### A Suggested Scaffolding of Research Skills

<table>
<thead>
<tr>
<th>Research Skills (TEKS-based)</th>
<th>Elementary Grades (K-5)</th>
<th>Middle Grades (6-8)</th>
<th>Upper Grades (9-12)</th>
</tr>
</thead>
</table>
| Identify and form relevant questions | Student and teacher responsibilities are to:  
- Select a topic from a given list;  
- Narrow the topic by brainstorming ideas and identifying key concepts; and  
- Generate questions about the topic. | Student responsibilities, with teacher guidance as necessary, are to:  
- 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. | Student responsibilities are to:  
- 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. |

#### Questions for consideration include:

1. *Does the student have general knowledge about the topic or issue?*
2. *Does the student understand the expectations of the research assignment?*
3. *What does the student seek to prove, investigate, or develop?*
4. *What are some of the key words and vocabulary?*
5. *Will the student be able to identify an adequate number of resources for the topic/issue?*

1. *Does the student have working knowledge about the topic or issue?*
2. *Are there adequate resources for the topic? What researchers or institutions are identified with the topic?*
3. *What are the parameters of the topic? Is the topic too narrow or too broad?*

1. *How is the topic relevant—historically and/or currently?*
2. *What are the parameters of the study? How can the student broaden or narrow the study topic if necessary?*
3. *Are there adequate resources for the topic? What researchers or institutions are identified with the topic?*
<table>
<thead>
<tr>
<th>Research Skills (TEKS-based)</th>
<th>Elementary Grades (K-5)</th>
<th>Middle Grades (6-8)</th>
<th>High Grades (9-12)</th>
</tr>
</thead>
</table>
| Use multiple resources to gather information | Student and teacher responsibilities are to:  
  - 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. | Student responsibilities, with teacher guidance as necessary, are to:  
  - 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. | Student responsibilities are to:  
  - 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. |

Questions for consideration include:  
1. What sources of information does the student have access to?  
2. Does the student know how to conduct Internet searches and to evaluate the reliability of websites?  

Questions for consideration include:  
1. What sources of information does the student have access to?  
2. Does the student know how to conduct Internet searches and to evaluate the reliability of websites?  

Questions for consideration include:  
1. What sources of information does the student have access to?  
2. What additional resources are needed?
<table>
<thead>
<tr>
<th>Research Skills (TEKS-based)</th>
<th>Elementary Grades (K-5)</th>
<th>Middle Grades (6-8)</th>
<th>High Grades (9-12)</th>
</tr>
</thead>
</table>
| Locate information in resources | Student and teacher responsibilities are to:  
• Skim, scan, and analyze resources. | Student responsibilities, with teacher guidance as necessary, are to:  
• Skim, scan, and analyze resources. | Student responsibilities are to:  
• Skim, scan, and analyze resources. |
| Questions for consideration include: | 1. *Is the source reliable, readable, and age appropriate?*  
2. *Is the source relevant to the research questions? In what ways?*  
3. *Does the source provide enough information?* | Questions for consideration include:  
1. *Is the source reliable, readable, and age appropriate?*  
2. *Is the source relevant to the research questions? In what ways?*  
3. *Does the source provide enough information?*  
4. *Does the bibliography provide links to other sources?* | Questions for consideration include:  
1. *Is the source reliable and readable?*  
2. *Is the source relevant to the research questions? In what ways?*  
3. *Does the source provide enough information?*  
4. *Does the bibliography provide links to other sources?*  
5. *What techniques does the student use to locate information within the source?* |
| Analyze new information and record knowledge in various ways | Student and teacher responsibilities are to:  
• Synthesize and evaluate new information. | Student responsibilities, with teacher guidance as necessary, are to:  
• Predict, draw conclusions, and evaluate new information; and  
• Use prior knowledge to create new ideas. | Student responsibilities are to:  
• Predict, draw conclusions, and evaluate new information; and  
• Use prior knowledge to create new ideas. |
| Questions for consideration include: | 1. *Would this information be helpful to someone who is unfamiliar with the topic?*  
2. *What information about the topic is most important?*  
3. *How does the student record new knowledge?*  
4. *What new ideas does the student present?* | Questions for consideration include:  
1. *Would this information be helpful to someone who is unfamiliar with the topic?*  
2. *How does the student provide an in-depth view of the topic?*  
3. *In what ways does the student represent different points of view?*  
4. *Does the evidence gathered support the student’s hypothesis?*  
5. *How does the student support new understandings and generalizations?* | Questions for consideration include:  
1. *Would this information be helpful to someone who is unfamiliar with the topic?*  
2. *Does the student display a general understanding of the topic? In-depth knowledge?*  
3. *How does the knowledge offer a solution to the student’s research problem?*  
4. *Does the student provide a synthesis of multiple ideas?*  
5. *In what ways does the student represent different points of view?*  
6. *Does the evidence gathered support the student’s hypothesis?*  
7. *How does the student support new understandings and generalizations?* |
<table>
<thead>
<tr>
<th>Research Skills (TEKS-based)</th>
<th>Elementary Grades (K-5)</th>
<th>Middle Grades (6-8)</th>
<th>High Grades (9-12)</th>
</tr>
</thead>
</table>
| Demonstrate learning through the development of research projects, products, and displays | Student and teacher responsibilities are to:  
- 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. | Student responsibilities, with teacher guidance as necessary, are to:  
- 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; and  
- Include graphic, pictorial, oral, and dramatic presentations. | Student responsibilities are to:  
- 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. |

