# **Continuum of Learning Experiences Framework Overview**



The kindergarten through grade eight Continuum of Learning Experiences Framework (COLEF) charts can be used to guide students through the research process to ensure depth and complexity of learning. Each framework chart provides grade level and beyond grade level English Language Arts and Reading TEKS for developing a research plan, conducting authentic research, and sharing findings. In addition the foundation curriculum TEKS of math, science, and social studies are included to provide guidance for utilizing and implementing discipline-appropriate inquiry methods. Each chart also references the six scoring dimensions from the Texas Performance Standards Project (TPSP) and the Texas College and Career Readiness Standards (CCRS). The framework charts are a resource for assisting teachers in developing a continuum of learning experiences that leads to the development of advanced-level products and/or performances resulting from in-depth research.



Research Process	English Language Arts and Reading TEKS (includes above grade level standards)	Texas Performance Standards Project Scoring Dimensions	Foundation Area TEKS (Math, Science, and Social Studies)	Texas College and Career Readiness Standards (CCRS)
<ol> <li>Develop Research Plan</li> <li>Define problem or topic and research questions</li> <li>Review sources of information/ data</li> </ol>	<ul> <li>Grade 6:</li> <li>(22) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them. Students are expected to: <ul> <li>(A) brainstorm, consult with others, decide upon a topic, and formulate open-ended questions to address the major research topic; and</li> <li>(B) generate a research plan for gathering relevant information about the major research question.</li> </ul> </li> <li>Grade 7: <ul> <li>22) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them.</li> <li>Students are expected to: <ul> <li>(A) brainstorm, consult with others, decide upon a topic, and formulate a major research question to address the major research question to address the major research question to address the major research topic; and</li> <li>(B) apply steps for obtaining and evaluating information from a wide variety of sources and create a written plan after preliminary research in reference works and additional text searches.</li> </ul> </li> <li>Grade 8: <ul> <li>(22) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them.</li> </ul> </li> </ul></li></ul>	<ol> <li>Content Knowledge and Skills (CKS) are the key facts, concepts, principles, skills, themes, and methods of inquiry of a discipline. Through planned educational experiences, gifted and talented students begin to access advanced content and develop the skills necessary to manipulate content in sophisticated ways in a variety of contexts. The Texas Essential Knowledge and Skills (TEKS) are the core curriculum and as such serve as the basis of differentiation for students' levels of achievement and areas of giftedness.</li> <li>Research (R) is the inquiry process used in the discipline. Steps in the PSP research process include the following:</li> <li>Defining the research problem</li> <li>Reviewing quality sources of information</li> <li>Refining the research question(s)</li> <li>Developing the research design</li> <li>Carrying out the research design</li> <li>Analyzing the results</li> <li>Reporting the findings through a product and/or presentation</li> </ol>	<ul> <li>Math: <ul> <li>(1) Mathematical process standards.</li> <li>The student uses mathematical processes to acquire and demonstrate mathematical understanding.</li> <li>The student is expected to: <ul> <li>(A) apply mathematics to problems arising in everyday life, society, and the workplace.</li> </ul> </li> <li>Science: <ul> <li>(2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations.</li> <li>The student is expected to: <ul> <li>(A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology; [and]</li> <li>(B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology.</li> </ul> </li> <li>Social Studies skills. The student uses problem-solving and decision-making skills, working independently</li> </ul></li></ul></li></ul>	<ul> <li>Cross-Disciplinary Standards:</li> <li>I.A.1. Engage in scholarly inquiry and dialog.</li> <li>I.C.1. Analyze a situation to identify a problem to be solved.</li> <li>I.D.1. Self-monitor learning needs and seek assistance when needed.</li> <li>I.D.2. Use study habits necessary to manage academic pursuits and requirements.</li> <li>I.E.1. Work independently.</li> <li>I.E.2. Work collaboratively.</li> <li>I.F.2. Evaluate sources for quality of content, validity, credibility, and relevance.</li> <li>II.C.1. Understand which topics or questions are to be investigated.</li> <li>II.C.2. Explore a research topic</li> <li>II.C.3. Refine research topic based on preliminary research and devise a timeline for completing work.</li> <li>II.C.4. Evaluate the validity and reliability of sources.</li> <li>II.D.2. Use statistical and probabilistic skills necessary for planning an investigation and collecting, analyzing, and interpreting data.</li> </ul>



