

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)
<p>1. Develop Research Plan</p> <ul style="list-style-type: none"> Define problem or topic and research questions Review sources of information/data 	<p>Grade 3: (25) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them. Students are expected to:</p> <p>(A) generate research topics from personal interests or by brainstorming with others, narrow to one topic, and formulate open-ended questions about the major research topic; and</p> <p>(B) generate a research plan for gathering relevant information (e.g., surveys, interviews, encyclopedias) about the major research question.</p> <p>Grade 4: (23) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them. Students are expected to:</p> <p>(A) generate research topics from personal interests or by brainstorming with others, narrow to one topic, and formulate open-ended questions about the major research topic; and</p> <p>(B) generate a research plan for gathering relevant information (e.g., surveys, interviews, encyclopedias) about the major research question.</p> <p>Grade 5: (23) Research/Research Plan. Students ask open-ended research questions and</p>	<p>1. 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.</p> <p>4. Research (R) is the inquiry process used in the discipline. Steps in the PSP research process include the following:</p> <ul style="list-style-type: none"> 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 	<p>Math:</p> <p>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>(A) apply mathematics to problems arising in everyday life, society, and the workplace.</p> <p>Science:</p> <p>(2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and outdoor investigations. The student is expected to:</p> <p>(A) plan and implement descriptive investigations, including asking and answering questions, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world.</p> <p>Social Studies:</p> <p>(18) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings. The student is expected to:</p> <p>(A) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages,</p>	<p>Cross-Disciplinary Standards:</p> <p>I.A.1. Engage in scholarly inquiry and dialog.</p> <p>I.C.1. Analyze a situation to identify a problem to be solved.</p> <p>I.D.1. Self-monitor learning needs and seek assistance when needed.</p> <p>I.D.2. Use study habits necessary to manage academic pursuits and requirements.</p> <p>I.E.1. Work independently.</p> <p>I.E.2. Work collaboratively.</p> <p>I.F.2. Evaluate sources for quality of content, validity, credibility, and relevance.</p> <p>II.C.1. Understand which topics or questions are to be investigated.</p> <p>II.C.2. Explore a research topic.</p> <p>II.C.3. Refine research topic based on preliminary research and devise a timeline for completing work.</p> <p>II.C.4. Evaluate the validity and reliability of sources.</p> <p>II.D.2. Use statistical and probabilistic skills necessary for planning an investigation and collecting, analyzing, and interpreting data.</p>

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	<p>develop a plan for answering them. Students are expected to:</p> <p>(A) brainstorm, consult with others, decide upon a topic, and formulate open-ended questions to address the major research topic; and</p> <p>(B) generate a research plan for gathering relevant information about the major research question.</p>		<p>choose and implement a solution, and evaluate the effectiveness of the solution; and</p> <p>(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.</p>	
<p>2. Develop and Carry Out Research Design</p> <ul style="list-style-type: none"> Refine research questions Gather information/data 	<p>Grade 3:</p> <p>(26) 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:</p> <p>(A) follow the research plan to collect information from multiple sources of information, both oral and written, including:</p> <ul style="list-style-type: none"> (i) student-initiated surveys, on-site inspections, and interviews; (ii) data from experts, reference texts, and online searches; and (iii) visual sources of information (e.g., maps, timelines, graphs) where appropriate; <p>(B) use skimming and scanning techniques to identify data by looking at text features (e.g., bold print, captions, key words, italics);</p>	<p>1. 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.</p> <p>3. 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 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,</p>	<p>Math:</p> <p>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>(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 reasonableness of the solution; [and]</p> <p>(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.</p> <p>Science:</p> <p>(2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and</p>	<p>Cross-Disciplinary Standards:</p> <p>I.B.3. Gather evidence to support arguments, findings, or lines of reasoning.</p> <p>I.C.2. Develop and apply multiple strategies to solve a problem.</p> <p>I.C.3. Collect evidence and data systematically and directly relate to solving a problem.</p> <p>I.D.3. Strive for accuracy and precision.</p> <p>I.F.1. Attribute ideas and information to source materials and people.</p> <p>I.F.3. Include the ideas of others and the complexities of the debate, issue, or problem.</p> <p>I.F.4. Understand and adhere to ethical codes of conduct.</p> <p>II.A.1. Use effective prereading strategies.</p> <p>II.A.2. Use a variety of strategies to understand the meanings of new words.</p> <p>II.A.3. Identify the intended purpose and audience of the text.</p>

