

EXPECTATIONS FOR WRITING IN BIOLOGY

Accurate, clear, concise writing is essential to effective communication among biologists. Through out their course work, Biology majors encounter various forms of scientific writing – all of which require careful thinking and strong writing skills. As majors advance through their courses, they learn to evince the analytical, verbal, and rhetorical skills to cogently express thoughts and arguments in a sophisticated and aesthetic written form. Good writing requires work. The quality of writing the Biology major produces reflects directly on her/his commitment to excellence.

Upon graduation, Clarion Biology majors will exhibit the following abilities.

WORKING WITH TEXTS

CRITICAL LITERACY & ANALYSIS:

Science is a way of thinking that requires attention to data, details, and procedures; the ability to apply logical interpretations to experimental outcomes; and the ability to synthesize concepts and information.

Students comprehend and follow directions.

Benchmark indicators may include:

- Writer differentiates between and responds appropriately to types of tasks (i.e., illustrate, explain, discuss, report, etc.).
- Writer follows procedure.
- Writer clearly iterates collection of data, procedure, and analysis/interpretation.

Students locate and identify both print and visual resources that pertain to their own experimental questions.

Benchmark indicators may include:

- Writer connects findings to references.
- Writer connects findings to graphs and charts.

Students apply learned concepts to scientific situations.

Benchmark indicators may include:

- Writer details the components of a project.
- Writer outlines procedures followed.
- Writer makes connections between concepts and scientific situations.

Students comprehend scientific literature; discriminate between relevant and irrelevant knowledge, and incorporate relevant data and details to support and bring insight to their own experimental questions, procedures and discussion narratives.

Benchmark indicators may include:

- ❑ Writer reports on experiment.
- ❑ Writer summarizes data.
- ❑ Writer evaluates data.
- ❑ Writer connects descriptions of data to figures, graphs, and charts.
- ❑ Writer discusses results in relation to learned concepts.
- ❑ Writer interprets findings.
- ❑ Writer evaluates findings in relation to hypothesis.

WRITING

RHETORICAL AWARENESS

Students understand the rhetorical roles that govern form and content and that distinguish between various genres of scientific writing including scientific papers, lab reports, reviews of the literature, grant proposals, and poster presentations.

Benchmark indicators may include:

- ❑ Writer uses appropriate tone, voice, and formality expected of scientific writing style.
- ❑ Writer distinguishes between appropriate use of 1st person/present tense/active voice and 3rd person/past tense/passive voice.
- ❑ Writer understands the function of "section headers" in developing specific genres of written, scientific discourse and fulfills those rhetorical criteria in writing as a way to convey their own scientific thought and discovery.
- ❑ Writer understands the purpose and function of graphs, figures, and tables and fulfills those rhetorical criteria in writing as they pertain to producing various scientific documents.

WRITTEN LANGUAGE USE & COMPETENCY

Students write with control of the conventions of Standard Written English.

Benchmark indicators may include:

- ❑ Writer presents a text with minimal surface errors in punctuation, grammar, and spelling.
- ❑ Writer controls sentence boundaries and structure.
- ❑ Writer controls paragraph boundaries and structure.

Students approach writing as a process in which ideas and clarity of expression develop over time.

Benchmark indicators may include:

- Writer plans and organizes writing project.
- Writer produces multiple drafts.
- Writer revises content and style from draft to draft.

Students establish and maintain relevant focus in writing.

Benchmark indicators may include:

- Writer presents information relevant to the topic.

Students organize information into a unified discussion.

Benchmark indicators may include:

- Writer arranges concepts and facts in a particular order.
- Writer offers clear connections between data and ideas.

Students synthesize connections between scholarly literature, lecture presentations, and applied science.

Benchmark indicators may include:

- Writer establishes connections between diverse and complex data and concepts.
- Writer avoids presenting a random collection of information.
- Writer incorporates source information in support of discussion.

SCIENTIFIC & PROFESSIONAL STYLE

Students write in precise, unambiguous, economical prose.

Benchmark indicators may include:

- Writer uses clear, factual language.
- Writer uses 1st person/present tense/active voice or 3rd person/past tense/passive voice in appropriate documents.
- Writer avoids use of colloquialisms, slang, and conversational tone.

Students write in accordance with the scientific and professional style that is indicative of the conventions of their discipline.

Benchmark indicators may include:

- Writer establishes a clearly defined question to investigate.
- Writer uses appropriate headers as required by document format.
- Writer produces citations and bibliographies following CBE (Council of Biology Editors) guidelines.

- ❑ Writer distinguishes between scientific discussion and plagiarism.
- ❑ Writer produces a lab report using elements of scientific style.
- ❑ Writer produces a scientific paper using elements of scientific style.
- ❑ Writer produces a review paper using elements of scientific style.
- ❑ Writer produces a grant proposal using elements of scientific style.
- ❑ Writer produces a poster using elements of scientific style.