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	<ul> <li>Students are expected to:</li> <li>(A) brainstorm, consult with others, decide upon a topic, and formulate a major research question to address the major research topic; and</li> <li>(B) apply steps for obtaining and evaluating information from a wide variety of sources and create a written plan after preliminary research in reference works and additional text searches.</li> </ul>		<ul> <li>and with others, in a variety of settings.</li> <li>The student is expected to: <ul> <li>(A) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and</li> <li>(B) use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.</li> </ul> </li> </ul>	
<ul> <li>2. Develop and Carry Out Research Design</li> <li>Refine research questions</li> <li>Gather information/ data</li> </ul>	Grade 6: (23) Research/Gathering Sources. Students determine, locate, and explore the full range of relevant sources addressing a research question and systematically record the information they gather. Students are expected to: (A) follow the research plan to collect data from a range of print and electronic resources (e.g., reference texts, periodicals, web pages, online sources) and data from experts; (B) differentiate between primary and secondary sources; (C) record data, utilizing available technology (e.g., word processors) in	<ol> <li>Content Knowledge and Skills (CKS) are the key facts, concepts, principles, skills, themes, and methods of inquiry of a discipline. Through planned educational experiences, gifted and talented students begin to access advanced content and develop the skills necessary to manipulate content in sophisticated ways in a variety of contexts. The Texas Essential Knowledge and Skills (TEKS) are the core curriculum and as such serve as the basis of differentiation for students' levels of achievement and areas of giftedness.</li> <li>Multiple Perspectives (MP) include the consideration of other, diverse points of view in order to deepen one's understanding of a discipline or field of</li> </ol>	Math: (1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: (B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution; [and] (C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math,	<ul> <li>Cross-Disciplinary Standards:</li> <li>I.B.3. Gather evidence to support arguments, findings, or lines of reasoning.</li> <li>I.C.2. Develop and apply multiple strategies to solve a problem.</li> <li>I.C.3. Collect evidence and data systematically and directly relate to solve a problem.</li> <li>I.D.3. Strive for accuracy and precision.</li> <li>I.F.1. Attribute ideas and information to source materials and people.</li> <li>I.F.3. Include the ideas of others and the complexities of the debate, issue, or problem.</li> <li>I.F.4. Understand and adhere to ethical</li> </ul>

