

A Suggested Scaffolding of Research Skills

Research Skills (TEKS-based)	Elementary Grades (K-5)	Middle Grades (6-8)	Upper Grades (9-12)
Identify and form relevant questions	<p>Student and teacher responsibilities are to:</p> <ul style="list-style-type: none"> • Select a topic from a given list; • Narrow the topic by brainstorming ideas and identifying key concepts; and • Generate questions about the topic . 	<p>Student responsibilities, with teacher guidance as necessary, are to:</p> <ul style="list-style-type: none"> • Select a topic in an area of interest or from an assigned area; • Narrow the topic by brainstorming and identifying key concepts; • Analyze the topic; • Develop questions for investigation; and • Use creative thinking and problem-solving skills to generate additional questions about the topic . 	<p>Student responsibilities are to:</p> <ul style="list-style-type: none"> • Select a topic in an area of interest; • Clarify ideas by brainstorming and identifying key concepts; • Analyze the topic ; • Develop questions for investigation; and • Use creative thinking and problem-solving skills to generate questions about the topic .
	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>Does the student have general knowledge about the topic or issue?</i> 2. <i>Does the student understand the expectations of the research assignment?</i> 3. <i>What does the student seek to prove, investigate, or develop?</i> 4. <i>What are some of the key words and vocabulary?</i> 5. <i>Will the student be able to identify an adequate number of resources for the topic/issue?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>Does the student have working knowledge about the topic or issue?</i> 2. <i>Are there adequate resources for the topic? What researchers or institutions are identified with the topic?</i> 3. <i>What are the parameters of the topic? Is the topic too narrow or too broad?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>How is the topic relevant—historically and/or currently?</i> 2. <i>What are the parameters of the study? How can the student broaden or narrow the study topic if necessary?</i> 3. <i>Are there adequate resources for the topic? What researchers or institutions are identified with the topic?</i>

Research Skills (TEKS-based)	Elementary Grades (K-5)	Middle Grades (6-8)	High Grades (9-12)
Use multiple resources to gather information	<p>Student and teacher responsibilities are to:</p> <ul style="list-style-type: none"> • Use key words and questions to search for resources for the project; • Use a variety of resources, including electronic resources and library resources, that are developmentally appropriate for young children; • Identify, differentiate between, and locate primary and secondary sources of information; and • Check reliability of resources and make decisions about the accuracy of information. 	<p>Student responsibilities, with teacher guidance as necessary, are to:</p> <ul style="list-style-type: none"> • Use key words and questions to evaluate and review possible resources; • Use a variety of resources, including electronic resources, experts, library resources, community groups, and student-developed resources (e.g., surveys, experiments); • Locate primary and secondary resources, including archival and manuscript collections, government sources, legal sources, museums, news sources, and documentaries; and • Examine the reliability of resources and make decisions about the accuracy of information. 	<p>Student responsibilities are to:</p> <ul style="list-style-type: none"> • Identify possible resources and evaluate which are useful; • Use a variety of resources, including electronic resources, experts, library resources, community groups, local colleges and universities, and student-developed resources (e.g., surveys, experiments); • Select primary and secondary sources as appropriate for the nature of the research, including archival and manuscript collections, government sources, legal sources, museums, news sources, and documentaries; • Determine appropriate use of materials and resources to support research; and • Judge reliability of resources and make decisions about accuracy and usefulness of information.
	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>What sources of information does the student have access to?</i> 2. <i>Does the student know how to conduct Internet searches and to evaluate the reliability of websites?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>What sources of information does the student have access to?</i> 2. <i>Does the student know how to conduct Internet searches and to evaluate the reliability of websites?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>What sources of information does the student have access to?</i> 2. <i>What additional resources are needed?</i>

