage from an employee handbook for unstated assumptions. • Distribute to students the title of a reading passage or the headline of a newspaper article. Have them predict what the story is about. Assign students to formulate a list of possible supporting details. Then, read the passage or article and compare their lists to the actual article.
04.03 Transfer and synthesize concepts and principles from one reading selection to a new context.	Examples of Content Required • Fiction • Nonfiction • Poetry • Drama • Workplace and community documents
	Strategies • Contrast two selections such as Taming of the Shrew/Ten Things I Hate About You; Emma/Clueless; Pygmalion/My Fair Lady; Romeo and Juliet/Westside Story. Assess changes from the earlier work to the modern work. Students may wish to use a compare/contrast graphic organizer for the project. • View “League of Extraordinary Gentlemen”. Identify the main characters and the novels from which each character was chosen; then, compare and contrast one character as portrayed in the film to the original work • Rewrite a short passage from an early literary period using modern language. Evaluate the effects of language changes.

04.04 Assess and evaluate visual and graphic text.	Examples of Content Required • Extrapolate information from visual and graphic sources. • Editorial cartoons • Graphs • Art work • Photographs
	Strategies • Option 1: Have students bring in graphic statistics taken from a local newspaper or nonfiction magazine. In small groups have students discuss the conclusions that can be made from the graphics they chose. Have each small group pick one significant graphic to share with the large groups. • Option 2: Bring in editorial cartoons throughout the week about the same topic. Assign the cartoons in chronological order (optional). Have students discuss the cartoons in pairs. Then have each pair create their own editorial cartoon on poster board. You may also let students create their own carton at: http://www.makebeliefscomix.com. • Option 3: Have the group do a survey and collect the data concerning of one of the following: o Immediate family touched by cancer o Smoker/non smoker o Blue eyes/brown eyes o Gum preference Have small groups create graphs depicting the data collected. Share the results with the large group. • Option 4: As an instructor, access free podcasts from one or more of the following sources and share with the class: o New Yorker cartoon o National Geographic o Quest (KQED) o Scripps Institute of Oceanography Podcast o Museum Tours
04.05 Draw conclusions, judge consequences, and formulate inferences from reading selections.	Examples of Content Required • Fiction, • Nonfiction • Poetry • Drama • Workplace and community documents
	Strategies • Use business documents such as insurance policies or lease agreements. Have students use critical reading skills to draw conclusions based on the materials. Create if/then statements to formulate inferences related to lease or policy information. • Have students identify fallacies in arguments found in editorials and letters to the editor in order to determine if the selection contains valid or invalid conclusions. • Divide the class into two separate groups. Provide students with an editorial cartoon or a sample of a political advertisement. Indicate whether a group is for or against the opinion stated in the reading sample. Have each group

	create a thirty second advertisement to support or refute the ideas of the editorial cartoon or political advertisement. • Provide students with samples of editorial cartoons and advertising from different time periods. Have students formulate inferences about the values of the society during the time period represented.
04.06 Appraise and assess elements of style, organizational structure, and literary techniques in a variety of reading selections.	Examples of Content Required • Nonfiction • Criteria reviews of the arts • Workplace and community documents
	Strategies • Have students interpret the overall tone, point-of-view, style, and purpose of a work. • Have students evaluate tone by identifying moods expressed by adjectives and adverbs within a selection. • Have students identify first, second, or third person point-of-view in literary and business documents such as readings from an employee handbook or contract/lease agreements. • Provide students with a short reading passage. Have them rewrite the passage changing the point-of-view and evaluate the effect of the change. • Discuss literary devices and have students identify simile, metaphor, personification, hyperbole, and onomatopoeia in literary works. • Have students assess organizational patterns by identifying relationships between and within sentences and organizational patterns of paragraphs and passages. Students should list transitional words and phrases that they find for major organizational patterns such as listing, addition, cause and effect, comparison, contrast, time, process, definition, generalization, example, summary, clarification, classification.
04.07 Relate and synthesize information from outside sources with elements and information from a provided reading selection.	Examples of Content Required • Biographies and autobiographies • Newspapers • Magazine articles • Editorials • Speeches • Visuals and graphics • Business documents • Poetry • Drama
	Strategies • Have students compare and contrast what they already know about a topic, such as global warming, to varying points of view in editorials and articles found in newspapers and magazines. Use such resources as USA Today, the local newspaper, or Internet resources such as www.newsweek.com, www.msn.com, or www.nytimes.com. • Read a poem aloud to the class. Have students identify the

