

Making Effective Writing Assignments in the Sciences

Resources compiled by Linda Tate, University of Denver Writing Program.
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Faculty looking for ideas and teaching strategies might also contact Doug Hesse in the University Writing Program at dhesse@du.edu or 303.871.7448. Also see our page "Science Writing for Students."

Multiple Assignments

["Writing in the Natural Science Department"](#)

Chabot & Tomkiewicz (*Writing Across the Curriculum* 1998) provide a good, clear, practical discussion of writing sciences from four science disciplines: biology, meteorology, science education and chemistry.

Reading-based Assignments

["Incorporating Writing into a General Education Historical Geology Course"](#)

Spencer (*Writing Across the Curriculum* 1995) focuses on teaching students about the different approaches to scientific writing. The author asks students to read three different types of scientific writing (journal article, popular science magazine article, newspaper article) and then summarize the pieces and analyze the forms in three separate essays.

["Reading the Primary Literature"](#)

A James Madison University professor outlines an assignment for a 200-level biology course.

Lab Reports

Two universities provide outstanding resources on writing lab reports:

- *North Carolina State University*: [LabWrite](#)
- *Virginia Tech*: [Science Writing course](#) (includes [annotated sample lab report](#) with specific directions and comments, [sample lab report](#) with evaluation cover sheet, and [grading criteria](#))

Reports/Memos

Virginia Tech provides excellent resources for writing reports and memos as part of its [Mechanical Engineering course](#) (includes [Formal Request for Reports](#) with assignment guidelines, PDFs of very useful [slide presentations on writing/engineering](#), and [evaluation criteria](#)).

Correspondence

["Communicating with Congress"](#)

The American Institute of Physics (1998) suggests effective methods for educating Congress members about scientific issues.

["I Received Your Letter about the Fruit Flies": Interdisciplinary Science Correspondence as a Means of Transforming the Laboratory Experience"](#)

Manahan & English (*The WAC Journal* 2002) present an interesting idea, though it would have applicability primarily as a classroom exercise.

Case Studies

["Case Studies Add Value to a Diverse Teaching Portfolio"](#)

Camill (National Science Teachers Association 2006) discusses the impact of case studies in the science classroom.

[National Center for Case Study Science in Teaching](#)

Many of the sample case studies provided here have embedded writing assignments.

Poster Presentations

["Term Paper Alternatives: Using Poster Sessions in Introductory Science Courses: An Example at Earlham"](#)

Farber & Penhale (*Research Strategies* 1995) describe a method for using the professional scientific format of the poster presentation.

Additional Information

A special issue of *Journal of Geological Education from 1991* provides a wealth of teaching strategies, sample assignments, and evaluation forms useful in *all* science courses.

- "Student Abstract Writing as a Tool for Writing Across the Curriculum in Large Introductory-Geology Courses"
- "Enhanced Student Learning through Writing in a Physical-Geology Class"
- "Learning Geology by Writing about the History of Geology"
- "Journal Assignments in an Introductory-Geology Course Help the Student and Teacher"
- "The Scientific Method and Writing in Introductory Landscape-Development Laboratories"
- "An Integrated Approach to Geologic Writing for Non-Science Majors Based on Study of a California River"
- "Writing Assignments Challenge Students in a Physical-Geology Course"
- "Classroom Strategies for Introductory Geology"
- "Land-Use-Planning Writing Assignment for an Environmental Geology Course"
- "Constructional Morphology and Exaptation as Perspectives for a Term Project in Paleontology"
- "Regional Geological Context for a Course in Petrography"
- "Integrating Undergraduate Research with a Writing Program"

- “Writing Assignments as a Continuum in Geoscience Education”
- “Early Writing in the Research Mode Via Digital Modeling of Rivers”
- “Balancing Teaching and Learning Geology on the Writing Fulcrum”
- “Geology Through Communication at Baylor University”