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Locate information in resources	<p>Student and teacher responsibilities are to:</p> <ul style="list-style-type: none"> • Skim, scan, and analyze resources. 	<p>Student responsibilities, with teacher guidance as necessary, are to:</p> <ul style="list-style-type: none"> • Skim, scan, and analyze resources. 	<p>Student responsibilities are to:</p> <ul style="list-style-type: none"> • Skim, scan, and analyze resources.
	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>Is the source reliable, readable, and age appropriate?</i> 2. <i>Is the source relevant to the research questions? In what ways?</i> 3. <i>Does the source provide enough information?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>Is the source reliable, readable, and age appropriate?</i> 2. <i>Is the source relevant to the research questions? In what ways?</i> 3. <i>Does the source provide enough information?</i> 4. <i>Does the bibliography provide links to other sources?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>Is the source reliable and readable?</i> 2. <i>Is the source relevant to the research questions? In what ways?</i> 3. <i>Does the source provide enough information?</i> 4. <i>Does the bibliography provide links to other sources?</i> 5. <i>What techniques does the student use to locate information within the source?</i>
Analyze new information and record knowledge in various ways	<p>Student and teacher responsibilities are to:</p> <ul style="list-style-type: none"> • Synthesize and evaluate new information. 	<p>Student responsibilities, with teacher guidance as necessary, are to:</p> <ul style="list-style-type: none"> • Predict, draw conclusions, and evaluate new information; and • Use prior knowledge to create new ideas. 	<p>Student responsibilities are to:</p> <ul style="list-style-type: none"> • Predict, draw conclusions, and evaluate new information; and • Use prior knowledge to create new ideas.
	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>Would this information be helpful to someone who is unfamiliar with the topic?</i> 2. <i>What information about the topic is most important?</i> 3. <i>How does the student record new knowledge?</i> 4. <i>What new ideas does the student present?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>Would this information be helpful to someone who is unfamiliar with the topic?</i> 2. <i>How does the student provide an in-depth view of the topic?</i> 3. <i>In what ways does the student represent different points of view?</i> 4. <i>Does the evidence gathered support the student's hypothesis?</i> 5. <i>How does the student support new understandings and generalizations?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>Would this information be helpful to someone who is unfamiliar with the topic?</i> 2. <i>Does the student display a general understanding of the topic? In-depth knowledge?</i> 3. <i>How does the knowledge offer a solution to the student's research problem?</i> 4. <i>Does the student provide a synthesis of multiple ideas?</i> 5. <i>In what ways does the student represent different points of view?</i> 6. <i>Does the evidence gathered support the student's hypothesis?</i> 7. <i>How does the student support new understandings and generalizations?</i>

Research Skills (TEKS-based)	Elementary Grades (K-5)	Middle Grades (6-8)	High Grades (9-12)
<p>Demonstrate learning through the development of research projects, products, and displays</p>	<p>Student and teacher responsibilities are to:</p> <ul style="list-style-type: none"> • Create new understandings of the topic ; • Develop different types of products and performances that display learning; • Share results with others; • Develop a knowledge base of the topic ; • Present ideas in a logical and organized manner; • Create products that are easy for the audience to understand; • Incorporate and synthesize the research in the product; • Develop written reports, procedures, and explanations; and • Include graphic, pictorial, oral, and dramatic presentations. 	<p>Student responsibilities, with teacher guidance as necessary, are to:</p> <ul style="list-style-type: none"> • Strive for a product of professional quality; • Develop advanced products and performances that display learning; • Develops a deep understanding of the topic ; • Present ideas in a logical and organized manner that support the topic ; • Create products that are easy for the audience to understand; • Incorporate and synthesize the research in the product; • Discuss and debate conclusions; • Develop written reports, procedures, and explanations; • Include graphic, pictorial, oral, and dramatic presentations that are complex; and • Use a variety of resources in developing the final product. 	<p>Student responsibilities are to:</p> <ul style="list-style-type: none"> • Strive for a product that exhibits depth and professional quality; • Create a detailed, unique product that exhibits project findings and learning; • Develop advanced understanding of the topic ; • Present ideas in a logical, detailed, and organized manner that support the topic ; • Create products that are appropriate for the audience; • Incorporate and synthesize the research in the product; • Discuss and debate conclusions; • Develop written reports, procedures, and explanations that draw on the research base • Include graphic, pictorial, oral, and dramatic presentations that are complex and thorough; and • Use a variety of resources in developing the final product.
	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>How does the student display understanding of underlying principles and concepts?</i> 2. <i>How does the student apply knowledge to different situations?</i> 3. <i>Does the student’s product show connections to the real world?</i> 4. <i>In what ways does the student communicate learning and big ideas?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>How does the student communicate new understandings?</i> 2. <i>Does the product show evidence of new ideas, connections, and flexibility in thinking about a topic?</i> 3. <i>How can the student transfer new knowledge to other contexts?</i> 4. <i>In what ways does the student express awareness of connections to their own lives and the lives of other?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>How does the student communicate new understandings?</i> 2. <i>Does the product show evidence of new ideas, connections, and flexibility in thinking about a topic?</i> 3. <i>In what ways does the student’s work and research methods look like that of a professional?</i> 4. <i>How can the student transfer new knowledge to other contexts?</i> 5. <i>In what ways is the product relevant and meaningful to the student in his/her life? To the lives of others?</i>

