

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 2: (24) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them. Students are expected to:</p> <p>(A) generate a list of topics of class-wide interest and formulate open-ended questions about one or two of the topics; and</p> <p>(B) decide what sources of information might be relevant to answer these questions.</p> <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>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 develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to:</p> <p>(A) ask questions about organisms, objects, and events during observations and investigations; [and]</p> <p>(B) plan and conduct descriptive investigations such as how organisms grow.</p> <p>(3) Scientific investigation and reasoning. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:</p> <p>(A) identify and explain a problem in his/her own words and propose a task and solution for the problem such as lack of water in a habitat.</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>(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>Social Studies:</p> <p>(19) 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, 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 2:</p> <p>(25) 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) gather evidence from available sources (natural and personal) as well as from interviews with local experts;</p> <p>(B) use text features (e.g., table of contents, alphabetized index, headings) in age-appropriate reference works (e.g., picture dictionaries) to locate information; 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>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 problem-solving process and the reasonableness of the solution; [and]</p> <p>(C) select tools, including real</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>



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	<p>(C) record basic information in simple visual formats (e.g., notes, charts, picture graphs, diagrams).</p> <p>Grade 3: (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>(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</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>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: (2) Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to:</p> <p>(C) collect data from observations using simple equipment such as hand lenses, primary balances, thermometers, and non-standard measurement tools; [and]</p> <p>(D) record and organize data using pictures, numbers, and words.</p> <p>(3) Scientific investigation and reasoning. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:</p> <p>(C) identify what a scientist is and explore what different scientists do.</p> <p>(4) Scientific investigation and reasoning. The student uses age-</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> <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>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> <ul style="list-style-type: none"> (A) follow the research plan to collect information from multiple sources of information both oral and written, including: <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; (B) use skimming and scanning techniques to identify data by looking at text features (e.g., bold print, italics); (C) take simple notes and sort evidence into provided categories or an organizer; (D) identify the author, title, publisher, and publication year of sources; and (E) differentiate between paraphrasing and plagiarism and identify the 		<p>appropriate tools and models to investigate the natural world. The student is expected to:</p> <ul style="list-style-type: none"> (A) collect, record, and compare information using tools, including computers, hand lenses, rulers, primary balances, plastic beakers, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and stopwatches; weather instruments such as thermometers, wind vanes, and rain gauges; and materials to support observations of habitats of organisms such as terrariums and aquariums; and (B) measure and compare organisms and objects using non-standard units that approximate metric units. <p>Social Studies: (17) 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> <ul style="list-style-type: none"> (A) obtain information about a topic using a variety of oral sources such as conversations, interviews, and music; (B) obtain information about a topic using a variety of visual sources such as pictures, graphics, television, maps, computer software, literature, reference sources, and artifacts; [and] 	



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	<p>importance of citing valid and reliable sources.</p>		<p>(C) use various parts of a source, including the table of contents, glossary, and index, as well as keyword computer searches, to locate information.</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 2: (26) Research/Synthesizing Information. Students clarify research questions and evaluate and synthesize collected information. Students are expected to revise the topic as a result of answers to initial research questions.</p> <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>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 unique ideas, elaboration, and</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>(10) Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to: (B) organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more; [and] (D) draw conclusions and make predictions from information in a graph.</p> <p>Science:</p> <p>(2) Scientific investigation and reasoning. The student develops abilities necessary</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>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>to do scientific inquiry in classroom and outdoor investigations.</p> <p>The student is expected to:</p> <p>(D) record and organize data using pictures, numbers, and words.</p> <p>(3) Scientific investigation and reasoning. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions.</p> <p>The student is expected to:</p> <p>(A) identify and explain a problem in his/her own words and propose a task and solution for the problem such as lack of water in a habitat; [and]</p> <p>(B) make predictions based on observable patterns.</p> <p>Social Studies:</p> <p>(17) 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> <p>(D) sequence and categorize information; and</p> <p>(D) interpret oral, visual, and print material by identifying the main idea, predicting, and comparing and contrasting.</p>	



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			<p>(19) 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, 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 2: (27) Research/Organizing and Presenting Ideas. Students organize and present their ideas and information according to the purpose of the research and their audience. Students (with adult assistance) are expected to create a visual display or dramatization to convey the results of the research.</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</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>Math: (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</p>	<p>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.</p>



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<p>Sources for Research Process Categories:</p>	<p>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>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>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>to connect and communicate mathematical ideas; [and] (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.</p> <p>Science: (2) Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to: (E) communicate observations and justify explanations using student-generated data from simple descriptive investigations; and (F) compare results of investigations with what students and scientists know about the world.</p> <p>(3) Scientific investigation and reasoning. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to: (A) identify and explain a problem in his/her own words and propose a task and solution for the problem such as lack of water in a habitat.</p>	<p>II.C.7. Integrate source material. II.C.8. Present final product. II.D.3. Present analyzed data and communicate findings in a variety of formats. II.F.3. Use technology to communicate and display findings in a clear and coherent manner.</p>



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Grade 4 <i>Guide to Success</i> , Grade 4 TPSP Scoring Dimensions, and English Language Arts and Reading TEKS			Social Studies: (18) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to: (A) express ideas orally based on knowledge and experiences; and (B) create visual and written material such as stories, poems, maps, and graphic organizers to express ideas.	