

TO THE STUDENT

Welcome to *Conceptual Academy*, which works as a guide for both the *concepts* and the *experience* of science.

Science can be a messy business. One question easily leads to many others. With so many potential paths to follow, the scientist can be easily diverted from an initial goal to a new one. This adds to the adventure, but a record of that adventure becomes critical. By analogy, consider an adventure into an uncharted jungle. In such a scenario, the value of careful documentation becomes immediately apparent. Where are you? Where are you going? What did you discover? How do you prove that you discovered it? Importantly, how do you get back to base camp?



There is much value in learning a science, such as physics, chemistry, or biology. For the full the scientific experience, however, you should also understand the value of careful documentation.


Toward this, as you move through this program you are wise to document your observations, experiences, ideas, questions, and reflections within an accompanying composition notebook. In the spirit of scientific exploration, we can refer to this notebook as your “field journal” or similar, such as “portfolio”. The quality of your work, submitted for assessment, will be a function of the quality of your field journal. This is to say, while performing any activity is surely important, also important is your ability to document clearly that which you performed. To guide you in this endeavor, on the following pages you will find a short list of best practices that will help you, and your instructor, to assess the quality of your documentation. Enjoy the journey!

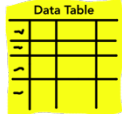

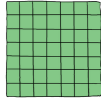



Field Journal Best Practices

A quality field journal is an easy to follow and accurate account of the researcher's experience

	Excellent	Satisfactory	Needs Improvement
<p>Text</p>  	<p>Legible writing in unerasable ink</p> <p>Ample space in front provided for a table of contents</p> <p>All pages numbered</p> <p>A date for each activity</p> <p>Author signature with each activity</p> <p>Formal language always used</p> <p>Procedures clear, easy to follow and can be readily reproduced by others</p> <p>No pages are torn out</p> <p>Supplemental pages or images firmly attached (staple/tape) within the journal or referenced as an appendix or external document.</p>	<p>Somewhat legible writing in unerasable ink</p> <p>Minimal space in front provided for a table of contents</p> <p>Most pages numbered</p> <p>Some activities dated</p> <p style="text-align: center;">--</p> <p>Some use of formal language</p> <p>Procedures are somewhat clear but not sufficient for others to reproduce</p> <p style="text-align: center;">--</p> <p>Supplemental pages or images loosely inserted within the journal at a proper location</p>	<p>Frequently non-legible writing with erasable ink or pencil</p> <p>No space in front provided for a table of contents</p> <p>No pages numbered</p> <p>No activities with dated</p> <p>Author signature not included</p> <p>Formal language lacking</p> <p>Procedures lack clarity and not sufficient for others to reproduce</p> <p>Pages torn out and missing</p> <p>Supplemental pages or images missing</p>

	Excellent	Satisfactory	Needs Improvement
<p>Pictures</p> 	<p>Student shown actively engaged in lab</p>	<p>Lab shown but student not in pictures</p>	<p>No pictures present</p>

	Excellent	Satisfactory	Needs Improvement
Data Tables 	All data include units All calculations performed correctly	Some data include units Some calculations performed correctly	No data include units Calculations not performed correctly
	Excellent	Satisfactory	Needs Improvement
Data Analysis 	All calculations include units Calculations are neatly laid out and readable	Some calculations include units Calculations are laid out but not very readable	Few calculations include units Calculations are missing
	Excellent	Satisfactory	Needs Improvement
Graphs 	Each graph includes informative title and labeled axes The relationships between variables is explained in effective detail	Does not include <i>both</i> title and axis labels The relationships between variables somewhat explained	No title and nor axis labels The relationships between variables is not explained
	Excellent	Satisfactory	Needs Improvement
Conclusion 	All required questions answered with sufficient detail Well-written, persuasive and descriptive account of events	Some required questions answered Adequate account of events	Few required questions answered Marginal account of events