	different types of figurative language and write them on chart paper. Assess the poem for a rhyme scheme or alliteration. Have students relate their interpretations of the poem. Discuss how each person's background of experiences influences his/her interpretation of the poem. • Have students identify job skills they have assimilated from past work experiences. Read an excerpt from an employee handbook. Evaluate how prior knowledge and newly acquired information synthesize into transferable work skills. • Have students evaluate graphs and charts of current business trends, such as in the automobile industry, and incorporate their knowledge of fluctuating gas prices, the economy, and terrorism to gain insight in order to predict future changes in the industry. • Read a drama selection or perform a "reader's theatre" in class. Between each act, have students evaluate how their perceptions of the ending changes as the drama unfolds, and new information is revealed to them

Mathematics Standard

Demonstrate advanced mathematics skills in number operations and number sense; measurement and geometry; data analysis, statistics, and probability; and algebra, functions, and patterns.

Objective/Benchmark	Examples/Strategies
05.01 Perform, analyze, and apply basic operations to whole numbers, fractions, decimals, percents, ratios, and proportions in real-world and problem-solving situations.	Examples of Content Required • Whole numbers • Fractions • Decimals • Percents • Ratios • Proportions
	Strategies • Have the class plan a fictional or real "in class" party. Make a list of paper items that will be needed (e.g., cups, plates, silverware, and napkins). Using a grocery store newspaper insert, have students use basic operations to determine how many packages of cups, plates, silverware, and napkins will be needed. Have students determine the cost of all purchases and the cost per person to buy the paper goods. Determine how many paper goods will be left over. • Have the class plan a menu for a fictional or real "in-class" party. Use recipes that students bring from home or go to foodnetwork.com and look for recipes that call for fractional measurements. Determine how to increase or decrease a recipe to fit the number of people attending the "in-class" party. • Request that students bring in clean, empty food boxes and containers with price labels attached. Review the measurement of the contents of the containers in small groups. Determine the cost per ounce of various products. Compare the cost of similar products whenever possible. • Have students create a dinner menu using the empty box products. Students should determine how much each meal would cost per person and compare this cost per person with a fast food menu. • Create a problem-solving lesson that has students collect data on the percentage of students having one, two, or three pockets on their pants. On a white board, create ratios based on the pocket data.
05.02 Recognize, represent, order, and apply equivalencies and order relations for whole numbers, fractions, decimals, integers, and rational numbers in real-world and mathematical problem situations.	Examples of Content Required • Whole numbers • Fractions • Decimals • Integers • Rational Numbers
	Strategies • Divide the class into two teams. Play "Equivalent E-Harmony.com." Name one team the "Fractional Singles" and the other team the "Lonely Singles." Have the "Fractional" team write common fractions on their index cards. Complete