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	<ul> <li>order to see the relationships between ideas, and convert graphic/visual data (e.g., charts, diagrams, timelines) into written notes;</li> <li>(D) identify the source of notes (e.g., author, title, page number) and record bibliographic information concerning those sources according to a standard format; and</li> <li>(E) differentiate between paraphrasing and plagiarism and identify the importance of citing valid and reliable sources.</li> <li><b>Grade 7:</b></li> <li>(23) Research/Gathering Sources.</li> <li>Students determine, locate, and explore the full range of relevant sources addressing a research question and systematically record the information they gather.</li> <li>Students are expected to: <ul> <li>(A) follow the research plan to gather information from a range of relevant print and electronic sources using advanced search strategies;</li> <li>(B) categorize information thematically in order to see the larger constructs inherent in the information;</li> <li>(C) record bibliographic information (e.g., author, title, page number) for all notes and sources according to a standard format; and</li> </ul> </li> </ul>	study. Examples of skills that promote this dimension include identifying points of view, recognizing the values and beliefs that influence individuals' and groups' perspectives on issues, distinguishing between statements that can be proven and statements that reflect personal beliefs or judgments, and reevaluating personal viewpoints in relation to others. <b>4. Research (R)</b> is the inquiry process used in the discipline. Steps in the PSP research process include the following: • Defining the research problem • Reviewing quality sources of information • Refining the research question(s) • Developing the research design • Carrying out the research design • Analyzing the results • Reporting the findings through a product and/or presentation	estimation, and number sense as appropriate, to solve problems. Science: (2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to: (C) collect and record data using the International Systems of Units (SI) and qualitative means such as labeled drawings, writing, graphic organizers. (3) Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to: (D) relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content. (4) Scientific investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to: (A) use appropriate tools to collect, record, and analyze information,	<ul> <li>codes of conduct.</li> <li>II.A.1. Use effective prereading strategies.</li> <li>II.A.2. Use a variety of strategies to understand the meanings of new words.</li> <li>II.A.3. Identify the intended purpose and audience of the text.</li> <li>II.A.4. Identify the key information and supporting details.</li> <li>II.A.5. Analyze textual information critically.</li> <li>II.A.6. Annotate, summarize, paraphrase, and outline texts when appropriate.</li> <li>II.A.7. Adapt reading strategies according to structure of texts.</li> <li>II.A.8. Connect reading to historical and current events and personal interest.</li> <li>II.E.1. Use technology to gather information.</li> </ul>
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	<ul> <li>(D) differentiate between paraphrasing and plagiarism and identify the importance of citing valid and reliable sources.</li> <li>Grade 8:</li> <li>(23) Research/Gathering Sources.</li> <li>Students determine, locate, and explore the full range of relevant sources addressing a research question and systematically record the information they gather.</li> <li>Students are expected to: <ul> <li>(A) follow the research plan to gather information from a range of relevant print and electronic sources using advanced search strategies;</li> <li>(B) categorize information thematically in order to see the larger constructs inherent in the information;</li> <li>(C) record bibliographic information (e.g., author, title, page number) for all notes and sources according to a standard format; and</li> <li>(D) differentiate between paraphrasing and plagiarism and identify the importance of using valid and reliable sources.</li> </ul> </li> </ul>		<ul> <li>including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum; and</li> <li>(B) use preventive safety equipment including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment including an eye/face wash, a fire blanket, and a fire extinguisher.</li> <li>Social Studies skills The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology.</li> <li>The student is expected to: <ul> <li>(A) differentiate between, locate, and use primary and secondary sources such as computer software; interviews; biographies; oral, print, and visual material; and artifacts to acquire information about selected world cultures.</li> </ul> </li> </ul>	
3. Analyze and Interpret Results	<b>Grade 6:</b> (24) Research/Synthesizing Information. Students clarify research questions and evaluate and synthesize collected	<b>1. Content Knowledge and Skills</b> ( <b>CKS</b> ) are the key facts, concepts, principles, skills, themes, and methods of inquiry of a discipline. Through planned	<b>Math:</b> (1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate	<b>Cross-Disciplinary Standards:</b> I.A.2. Accept constructive criticism and revise personal views when valid evidence warrants.



