

Table for Biol. 100W (Scientific Communication) based on Association of College and Research Libraries Information Competency Standards for Higher Education (Approved by ACRL Board, January 18, 2000)

Standard One

The information literate student determines the nature and extent of the information needed.

1. The information literate student defines and articulates the need for information.

- Students select a specific biological topic for which they locate a primary research article and write a critique of this research article.
- Students select a specific biological topic on which they write a research literature review and primary research article or research grant proposal.

2. The information literate student identifies a variety of types and formats of potential sources for information.

- Students use information from books, abstracts, primary research articles, review articles, magazine articles, newspaper articles and information posted on the internet for their assignments.
- Students use PubMed, Biological Abstracts, and other Biology-related publication databases to search for primary and secondary sources of information for the research article critique, literature review, and research article/research grant proposal assignments.
- Students search for information for instructor-selected in-class debate topics on the internet.

3. The information literate student considers the costs and benefits of acquiring the needed information.

- Students become aware of the time needed to research a topic thoroughly.
- Students become aware of the time it takes to order journal articles through interlibrary loan. They decide whether the article is critical for successful completion of the assignment. If yes, they decide whether to use interlibrary loan to acquire it, to find the article on the internet, or to visit another campus' library.

4. The information literate student reevaluates the nature and extent of the information need.

- For assignments completed over a long period of time, students evaluate at several time points whether the information they have thus far acquired is appropriate for their chosen topic and sufficient for successful completion of the assignment.

Standard Two

The information literate student accesses needed information effectively and efficiently.

1. The information literate student selects the most appropriate investigative methods or information retrieval system for accessing the needed information.

- Students learn from the Biology librarian whether PubMed, Biological Abstracts, or other sources are appropriate for their topics. They learn that topics vary considerably with regard to availability of online full-text articles, journals in the library, number of relevant articles located, and challenge for understanding the content.
- Students learn that the internet can also be used to locate topic-specific information.

2. The information literate student constructs and implements effectively-designed search strategies.

- Students learn from the Biology librarian and course instructor how to select appropriate keywords to locate primary and secondary sources of information.

3. The information literate student retrieves information online or in person with a variety of methods.

- See above for searching with PubMed, Biological Abstracts, and the internet.
- Students photocopy journal articles in the Clark Library if they are available there.
- Students use interlibrary loan to retrieve articles unavailable at Clark Library.
- Students visit other campus' libraries to retrieve articles unavailable at Clark Library.

4. The information literate student refines the search strategy if necessary.

- As students acquire information about their topics, resulting in a change of information needs, they alter their search strategies accordingly.

5. The information literate student extracts, records, and manages the information and its sources.

- Students record citations for all sources of information obtained.
- Students must accurately cite their sources within their written reports and in a reference list, both of which are follow APA style.

Standard Three

The information literate student evaluates information and its sources critically and incorporates selected information into his/her knowledge base and value system.

1. The information literate student summarizes the main ideas to be extracted from the information gathered.

- Students write summaries of newspaper or magazine articles, abstracts for a primary research article, a research article critique, a literature review, a primary research article or research grant proposal, and a primary research article summary directed at a nonscientific audience. The literature review and primary research article or research grant proposal require students to summarize at least 10 primary research articles.

2. The information literate student articulates and applies initial criteria for evaluating both the information and its sources.

- Students learn from the Biology librarian and instructor the criteria for evaluating credibility of information and its sources.

3. The information literate student synthesizes main ideas to construct new concepts.

- For the research article critique, students read and critically evaluate a primary research article.
- For the literature review, students read and critically evaluate a collection of primary research articles, critically evaluate these articles, and write a synthesis of these critical evaluations. The focus is on summarizing and evaluating a collection of information on a specific topic.
- For the primary research article or research grant proposal assignments, students develop a novel hypothesis based on the topic addressed in their literature review, and design an experiment to test this hypothesis. For the primary research article assignment, they create results to support the hypothesis as well.

4. The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information.

- Not addressed in Biology 100W.

5. The information literate student determines whether the new knowledge had an impact on the individual's value system and takes steps to reconcile differences.

- Not addressed in Biology 100W.

6. The information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners.

- For the experimental design assignment, students meet in a group to collectively design an experiment addressing a topic assigned by the instructor.
- For the in-class debate assignment, students spend roughly 1 hr individually gathering information on the internet to support their team's position. They then meet with their team to discuss the information gathered and formulate debate arguments.

7. The information literate student determines whether the initial inquiry should be revised.

- Not addressed in Biology 100W.

Standard Four

The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

1. The information literate student applies new and prior information to the planning and creation of a particular product or performance.

- Students select topics for the literature review and primary research article/research grant proposal assignments based on prior knowledge gained in coursework or other situations. They build on this knowledge by acquiring an extensive repertoire of primary and secondary sources of information.

2. The information literate student revises the development process for the product or performance.

- Students turn in drafts of the literature review and primary research article/research grant proposal assignments. They use the instructor's feedback on these drafts to guide their further development of the assignment and information acquisition.

3. The information literate student communicates the product or performance effectively to others.

- Students complete 1-2 written assignments weekly, regularly participate in group discussions, and complete 2 formal oral presentations.

Standard Five

The information literate student understands many of the economic, legal, and social issues surrounding the use of information and access and uses of information ethically and legally.

1. The information literate student understands many of the ethical, legal, and socioeconomic issues surrounding information and information technology.

- Students learn about plagiarism an assignment that asks them to summarize the information they find on 3 websites that discuss plagiarism. Their findings are then discussed in class. The instructor provides more information about plagiarism during this discussion.
- Students learn to include citations in their papers.

2. The information literate student follows the laws, regulations, institutional policies, and etiquette related to the access and use of information resources.

- See #1.

3. The information literate student acknowledges the use of information in communicating the product or performance.

- Students must cite their sources appropriately and accurately in papers and oral presentations.