	this activity as a group, so everyone has a different fraction on his or her index card. Have the teams mix. Instruct each "Fractional" team member to pair with a "Lonely" member. Let the students get together in pairs and figure out the decimal and percentage form of their fraction. Finally, have the pairs present their fractions to the whole class. Divide the pairs so that half of the class presents their fractions from greatest to smallest and the other half presents their fractions from smallest to greatest. • Have the class form a human number line that includes positive and negative numbers. • Pair students. Send the students on a web quest to the weather site of MSN.com and have each pair go to Alaska, Iceland, or Greenland. Have students list the names of the cities from the coldest city to the warmest on the day of the assignment. The website for Alaska is: http://weather.msn.com/region.aspx?wealocations=Alaska.
05.03 Apply estimation and mental mathematical skills to solve problems and assess the reasonableness of an answer.	Examples of Content Required • Estimation skills • Problem-solving skills
	Strategies • Have students create a "Sim Life." Use newspapers, computer web sites, and real estate magazines for resources. Have students determine the following: o Where they want to live. o What type of house they want and its cost. o How much monthly homeowner's insurance costs. o What kind of car they want to drive and its cost (include interest and determine monthly payments). o How many miles a month they will drive, including the car's mileage and monthly fuel bill. o How much car insurance costs each month. o How much they want to spend each month on clothes. o How much they will spend each month on food or eating breakfast, lunch, and dinner at a restaurant. o How much an average monthly electric bill costs. o How much monthly medical insurance costs. o How much annual dental bills cost. • From this data, have students estimate how much income is required annually to support their "Sim Life." • Expand the "Sim" exercise and have the students go on-line to http://www.floridawages.com/eds.php and look up the salary histories of jobs in which they are interested and find the ones that can support the "Sim Life" that they created.
05.04 Apply standard and metric measurements and geometric concepts and formulas involving length, area, perimeter, volume, capacity, weight, and mass.	Examples of Content Required • Standard measurement • Metric measurement • Geometric formulas o Length o Area o Perimeter

	o Volume o Weight o Mass
	Strategies • Create a three-dimensional home or room out of heavy card stock. Have each student create a blueprint of a small dream house or a fancy bathroom, garage, or kitchen. Next, have the student create the home using poster-size card stock. The student should decide how much carpet or flooring is needed in the room by measuring area. • Use a variety of flower vases and water. Assign teams to each vase and have them determine the vase's capacity/volume and mass. • Have students measure desks and/or tables in the classroom using both standard and metric measurement. • Assign students to small groups. Have each group measure the length, perimeter, and area of the classroom. Students should use both metric and standard measurements. Have each group report their measurements and compare them to the measurements of other groups. Discuss reasons for any variance. • Instruct students in small groups to measure the volume, capacity, and mass of a box of oatmeal. Students should use both metric and standard measurements. • Divide students into small groups. Have them measure with a protractor the angle of each corner that they can find in the classroom (e.g., desks, walls to floors, and door jams). Have students report their measurements and the type of angle for each.
05.05 Understand, analyze, interpret, and modify two-dimensional and three-dimensional geometric figures	Examples of Content Required • Two- and three-dimensional geometric figures • Perpendicularity • Parallelism • Congruency • Similarity • Translations • Rotations • Comparison/contrast • Angle measurement
	Strategies • Provide students with "geo-boards" to use for the following activities. Geo-boards are 12" x 12" boards with nails embedded every square inch or a specified distance. Rubber bands can be manipulated around the nails to create geometric forms. Have each team use the "geo-board" and a protractor to model and visualize the concepts of: o Perpendicularity o Parallelism o Congruency o Similarity o Translations and rotations