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<ul> <li>Clarify research questions</li> <li>Synthesize information/ data</li> <li>Evaluate data</li> <li>Evaluate viewpoints (including own)</li> </ul>	<ul> <li>information. Students are expected to: <ul> <li>(A) refine the major research question, if necessary, guided by the answers to a secondary set of questions; and</li> <li>(B) evaluate the relevance and reliability of sources for the research.</li> </ul> </li> <li>Grade 7: <ul> <li>(24) Research/Synthesizing</li> <li>Information. Students clarify research questions and evaluate and synthesize collected information.</li> <li>Students are expected to: <ul> <li>(A) narrow or broaden the major research question, if necessary, based on further research and investigation; and</li> <li>(B) utilize elements that demonstrate the reliability and validity of the sources used (e.g., publication date, coverage, language, point of view) and explain why one source is more useful than another.</li> </ul> </li> <li>Grade 8: <ul> <li>(24) Research/Synthesizing Information.</li> <li>Students clarify research questions and evaluate and synthesize collected information.</li> <li>(a) narrow or broaden the major research question date, coverage, language, point of view) and explain why one source is more useful than another.</li> </ul> </li> <li>(24) Research/Synthesizing Information.</li> <li>Students clarify research questions and evaluate and synthesize collected information. Students are expected to: <ul> <li>(A) narrow or broaden the major research question, if necessary, based on further research and investigation; and</li> <li>(B) utilize elements that demonstrate the reliability and validity of the sources and evaluate and synthesize collected information.</li> </ul> </li> </ul></li></ul>	educational experiences, gifted and talented students begin to access advanced content and develop the skills necessary to manipulate content in sophisticated ways in a variety of contexts. The Texas Essential Knowledge and Skills (TEKS) are the core curriculum and as such serve as the basis of differentiation for students' levels of achievement and areas of giftedness. <b>2. Analysis and Synthesis (AS)</b> include advanced thinking processes which enable students to make connections across time, disciplines, locations, and cultures. Examples of analysis include identifying characteristics and attributes, making observations, discriminating between same and different, comparing and contrasting, categorizing, finding patterns, and seeing relationships. Examples of synthesis include creating unique ideas, elaboration, and discovering creative solutions to problems. <b>3. Multiple Perspectives (MP)</b> include the consideration of other, diverse points of view in order to deepen one's understanding of a discipline or field of study. Examples of skills that promote this dimension include identifying points of view, recognizing the values and beliefs that influence individuals' and groups' perspectives on issues, distinguishing between statements that can be proven and statements that reflect personal beliefs or judgments, and	<ul> <li>mathematical understanding.</li> <li>The student is expected to: <ul> <li>(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</li> </ul> </li> <li>(5) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships.</li> <li>The student is expected to: <ul> <li>(A) represent mathematical and realworld problems involving ratios and rates using scale factors, tables, graphs, and proportions; [and]</li> <li>(B) solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models.</li> </ul> </li> <li>(12) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to analyze problems.</li> <li>The student is expected to: <ul> <li>(A) represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots; [and]</li> <li>(C) summarize numeric data with</li> </ul> </li> </ul>	<ul> <li>I.B.1. Consider arguments and conclusions of self and others.</li> <li>I.B.4. Support or modify claims based on the results of an inquiry.</li> <li>II.C.5. Synthesize and organize information effectively.</li> <li>II.D.1. Identify patterns or departures from patterns among data.</li> <li>II.E.2. Use technology to organize, manage, and analyze information.</li> </ul>	
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	used (e.g., publication date, coverage, language, point of view) and explain why one source is more useful and relevant than another.	reevaluating personal viewpoints in relation to others. 4. Research (R) is the inquiry process used in the discipline. Steps in the PSP research process include the following: • Defining the research problem • Reviewing quality sources of information • Refining the research question(s) • Developing the research design • Carrying out the research design • Analyzing the results • Reporting the findings through a product and/or presentation	numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution. <b>Science:</b> (2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to: (D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. (3) Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to: (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing,	



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			including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student.	
			<ul> <li>Social Studies:</li> <li>(21) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology.</li> <li>The student is expected to: <ul> <li>(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;</li> <li>(C) organize and interpret information from outlines, reports, databases, and visuals including graphs, charts, timelines, and maps;</li> <li>(D) identify different points of view about an issue or topic;</li> </ul> </li> </ul>	
			(E) identify the elements of frame of reference that influenced the participants in an event; and	
			(F) use appropriate mathematical skills to interpret social studies information such as maps and graphs.	
			(23) Social studies skills. The student uses problem-solving and decision-	



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			<ul> <li>making skills, working independently and with others, in a variety of settings.</li> <li>The student is expected to: <ul> <li>(A) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and</li> <li>(B) use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.</li> </ul> </li> </ul>	
4. Report Findings through Product and/or Presentation	<ul> <li>Grade 6:</li> <li>(25) Research/Organizing and Presenting Ideas. Students organize and present their ideas and information according to the purpose of the research and their audience. Students are expected to synthesize the research into a written or an oral presentation that: <ul> <li>(A) compiles important information from multiple sources;</li> <li>(B) develops a topic sentence, summarizes findings, and uses evidence to support conclusions;</li> <li>(C) presents the findings in a consistent format; and</li> <li>(D) uses quotations to support ideas and an expression of the support ideas and</li> </ul> </li> </ul>	<ul> <li><b>3. Multiple Perspectives (MP)</b> include the consideration of other, diverse points of view in order to deepen one's understanding of a discipline or field of study. Examples of skills that promote this dimension include identifying points of view, recognizing the values and beliefs that influence individuals' and groups' perspectives on issues, distinguishing between statements that can be proven and statements that reflect personal beliefs or judgments, and reevaluating personal viewpoints in relation to others.</li> <li><b>4. Research (R)</b> is the inquiry process used in the discipline. Steps in the PSP research process include the following:</li> <li>Defining the research problem</li> <li>Reviewing quality sources of</li> </ul>	<ul> <li>Math <ol> <li>Math</li> </ol> </li> <li>Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: <ul> <li>(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate; <ul> <li>(E) create and use representations to organize, record, and communicate mathematical ideas;</li> <li>(F) analyze mathematical relationships to connect and communicate mathematical ideas; [and]</li> <li>(G) display, explain, and justify</li> </ul></li></ul></li></ul>	Cross-Disciplinary Standards: I.B.2. Construct well-reasoned arguments to explain phenomena, validate conjectures, or support positions. I.D.4. Persevere to complete and master tasks. II.B.1. Write clearly and coherently using standard writing conventions. II.B.2. Write in a variety of forms for various audiences and purposes. II.B.3. Compose and revise drafts. II.C.6. Design and present an effective product. II.C.7. Integrate source material. II.C.8. Present final product. II.D.3. Present analyzed data and