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	<p>(C) take simple notes and sort evidence into provided categories or an organizer;</p> <p>(D) identify the author, title, publisher, and publication year of sources; and</p> <p>(E) differentiate between paraphrasing and plagiarism and identify the importance of citing valid and reliable sources.</p> <p>Grade 4: (24) 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:</p> <p>(A) follow the research plan to collect information from multiple sources of information both oral and written, including:</p> <ul style="list-style-type: none"> (i) student-initiated surveys, on-site inspections, and interviews; (ii) data from experts, reference texts, and online searches; and (iii) visual sources of information (e.g., maps, timelines, graphs) where appropriate; <p>(B) use skimming and scanning techniques to identify data by looking at text features (e.g., bold print, italics);</p> <p>(C) take simple notes and sort evidence</p>	<p>distinguishing between statements that can be proven and statements that reflect personal beliefs or judgments, and reevaluating personal viewpoints in relation to others.</p> <p>4. Research (R) is the inquiry process used in the discipline. Steps in the PSP research process include the following:</p> <ul style="list-style-type: none"> • 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 	<p>outdoor investigations. The student is expected to:</p> <p>(B) collect data by observing and measuring using the metric system and recognize differences between observed and measured data; [and]</p> <p>(C) construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data.</p> <p>(3) Scientific investigation and reasoning. The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:</p> <p>(D) connect grade-level appropriate science concepts with the history of science, science careers and contributions of scientists.</p> <p>(4) Scientific investigation and reasoning. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:</p> <p>(A) collect, record, and analyze information using tools, including microscopes, cameras, computers, hand lenses, metric rulers, Celsius</p>	<p>II.A.4. Identify the key information and supporting details.</p> <p>II.A.5. Analyze textual information critically.</p> <p>II.A.6. Annotate, summarize, paraphrase, and outline texts when appropriate.</p> <p>II.A.7. Adapt reading strategies according to structure of texts.</p> <p>II.A.8. Connect reading to historical and current events and personal interest.</p> <p>II.E.1. Use technology to gather information.</p>

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	<p>into provided categories or an organizer;</p> <p>(D) identify the author, title, publisher, and publication year of sources; and</p> <p>(E) differentiate between paraphrasing and plagiarism and identify the importance of citing valid and reliable sources.</p> <p>Grade 5: (24) 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:</p> <p>(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;</p> <p>(B) differentiate between primary and secondary sources;</p> <p>(C) record data, utilizing available technology (e.g., word processors) in order to see the relationships between ideas, and convert graphic/visual data (e.g., charts, diagrams, timelines) into written notes;</p> <p>(D) identify the source of notes (e.g., author, title, page number) and record bibliographic information concerning</p>		<p>thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, compasses, magnets, collecting nets, notebooks, sound recorders, and Sun, Earth, and Moon system models; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums; and</p> <p>(B) use safety equipment as appropriate, including safety goggles and gloves.</p> <p>Social Studies: (16) Social studies skills The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology. The student is expected to:</p> <p>(A) obtain information, including historical and geographic data about the community, using a variety of print, oral, visual, and computer sources;</p> <p>(B) sequence and categorize information; [and]</p> <p>(D) use various parts of a source, including the table of contents, glossary, and index, as well as keyword computer searches, to locate information.</p>	



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	<p>those sources according to a standard format; and</p> <p>(E) differentiate between paraphrasing and plagiarism and identify the importance of citing valid and reliable sources.</p>			
<p>3. Analyze and Interpret Results</p> <ul style="list-style-type: none"> Clarify research questions Synthesize information/data Evaluate data Evaluate viewpoints (including own) 	<p>Grade 3: (27) Research/Synthesizing Information. Students clarify research questions and evaluate and synthesize collected information. Students are expected to improve the focus of research as a result of consulting expert sources (e.g., reference librarians and local experts on the topic).</p> <p>Grade 4: (25) Research/Synthesizing Information. Students clarify research questions and evaluate and synthesize collected information. Students are expected to improve the focus of research as a result of consulting expert sources (e.g., reference librarians and local experts on the topic).</p> <p>Grade 5: (25) Research/Synthesizing Information. Students clarify research questions and evaluate and synthesize collected information. Students are expected to:</p> <p>(A) refine the major research question, if necessary, guided by the answers to a secondary set of questions; and</p>	<p>1. 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.</p> <p>2. Analysis and Synthesis (AS) 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</p>	<p>Math:</p> <p>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: (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.</p> <p>(8) Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to: (A) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals.</p> <p>Science:</p> <p>(2) Scientific investigation and reasoning. The student uses scientific</p>	<p>Cross-Disciplinary Standards:</p> <p>I.A.2. Accept constructive criticism and revise personal views when valid evidence warrants.</p> <p>I.B.1. Consider arguments and conclusions of self and others.</p> <p>I.B.4. Support or modify claims based on the results of an inquiry.</p> <p>II.C.5. Synthesize and organize information effectively.</p> <p>II.D.1. Identify patterns or departures from patterns among data.</p> <p>II.E.2. Use technology to organize, manage, and analyze information.</p>