	• Have students compare and contrast different types of geometric figures by predicting the impact of changes in linear dimension on the perimeter and area of the figures. • Have students determine, calculate, and manipulate angle measurements that are found within different geometric figures.
05.06 Analyze, interpret, and draw inferences from tables, charts, graphs, scales, and gauges to identify mathematical relationships.	Examples of Content Required • Tables • Graphs o Line graphs (plotting three or more sets of data) o Bar graphs o Pie Charts • Scales • Gauges
	Strategies • Utilize an "in class" data collection table of students' favorite singers on the current "American Idol" or favorite dancers on the current "Dancing with the Stars" television show and have students represent the data in a bar graph format. • Have each student select three stocks from the newspaper (e.g., Proctor & Gamble, Toyota, Johnson & Johnson, GE, Apple, Dell, E-Bay). Students should plot the data for a month and then use the data to create a line graph that compares and contrasts the three companies. • Utilize an "in class" data collection of the number of pockets students have in their pants (one, two, or three pockets). Have students create a pie graph of the results. • Have pairs of students study the stock market section of the newspaper. Have students create a visual graph to plot the data and determine a portfolio of stocks that they predict will increase in price. • Have each student go on a web quest and take a vacation. Have students select a vacation spot and find out how far the destination is from their home and how long it will take them to get to the destination without speeding. • Provide newspapers that have commodity prices for oil, wheat, corn, soybeans, oranges, or sugar. Have students research where the crops are raised and approximately how many bushels can be harvested per acre. Each student should then decide to buy x number of acres on an imaginary farm. Students should determine how much profit could be made per bushel and how many bushels the farm could potentially produce. Remind students that seeds, pesticide, labor, and delivery costs reduce the profit of a crop. • Bring in a mercury thermometer, an outdoor thermometer, a tire gauge, a set of kitchen scales, or any other type of scale, meter, or gauge. Have students practice reading these instruments.
05.07 Understand, correctly apply, and calculate measures of central tendency (mean, median,	Examples of Content Required • Mean • Median

and mode) and analyze the effect of changes in data on these measures.	• Mode Strategies • Provide students with newspapers and/or magazines and ask them to find examples of mean and median. • Ask students to go through the classified advertisements and to collect five different salaries (either hourly or yearly) for three given occupations. Have students calculate the mean, median, and mode for the selected salaries. • Take students to a computer lab and allow them to research occupations at O*NET Online at http://online.onetcenter.org/find/. Have students collect data on selected occupations and salaries. Ask students to calculate the mean, median, and mode. Insert one new piece of data into the list (on the high or low end) and have students examine how that piece of data impacts mean, median, and mode. • Invite a local real estate associate to visit the class and discuss median housing costs in the area. Divide the class into small groups. Have each group collect five advertisements on local homes that are for sale near that median price. • Discuss why "median" is used when discussing home prices or salaries. Have students discuss the pros and cons of using median rather than mean or mode.
05.08 Make predictions that are based on experimental or theoretical probabilities including listing possible outcomes; calculate theoretical probabilities of certain events.	Examples of Content Required • Theoretical probability • Experimental probability Strategies • As a class, discuss what "probability" means. • Examine the differences between theoretical probability (what *should* happen) with experimental probability (what *does* happen). • Ask students to find examples of theoretical and experimental probability in the newspaper or online at a news site. • Have students explore and discuss how predictions are used for weather forecasts. Students may wish to cut out the weekly weather forecast from the local newspaper and compare the actual weather outcomes for each day to the predicted forecast. • Give each student one die. Have students list the possible outcomes and discuss the theoretical probability of each one. As a class, theorize which number is most likely to occur. Have students test their predictions by rolling each die 25 times and recording the results. Compile the class data and explore why the theoretical probability was/was not accurate. • Discuss the "Pick 3" lottery. Assist students in creating a tree diagram to list the possible outcomes. Identify which outcomes are identical to others in the diagram. (e.g., 012 is the same as 021, 102, 120, 201, and 210.)