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	<ul> <li>acknowledge sources (e.g., bibliography, works cited).</li> <li>Grade 7: <ul> <li>(25) Research/Organizing and</li> <li>Presenting Ideas. Students organize and present their ideas and information according to the purpose of the research and their audience.</li> <li>Students are expected to synthesize the research into a written or an oral presentation that: <ul> <li>(A) draws conclusions and summarizes or paraphrases the findings in a systematic way;</li> <li>(B) marshals evidence to explain the topic and gives relevant reasons for conclusions;</li> <li>(C) presents the findings in a meaningful format; and</li> <li>(D) follows accepted formats for integrating quotations and citations into the written text to maintain a flow of ideas.</li> </ul> </li> <li>Grade 8: <ul> <li>(25) Research/Organizing and Presenting Ideas. Students organize and present their ideas and information according to the purpose of the research and their audience.</li> <li>Students are expected to synthesize the research and their audience.</li> </ul> </li> </ul></li></ul>	<ul> <li>Refining the research question(s)</li> <li>Developing the research design</li> <li>Carrying out the research design</li> <li>Analyzing the results</li> <li>Reporting the findings through a product and/or presentation</li> <li>5. Communication (C) is the use of appropriate written, spoken, and technological media to convey new learning in the discipline. Additionally, students should appropriately use the vocabulary of the discipline studied. Students learn strategies to relate complex understandings to everyday situations and to tailor their messages to the particular needs of the audience.</li> <li>6. Presentation of Learning (PL) is the coherence of a student's presentation of new learning. Presentation of learning includes evidence of the student's planning and reasoning. Also evident are clarity of expression and support of assertions with relevant details.</li> </ul>	using precise mathematical language in written or oral communication. Science (2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to: (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. (3) Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to: (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student; (B) use models to represent aspects of the natural world such as a model of Earth's layers;	communicate findings in a variety of formats. II.F.3. Use technology to communicate and display findings in a clear and coherent manner.



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Sources for Research Process Categories: Grade 8 Guide to Success, Grade 8 TPSP Scoring Dimensions, and English Language Arts and Reading	<ul> <li>presentation that:</li> <li>(A) draws conclusions and summarizes or paraphrases the findings in a systematic way;</li> <li>(B) marshals evidence to explain the topic and gives relevant reasons for conclusions;</li> <li>(C) presents the findings in a meaningful format; and</li> <li>(D) follows accepted formats for integrating quotations and citations into the written text to maintain a flow of ideas.</li> </ul>		<ul> <li>(C) identify advantages and limitations of models such as size, scale, properties, and materials; and</li> <li>(D) relate the impact of research on scientific thought and society including the history of science and contributions of scientists as related to the content.</li> <li><b>Social Studies</b></li> <li>(22) Social studies skills. The student communicates in written, oral, and visual forms.</li> <li>The student is expected to: <ul> <li>(A) use social studies terminology correctly;</li> <li>(B) incorporate main and supporting ideas in verbal and written communication;</li> <li>(C) express ideas orally based on research and experiences;</li> <li>(D) create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies; and</li> <li>(E) use standard grammar, spelling, sentence structure, and punctuation.</li> </ul> </li> </ul>	