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	<p>(B) evaluate the relevance, validity, and reliability of sources for the research.</p>	<p>unique ideas, elaboration, and discovering creative solutions to problems.</p> <p>3. 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 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.</p> <p>4. Research (R) is the inquiry process used in the discipline. Steps in the PSP research process include the following:</p> <ul style="list-style-type: none"> • 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 	<p>inquiry methods during laboratory and outdoor investigations. The student is expected to:</p> <p>(C) construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data;</p> <p>(D) analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations; [and]</p> <p>(E) demonstrate that repeated investigations may increase the reliability of results.</p> <p>(3) Scientific investigation and reasoning. The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:</p> <p>(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; [and]</p> <p>(B) draw inferences and evaluate</p>	



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			<p>accuracy of product claims found in advertisements and labels such as for toys and food.</p> <p>Social Studies:</p> <p>(16) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology.</p> <p>The student is expected to:</p> <ul style="list-style-type: none"> (B) sequence and categorize information; (C) interpret oral, visual, and print material by identifying the main idea, identifying cause and effect, and comparing and contrasting; (E) interpret and create visuals including graphs, charts, tables, timelines, illustrations, and maps; and (F) use appropriate mathematical skills to interpret social studies information such as maps and graphs. <p>(18) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings.</p> <p>The student is expected to:</p> <ul style="list-style-type: none"> (A) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, 	



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			<p>choose and implement a solution, and evaluate the effectiveness of the solution; and</p> <p>(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.</p>	
<p>4. Report Findings through Product and/or Presentation</p>	<p>Grade 3: (28) 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 draw conclusions through a brief written explanation and create a works-cited page from notes, including the author, title, publisher, and publication year for each source used.</p> <p>Grade 4: (26) 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 draw conclusions through a brief written explanation and create a works-cited page from notes, including the author, title, publisher, and publication year for each source used.</p>	<p>3. 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 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</p> <p>4. Research (R) is the inquiry process used in the discipline. Steps in the PSP research process include the following:</p> <ul style="list-style-type: none"> • Defining the research problem • Reviewing quality sources of information • Refining the research question(s) • Developing the research design 	<p>Math:</p> <p>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;</p> <p>(E) create and use representations to organize, record, and communicate mathematical ideas;</p> <p>(F) analyze mathematical relationships to connect and communicate mathematical ideas; [and]</p> <p>(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.</p> <p>Science:</p> <p>(2) Scientific investigation and reasoning. The student uses scientific</p>	<p>Cross-Disciplinary Standards:</p> <p>I.B.2. Construct well-reasoned arguments to explain phenomena, validate conjectures, or support positions.</p> <p>I.D.4. Persevere to complete and master tasks.</p> <p>II.B.1. Write clearly and coherently using standard writing conventions.</p> <p>II.B.2. Write in a variety of forms for various audiences and purposes.</p> <p>II.B.3. Compose and revise drafts.</p> <p>II.C.6. Design and present an effective product.</p> <p>II.C.7. Integrate source material.</p> <p>II.C.8. Present final product.</p> <p>II.D.3. Present analyzed data and communicate findings in a variety of formats.</p> <p>II.F.3. Use technology to communicate and display findings in a clear and coherent manner.</p>



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	<p>Grade 5: (26) 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:</p> <p>(A) compiles important information from multiple sources;</p> <p>(B) develops a topic sentence, summarizes findings, and uses evidence to support conclusions;</p> <p>(C) presents the findings in a consistent format; and</p> <p>(D) uses quotations to support ideas and an appropriate form of documentation to acknowledge sources (e.g., bibliography, works cited).</p>	<ul style="list-style-type: none"> • Carrying out the research design • Analyzing the results • Reporting the findings through a product and/or presentation <p>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.</p> <p>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.</p>	<p>inquiry methods during laboratory and outdoor investigations. The student is expected to:</p> <p>(F) communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion.</p> <p>(3) Scientific investigation and reasoning. The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:</p> <p>(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;</p> <p>(C) represent the natural world using models such as volcanoes or Sun, Earth, and Moon system, and identify their limitations including size, properties and materials; and</p> <p>(D) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.</p>	



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<p>Sources for Research Process Categories: Grade 4 <i>Guide to Success</i>, Grade 4 TPSP Scoring Dimensions, and English Language Arts and Reading TEKS</p>			<p>Social Studies: (17) Social studies skills. The student communicates effectively in written, oral, and visual forms. The student is expected to:</p> <ul style="list-style-type: none">(A) express ideas orally based on knowledge and experiences;(B) create written and visual material such as stories, poems, pictures, maps, and graphic organizers to express ideas; and(C) use standard grammar, spelling, sentence structure, and punctuation.	