05.09 Interpret, compare, and contrast different sets of data on the basis of measures of central tendency and dispersion (range and standard deviation).	Examples of Content Required • Mean • Median • Mode • Range • Standard deviation
	Strategies • Present students with two sets of data regarding home sale prices in two areas (town A and town B). Assign groups to calculate the mean, median, mode, and range of each data set. Examine which parts (if any) are similar and which parts are different. Ask students how including one new price on the "high" side would alter the mean, median, mode, and range. • Discuss the meaning of standard deviation (s. d.). Examine a bell-shaped curve with a standard deviation of 10 and one with a standard deviation of 15, both with a mean of 100. Ask students questions such as the following: What similarities do the graphs have? What differences are there? Will more or less people fall within one standard deviation of the mean in the graph with a standard deviation of 15 compared to the graph with the standard deviation of 10? • Separate the class into two groups. Measure the height of everyone in class. Use Microsoft Excel to input the values (in inches or centimeters) and calculate the mean, median, mode, range, and standard deviation. Which item(s) would change if a child's height was added to the list and the values recalculated? Why?
05.10 Understand and correctly apply principles of algebra, including the following: ratio and proportion, signed numbers, basic equations, multi-step algebraic word problems, quadratic equations, and the application of algebraic formulas.	Examples of Content Required • Ratio • Proportion • Signed numbers • One-step, two-step, and multi-step equations • Variables • Expressions • Linear equations • Quadratic equations • Formulas, such as d = r x t
	Strategies • List various job tasks that a retail sales associate needs to complete. State specific situations (such as folding 14 shirts in six minutes) and have students set up ratios that reflect the situations. • Brainstorm various day-trip locations. Use a mapping website to find the estimated distance from the school. Tell students to assume that they can drive 130 miles in two hours. Have students set up proportions to solve for the time needed to get to each particular destination. • Provide students with chart paper. Have them create a number line to examine signed numbers. Have them include both positive and negative integers. Discuss how having

	money and owing money can be represented by signed numbers. Have students identify other real-life situations in which positive and negative integers are used. • Discuss the role of a variable in an expression and an equation. Provide students with basic equations. Model for them how they can evaluate variable expressions by substituting numbers into the expression. (Example: (x + 2) (x – 2). Substitute 8 for x and solve the expression.) • Create and solve one-, two-, and multi-step equations. Explore with students how word problems and algebraic equations are connected. • Examine the differences between linear and quadratic equations, showing students the graphs of each type of equation. • Have students find the distance from the school to the nearest airport. Students should use the distance formula (d = r x t) to calculate the time if the rate is 40 mph, 50 mph, and 60 mph. Have students generalize what happens to the time when the rate increases and when the rate decreases.
05.11 Understand and correctly apply basic formulas, such as the Pythagorean Theorem and calculation of the slope of a line, y-intercept of a line, and intersection of two lines.	Examples of Content Required • Right triangles • Pythagorean Theorem • Coordinate plane • Lines • Slopes • Intersection
	Strategies • Examine the sizes of televisions and computer monitors. Have students determine how the “base” and “height” of the screens impact the “size” that’s given in a manual or advertisement. • Brainstorm occupations that use the Pythagorean Theorem on a regular basis. Document the different ways in which the formula is used. • Discuss the similarities between coordinate planes and map grids. Pick two locations on a given map grid and have students calculate the slope of the line. Next, provide students with points for lines obtained through the formula: y = mx + b. (Examples: Graph lines such as y = 3x + 1, y = -2x – 5, and y = (-1/2) x + 3.) • Show students graphing websites, such as http://www.shodor.org/interactivate/activities/Graphit/. Have students graph various lines using the y = mx + b format and conclude which part is the y-intercept. • Explore the intersection of two lines both graphically and by using simultaneous equations.
05.12 Operate a scientific calculator to solve basic and advanced mathematical functions, including exponents and square roots.	Examples of Content Required • Number operations • Order of operations • Square roots • Exponents

