

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>Kindergarten: (19) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them. Students (with adult assistance) are expected to:</p> <ul style="list-style-type: none"> (A) ask questions about topics of class-wide interest; and (B) decide what sources or people in the classroom, school, library, or home can answer these questions. <p>Grade 1: (23) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them. Students (with adult assistance) are expected to:</p> <ul style="list-style-type: none"> (A) generate a list of topics of class-wide interest and formulate open-ended questions about one or two of the topics; and (B) decide what sources of information might be relevant to answer these questions. <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> <ul style="list-style-type: none"> (A) generate a list of topics of class-wide interest and formulate open- 	<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: (1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <ul style="list-style-type: none"> (A) apply mathematics to problems arising in everyday life, society, and the workplace. <p>Science: (2) Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:</p> <ul style="list-style-type: none"> (A) ask questions about organisms, objects, and events observed in the natural world; [and] (B) plan and conduct simple descriptive investigations such as ways objects move. <p>(3) Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:</p> <ul style="list-style-type: none"> (A) identify and explain a problem such as the impact of littering on the playground, and propose a solution in his/her own words. 	<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>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>Social Studies:</p> <p>(17) 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>Kindergarten:</p> <p>(20) 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 (with adult assistance) are expected to:</p> <p>(A) gather evidence from provided text sources; and</p> <p>(B) use pictures in conjunction with writing when documenting research.</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 objects, manipulatives, paper and pencil, 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>



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	<p>Grade 1: (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 (with adult assistance) 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) in age-appropriate reference works (e.g., picture dictionaries) to locate information; and</p> <p>(C) record basic information in simple visual formats (e.g., notes, charts, picture graphs, diagrams).</p> <p>Grade 2: (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.,</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>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 collect and organize data to make it useful for interpreting information. The student is expected to:</p> <p>(A) collect, sort, and organize data into two or three categories.</p> <p>Science:</p> <p>(2) Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:</p> <p>(C) collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools; [and]</p> <p>(D) record and organize data and observations using pictures, numbers, and words.</p> <p>(3) Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:</p> <p>(C) explore that scientists investigate</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>picture dictionaries) to locate information; and</p> <p>(C) record basic information in simple visual formats (e.g., notes, charts, picture graphs, diagrams).</p>		<p>different things in the natural world and use tools to help in their investigations.</p> <p>(4) Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:</p> <p>(A) collect information using tools including computers, hand lenses, primary balances, cups, bowls, magnet, collecting nets, and notebooks; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as demonstration thermometers and windsocks; and materials to support observations of habitats of organisms such as terrariums and aquariums; and</p> <p>(B) use senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment.</p> <p>Social Studies:</p> <p>(15) 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>(A) obtain information about a topic</p>	



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			<p>using a variety of oral sources such as conversations, interviews, and music; [and]</p> <p>(B) obtain information about a topic using a variety of visual sources such as pictures, symbols, television, maps, computer images, print material, and artifacts.</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 1: (25) <i>Research/Synthesizing Information.</i> Students clarify research questions and evaluate and synthesize collected information. Students (with adult assistance) are expected to revise the topic as a result of answers to initial research questions.</p> <p>Grade 2: (26) <i>Research/Synthesizing Information.</i> 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>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.</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>(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 collect and organize data to make it useful for interpreting information. The student is expected to:</p> <p>(B) use data to create real-object and picture graphs; [and]</p> <p>(C) draw conclusions from real-object and picture graphs.</p> <p>Science:</p> <p>(2) Scientific investigation and</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>Examples of synthesis include creating 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>reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations.</p> <p>The student is expected to:</p> <p>(D) record and organize data and observations using pictures, numbers, and words.</p> <p>(3) Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:</p> <p>(A) identify and explain a problem, such as the impact of littering on the playground, and propose a solution in his/her own words; [and]</p> <p>(B) make predictions based on observable patterns in nature, such as the shapes of leaves.</p> <p>Social Studies:</p> <p>(15) 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>(C) sequence and categorize information; and</p> <p>(D) identify main ideas from oral, visual, and print sources.</p> <p>(17) Social Studies skills. The student</p>	



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			<p>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>Kindergarten: (22) Listening and Speaking/Speaking. Students speak clearly and to the point, using the conventions of language. Students continue to apply earlier standards with greater complexity. Students are expected to share information and ideas by speaking audibly and clearly using the conventions of language.</p> <p>Grade 1: (26) <i>Research/Organizing and Presenting Ideas.</i> 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</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>	<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</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>



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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>visual display or dramatization to convey the results of the research.</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>	<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>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 to ask questions and seek answers in classroom and outdoor investigations. The student is expected to: (E) communicate observations with others about simple descriptive investigations.</p> <p>(3) Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to: (A) identify and explain a problem, such as the impact of littering on the playground, and propose a solution in his/her own words.</p> <p>Social Studies (16) Social studies skills. The student communicates in oral and visual forms. The student is expected to: (A) express ideas orally based on knowledge and experiences; and (B) create and interpret visuals including pictures and maps.</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>