

Chemistry/Biochemistry Assessment Rubric

Purpose

Assess students' research papers and projects in order to evaluate students' individual works and obtain qualitative and quantitative data regarding students' information literacy.

Scoring Rubric

1. Effectively search the chemical literature and retrieve background information relevant to the purpose.

| | Excellent =3 | Good/Adequate =2 | Needs Work =1 | Not evident = 0 |
|--|---|--|----------------------|--|
| Find chemistry-specific sources of background information such as encyclopedias, treatises, compiled works, and review articles. | Sources or text include reference to some chemistry-specific sources of background information. | Sources or text include reference to few chemistry-specific sources of background information. | | No chemistry-specific sources of background information evident. |

2. Use Chemical Abstracts and other databases to find empirical sources and complete a comprehensive subject search.

| | Excellent =3 | Good/Adequate =2 | Needs Work =1 | Not evident = 0 |
|---|---|--|---|---|
| Find scholarly journal articles to support arguments and assertions. | Supports all arguments with cited evidence. | Most arguments supported with cited evidence. | Few arguments supported with cited evidence. | Virtually no arguments supported with cited evidence. |
| Utilize reviewed articles or authoritative sites to fulfill research needs. | All sources from reviewed sources (peer-reviewed or editor-reviewed) or authoritative websites. | Some sources from reviewed sources (peer-reviewed or editor-reviewed) or authoritative sites, and some sources from out-of-date and/or biased sources. | Many sources from out of date and/or biased sources, few peer-reviewed sources. | No peer-reviewed sources used. |

3. Understand what a cited reference search is and how it can be useful for research. Understand the importance of the peer review process.

| | Excellent =3 | Good/Adequate =2 | Needs Work =1 | Not evident = 0 |
|--|---------------------|-------------------------|----------------------|------------------------|
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|--|--|--|--|--|
| Search Web of Science to identify and locate cited references of a specific author | | | | |
| Search Web of Science to identify and locate cited references of a specific paper. | | | | |

4. Evaluate websites and other information resources.

| | Excellent = 3 | Good/Adequate = 2 | Needs Work = 1 | Not evident = 0 |
|--|--|--|---|---|
| Evaluate the authority and appropriateness of an information source. | Identifies and/or acknowledges all authors' credentials and acknowledges the purpose or bias of each source. | Identifies and/or acknowledges most authors' credentials and acknowledges the purpose or bias of most sources. | Does not identify or acknowledge authors' credentials for most sources or does not acknowledge the purpose or bias of most sources. | Does not identify or acknowledge authors' credentials or does not acknowledge the purpose or bias of sources. |
| Corroborate information found in websites with information from reviewed sources. | | | | |
| Sources published within appropriate time frame for current and/or historical reference. | All sources published in appropriate time frame. | Most sources published in appropriate time frame. | Few sources published in appropriate time frame. | All sources out of date. |

5. Read, digest and synthesize the information that is found.

| | Excellent = 3 | Good/Adequate = 2 | Needs Work = 1 | Not evident = 0 |
|---|--|--|--|--|
| Select information that provides evidence for the topic. | All sources clearly related to topic. | Most sources clearly related to topic. | Many sources unrelated to topic or relevance is unclear. | Virtually all sources unrelated to topic. |
| Synthesize and integrate information by paraphrasing and quoting effectively. | All quotes and paraphrases are integrated into the text appropriately and effectively. | Most quotes and paraphrases are integrated into the text appropriately and effectively, with some placed into text without any connections drawn | Many quotes and paraphrases placed in text without any connections drawn or comments included. | Most quotes and paraphrases placed in text without any connections drawn or comments included. |

6. Follow appropriate copyright and intellectual property issues related to scientific literature.

| | Excellent =3 | Good/Adequate =2 | Needs Work =1 | Not evident = 0 |
|--|--|---|---|---|
| Correctly cite sources according to APA citation style or other style. | All references cited in APA format with virtually no errors in format. | Most references are identified, with some errors in format. | Insufficient or incorrect information for many sources, with frequent errors in format. | No bibliography or list of cited sources. |
| Correctly identify and acknowledge original source(s) of paraphrased elements. | All paraphrased entries correctly cited. | Most paraphrased entries correctly cited. | All paraphrased entries correctly cited. | All paraphrased entries correctly cited. |

Sources:

Emmons, Mark and Wanda Martin. "Engaging Conversation: Evaluating the Contribution of Library Instruction to the Quality of Student Research." College & Research Libraries 63.6 (2002): 545-559.