	Strategies • Distribute calculators to each student. Present students with a list of basic mathematical expressions to calculate. Next, have students solve advanced mathematical expressions that will necessitate using the order of operations to calculate. Students should be familiar with the Casio fx-260 solar calculator as this is the calculator used on the GED Mathematics Test. • Review the Pythagorean Theorem. Ask students to measure various openings in the classroom, such as square or rectangular windows and doorways. Ask students to use the Pythagorean Theorem to obtain the largest item possible that can be moved through the opening. Have students use the calculator to obtain their answer.
05.13 Recognize and correctly apply an appropriate procedural setup required for solving a problem.	Examples of Content Required • Word problems • Formulas • Equations
	Strategies • Brainstorm various ways to solve a given problem (e.g., using a ratio, proportion, formula). Have students discuss why there may be multiple correct ways to solve a problem. • Model different problem-solving strategies for students, such as: guess, check, and revise; working backwards; using a simple case; estimation; using a formula; drawing a picture or graphic; and elimination. Provide students with sample word problems. Have them select a strategy to use and solve the problem. Students should share with the class what strategy they used and why.
05.14 Use alternate answer formats such as grids or coordinate planes.	Examples of Content Required • Coordinate plane grids • Plotting coordinates • Design of geometric figures
	Strategies • As a class, discuss coordinates, coordinate plane grids, and alternate grids. Demonstrate how to plot points on the coordinate plane grid or graph paper. Relate coordinate plane points to finding a geographical location using longitude and latitude coordinates with sectors. Use maps and an overhead projector to illustrate how to locate a specific point using coordinates. • Have students create a figure on graph paper and plot the coordinates. Students should list the coordinates in order and give the list to other students in the class. Have students plot the provided points and see if they created the same figure. • Demonstrate how to complete an alternate grid. Have students explore the different ways to correctly grid a specific answer. Have students solve word problems and document their answers on an alternate format grid.

05.15 Use estimation to predict solutions, solve problems, and assess the reasonableness of the answers.	Examples of Content Required • All mathematical content areas • Word problems • Estimation of cost • Percentage
	Strategies • Have students use estimation skills to solve decimal problems. Provide students with examples of word problems using dollar amounts. Problems should require students to add, subtract, multiply, and divide funds. • Introduce percentages by having students estimate percentage amounts to increase the original dollar amount. Example: Students have $14.25 and need to add a 7% sales tax to the amount. Students wish to purchase an item for $14.25 which is on sale for 18% off of the original price. Have the student round and estimate the percentage amounts and dollars and assess whether or not the answer is reasonable. • Provide students with newspapers. Have them locate different sale items. Have students estimate their savings and the final cost of the items. Next, have students calculate the actual cost. Students should compare and contrast their answers.
05.16 Apply mathematical principles to workplace/life situations.	Examples of Content Required • Budgets, financial plans, and cash flow projections • Income and expense accounts • Bank statements • Taxes, insurance, retirement and investment funds • All mathematical content areas • Graphs, tables, and charts
	Strategies • Have students construct a budget of monthly household expenses. Have students insert monthly income and discuss cash flow or the “bottom line”. Discuss savings and investments and relate these to a financial plan, both short term and long term. Discuss goals for a person’s financial future, e.g., age of retirement and savings and investment plan. • Model for students how to manually reconcile a bank statement. Explain the concept of the “float” of checks and payments and timing differences. Once the student understands the manual method, introduce banking software for banking, e.g., MS Money and Quick Books. • Discuss Internet security in banking, bill payment, investments, and online purchases. Discuss the need to protect personal information such as account numbers and one’s social security number in order to avoid identify theft. • Demonstrate and have students complete a 1040 EZ form. Provide students with a W-2 and a 1099 form. Explain the different forms that are used for taxes and how they are used. Discuss the various types of taxes and the different tax brackets. Demonstrate how to interpret a tax table.

	Have students use the different tax tables to locate information. • Explain to students the difference between property and liability insurance. As a class, discuss the different types of insurance and how property and liability apply to multiple categories (e.g., homeowners, renters, auto, and umbrella insurance). • Demonstrate the concept of compounding interest on investments. Show students how interest is calculated and paid on auto loans and mortgages. Make sure that students understand the nature of increasing cash with compounding interest and the cost of borrowing money with various interest amounts. Invite a bank professional to discuss with the class the different types of loans and the positives and negatives of each.