Research Skills (TEKS-based)	Elementary Grades (K-5)	Middle Grades (6-8)	High Grades (9-12)
Take notes from sources and organize information	Student and teacher responsibilities are to: <ul style="list-style-type: none"> • Learn to record sources of information; • Summarize information; • Record notes, including using graphic organizers; • Review information collected in the research process; • Sort information into categories that relate to the topic; and • Identify more sources of information, if necessary. 	Student responsibilities, with teacher guidance as necessary, are to: <ul style="list-style-type: none"> • Record sources of information; • Disregard extraneous information and summarize main points; • Record notes, including using graphic organizers; • Review and evaluate information collected; • Sort information into categories that relate to the research question(s); and • Identify more sources of information, if necessary. 	Student responsibilities are to: <ul style="list-style-type: none"> • Record sources of information; • Disregard extraneous information and summarize main points; • Record notes; • Review and evaluate information and data collected; • Sort information into categories that relate to the research question(s); and • Identify more sources of information, if necessary.
	Questions for consideration include: <ol style="list-style-type: none"> 1. <i>How will the student keep track of sources used?</i> 2. <i>How will the student take notes?</i> 	Questions for consideration include: <ol style="list-style-type: none"> 1. <i>How will the student keep track of sources used?</i> 2. <i>How will the student take notes?</i> 	Questions for consideration include: <ol style="list-style-type: none"> 1. <i>Does the student have a systematic plan to keep track of findings?</i>

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Present research findings, information, and products	<p>Student and teacher responsibilities are to:</p> <ul style="list-style-type: none"> • Present information in a variety of presentation formats; • Choose the most appropriate presentation method for the topic ; • Plan the presentation; • Organize the information in a logical, interesting sequence; and • Communicate findings to the audience in an understandable way. 	<p>Student responsibilities, with teacher guidance as necessary, are to:</p> <ul style="list-style-type: none"> • Present information and analysis in a variety of presentation formats; • Review and analyze formats for presentation of the information; • Plan and develop the presentation; • Organize the information in a logical, comprehensive, and interesting way; and • Communicate findings to the audience in a coherent way. 	<p>Student responsibilities are to:</p> <ul style="list-style-type: none"> • Present information and analysis in a variety of presentation formats; • Analyze formats for presentation of the information and choose the most appropriate one; • Plan and develop the presentation; • Organize the information in a logical, comprehensive, and interesting way; and • Communicate findings to the audience in a professional way.
	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>How does the student organize the presentation?</i> 2. <i>What presentation methods will the student use to communicate knowledge?</i> 3. <i>What written, oral, and demonstration techniques does the student use?</i> 4. <i>How will the performance be judged? Who is the audience?</i> 5. <i>What are the requirements for the presentation? How much time is allotted?</i> 6. <i>What makes the presentation interesting?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>How does the student organize the presentation?</i> 2. <i>What presentation methods will the student use to communicate knowledge?</i> 3. <i>What written, oral, and demonstration techniques does the student use?</i> 4. <i>What presentation methods will most facilitate audience learning? How will the performance be judged? Who is the audience?</i> 5. <i>What are the requirements for the presentation? How much time is allotted?</i> 6. <i>What makes the presentation interesting?</i> 7. <i>How does the presentation mimic the work of professionals in the field?</i> 	<p>Questions for consideration include:</p> <ol style="list-style-type: none"> 1. <i>How does the student organize the presentation?</i> 2. <i>What presentation methods will the student use to communicate knowledge?</i> 3. <i>What written, oral, and demonstration techniques does the student use?</i> 4. <i>What presentation methods will most facilitate audience learning?</i> 5. <i>How would a professional in the field present this information?</i> 6. <i>What techniques would a professional use? How will the performance be judged? Who is the audience?</i> 7. <i>What are the requirements for the presentation? How much time is allotted?</i> 8. <i>What makes the presentation interesting?</i>

