

Science Notebook Guidelines

Purposes:

Science Notebooks provide instructors with:

- A window into teachers' thinking and learning and reflects the instructional tasks carried out in the science class;
- An explicit way to model good content pedagogy; and
- A tool for formative assessment.

Science Notebooks allow teachers to

- Illustrate the skills and processes related to scientific inquiry;
- Promote application and integration of new information; and
- Provide a venue for expressing personal meaning and ownership of the learning.

Entries Should Include:

These are the types of entries and prompts the RMMS-MSP staff/instructors and Maria Araceli Ruiz-Primo found to be of greatest value to find out if teachers/students gained new conceptual and pedagogical understandings.

- Defining concepts in own words
- Pre-writing activity/assessment about prior knowledge (e.g. Quick Write)
- Predicting/Hypothesizing
- Designing Experiments or Field Observations
- Procedures of Experiments or Field Observations designed by teachers or the class as opposed to the instructor
- Reporting Claims and Evidence
- Interpreting Results/Concluding/Reasoning
- Providing new and/or multiple Examples illustrating concepts
- Reporting New Content Understandings
- Application to Content Pedagogical Knowledge and Pedagogy
- Reflections related to lab experience, discussions, readings, etc.
- Reflections related to readings related especially to world view

Formative Assessment:

Specific feedback from **all** instructors to teachers is critical to the process. At different points throughout the class the instructors should collect notebook pages with specified entries and provide written feedback about the content and/or pedagogy. Instructors can sample notebooks every night and/or review notebooks during the course while someone else is teaching.

Feedback should include comments that:

- Correct misconceptions;
- Expand teacher knowledge;
- Ask new questions that allow teachers to respond in depth.

Final Prompt and Collection of Notebooks for Review

At the end of each course, please provide your teachers with the **Quick Write** prompt provided below. We will use the information gathered to assess the teacher's perception of the value of their notebooks.

FINAL NOTEBOOK "Quick Write" PROMPT

Reflect upon the Rocky Mountain Middle School Project's use of Science Notebooks by responding to the following questions.

- 1. How did you use your science notebook during the class?*
- 2. How did your instructor use the science notebooks during the class?*
- 3. What types of entries and/or parts of your notebook do you value the most? Please refer to specific examples by page number or a marked page.*
- 4. Will you use, or continue to use, notebooks with your students? Why or why not?*
- 5. What are your new learnings, if any, about the use of science notebooks?*
- 6. Are there any additional comments you would like to add?*

Summative Assessment:

Chemistry is going to use the notebooks for a variety of purposes including summative assessment. If you're interested in pursuing this please contact Sharon Johnson at sharon852@earthlink.net