Questions for consideration include:  
1. **How does the student display understanding of underlying principles and concepts?**  
2. **How does the student apply knowledge to different situations?**  
3. **Does the student's product show connections to the real world?**  
4. **In what ways does the student communicate learning and big ideas?**  

Questions for consideration include:  
1. **How does the student communicate new understandings?**  
2. **Does the product show evidence of new ideas, connections, and flexibility in thinking about a topic?**  
3. **How can the student transfer new knowledge to other contexts?**  
4. **In what ways does the student express awareness of connections to their own lives and the lives of other?**  

Questions for consideration include:  
1. **How does the student communicate new understandings?**  
2. **Does the product show evidence of new ideas, connections, and flexibility in thinking about a topic?**  
3. **In what ways does the student's work and research methods look like that of a professional?**  
4. **How can the student transfer new knowledge to other contexts?**  
5. **In what ways is the product relevant and meaningful to the student in his/her life? To the lives of others?**
<table>
<thead>
<tr>
<th>Research Skills (TEKS-based)</th>
<th>Elementary Grades (K-5)</th>
<th>Middle Grades (6-8)</th>
<th>High Grades (9-12)</th>
</tr>
</thead>
</table>
| Take notes from sources and organize information | Student and teacher responsibilities are to:  
- 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:  
- 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:  
- 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:  
1. How will the student keep track of sources used?  
2. How will the student take notes? | Questions for consideration include:  
1. How will the student keep track of sources used?  
2. How will the student take notes? | Questions for consideration include:  
1. Does the student have a systematic plan to keep track of findings? |
<table>
<thead>
<tr>
<th>Research Skills (TEKS-based)</th>
<th><strong>Elementary Grades (K-5)</strong></th>
<th><strong>Middle Grades (6-8)</strong></th>
<th><strong>High Grades (9-12)</strong></th>
</tr>
</thead>
</table>
| Present research findings, information, and products | **Student and teacher responsibilities are to:**  
• 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. | **Student responsibilities, with teacher guidance as necessary, are to:**  
• 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. | **Student responsibilities are to:**  
• 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. |

**Questions for consideration include:**  
1. *How does the student organize the presentation?*  
2. *What presentation methods will the student use to communicate knowledge?*  
3. *What written, oral, and demonstration techniques does the student use?*  
4. *How will the performance be judged?*  
5. *Who is the audience?*  
6. *What are the requirements for the presentation? How much time is allotted?*  
7. *What makes the presentation interesting?*  

| Questions for consideration include:  
1. *How does the student organize the presentation?*  
2. *What presentation methods will the student use to communicate knowledge?*  
3. *What written, oral, and demonstration techniques does the student use?*  
4. *What presentation methods will most facilitate audience learning? How will the performance be judged? Who is the audience?*  
5. *What are the requirements for the presentation? How much time is allotted?*  
6. *What makes the presentation interesting?*  
7. *How does the presentation mimic the work of professionals in the field?* |

| Questions for consideration include:  
1. *How does the student organize the presentation?*  
2. *What presentation methods will the student use to communicate knowledge?*  
3. *What written, oral, and demonstration techniques does the student use?*  
4. *What presentation methods will most facilitate audience learning?*  
5. *How would a professional in the field present this information?*  
6. *What techniques would a professional use? How will the performance be judged? Who is the audience?*  
7. *What are the requirements for the presentation? How much time is allotted?*  
8. *What makes the presentation interesting?* |

© 2006 Texas Education Agency
<table>
<thead>
<tr>
<th>Research Skills (TEKS-based)</th>
<th>Elementary Grades (K-5)</th>
<th>Middle Grades (6-8)</th>
<th>High Grades (9-12)</th>
</tr>
</thead>
</table>
| Create a research plan      | Student and teacher responsibilities are to:  
  - 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:  
  - 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:  
  - 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:  
1. What do students know about discipline specific research? What additional background do they need? | Questions for consideration include:  
1. What do students know about discipline specific research? What additional background do they need?  
2. Can the students “work backwards” from the product to the overall research design? | Questions for consideration include:  
1. What do students know about discipline specific research? What additional background do they need?  
2. Are experts in the field available to the student in the community or through the Internet?  
3. What district procedures must be followed if a mentor from outside the school is to be assigned? |
<table>
<thead>
<tr>
<th>Research Skills (TEKS-based)</th>
<th>Elementary Grades (K-5)</th>
<th>Middle Grades (6-8)</th>
<th>High Grades (9-12)</th>
</tr>
</thead>
</table>
| Address and use differing points of view | Student and teacher responsibilities are to:  
- 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:  
- 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:  
- 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: | 1. How do authors express their points of view?  
2. In what ways do students know the difference between fact and opinion?  
3. What are some words or phrases that are associated with opinions? With facts?  
4. How can students determine if an argument is valid? | Questions for consideration include:  
1. In what ways can students examine an author’s language to determine the point of view?  
2. How can students determine if an argument is valid?  
3. What evidence—stated or unstated—does an author provide to support his/her assertions?  
4. How do students determine if information is relevant or irrelevant? | Questions for consideration include:  
1. How do the student’s resources represent a variety of points of view?  
2. How does the student reconcile conflicting expert opinions?  
3. Does the student include all points of view in his/her research?  
4. How does the student use multiple points of view in his/her analysis of a topic? |

Sources:  