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Create a research plan	Student and teacher responsibilities are to: <ul style="list-style-type: none"> • Identify theories, concepts, and principles that apply to the topic ; • Identify and learn how to use the necessary tools; • Design investigations to try to answer the research question(s); and • Develop a hypothesis. 	Student responsibilities, with teacher guidance as necessary, are to: <ul style="list-style-type: none"> • Note any issues, problems, controversies, or dilemmas that may arise; • Identify tools and methods a practitioner in the field of study might use; • Hypothesize what the study might yield; and • Describe the product that might be developed. 	Student responsibilities are to: <ul style="list-style-type: none"> • Develop a plan for analyzing issues, problems, controversies, or dilemmas that may arise; • Identify and discuss the use of professional tools and methods; • Hypothesize what the study might yield; • Describe the product that might be developed and its relevance to the field; and • Draw upon research from professional in the field.
	Questions for consideration include: <i>1. What do students know about discipline specific research? What additional background do they need?</i>	Questions for consideration include: <i>1. What do students know about discipline specific research? What additional background do they need?</i> <i>2. Can the students “work backwards” from the product to the overall research design?</i>	Questions for consideration include: <i>1. What do students know about discipline specific research? What additional background do they need?</i> <i>2. Are experts in the field available to the student in the community or through the Internet?</i> <i>3. What district procedures must be followed if a mentor from outside the school is to be assigned?</i>

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Address and use differing points of view	Student and teacher responsibilities are to: <ul style="list-style-type: none"> • Discuss what a point of view is; and • Select resources that represent various points of view. 	Student responsibilities, with teacher guidance as necessary, are to: <ul style="list-style-type: none"> • Review how to determine if something is a point of view; • Examine methods of determining an author’s bias, opinion, direction, and points of view; and • Select and interpret resources that represent various points of view. 	Student responsibilities are to: <ul style="list-style-type: none"> • Examine resources from multiple points of view to determine validity and usefulness; • Determine the position of an author; and • Acknowledge multiple points of view in his/her topic or research area.
	Questions for consideration include: <ol style="list-style-type: none"> 1. <i>How do authors express their points of view?</i> 2. <i>In what ways do students know the difference between fact and opinion?</i> 3. <i>What are some words or phrases that are associated with opinions? With facts?</i> 4. <i>How can students determine if an argument is valid?</i> 	Questions for consideration include: <ol style="list-style-type: none"> 1. <i>In what ways can students examine an author’s language to determine the point of view?</i> 2. <i>How can students determine if an argument is valid?</i> 3. <i>What evidence—stated or unstated—does an author provide to support his/her assertions?</i> 4. <i>How do students determine if information is relevant or irrelevant?</i> 	Questions for consideration include: <ol style="list-style-type: none"> 1. <i>How do the student’s resources represent a variety of points of view?</i> 2. <i>How does the student reconcile conflicting expert opinions?</i> 3. <i>Does the student include all points of view in his/her research?</i> 4. <i>How does the student use multiple points of view in his/her analysis of a topic?</i>

Sources:

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Tomlinson, C. A., Kaplan, S. N., Renzulli, J. S., Purcell, J., Leppien, J., & Burns, D. (2002). *The parallel curriculum: A design to develop high potential and challenge high-ability learners*. Thousand Oaks, CA: Corwin Press, Inc.