

**Chemistry Laboratory Notebook
Grading Rubric**

Date: _____

Evaluator: _____

Student: _____

| Category | Novice | Apprentice | Exemplary |
|--|---|---|--|
| Organization <u>Comments:</u> | Many pages not numbered; Table of contents is missing or minimal | Most pages numbered; Table of contents is mostly up-to-date and complete | All pages numbered; Table of contents lists date, experiment title, and page numbers for each experiment |
| | Few or no titles, headings, dates | Titles, headings, and dates are clearly marked in most experiments | Each experiment has a descriptive title and date; all relevant section headings are present |
| | Several required sections are missing or incomplete; few to no references included | 1-2 sections are missing or incomplete; references occasionally included | All required sections have been included and are complete; all references included |
| Professional appearance <u>Comments:</u> | Pen is not used consistently; excessive crossing out of mistakes; lab partner signature consistently absent | Pen is used often; mistakes crossed out but not initialed; occasional verification by lab partner signature | Pen is used exclusively; mistakes crossed out with a single line and initialed; lab partner signature consistently present |
| | Many errors in grammar, spelling, scientific conventions, units | Few errors in grammar, spelling, scientific conventions, units | virtual absence errors in grammar, spelling, scientific conventions, units |
| | Excessive improper use of cutting and pasting of information (too much or too little) | Occasional improper use of cutting and pasting of information (too much or too little) | Proper use of cutting and pasting of information (too much or too little) |
| | Lack of effort to complete work in real time | Work apparently completed in real time for most experiments | Obvious effort to record work in real time for every experiment |
| Content <u>Comments:</u> | Unclear or off-the-mark hypothesis/purpose | Moderately appropriate and clear hypothesis/purpose | Consistently valid and scientifically relevant hypothesis/purpose |
| | Little introductory or background information provided for context | Some introductory or background information provided that is relevant to the experiments performed | Significant and valid background information is consistently provided |

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|---|--|---|--|---|--|---|
| Content <u>Comments:</u> | | Materials and methods are incompletely described or are difficult to follow | | Materials and methods are described adequately in most experiments and can be followed | | One could repeat the experiment from the materials and methods described |
| | | Clear lack of attention to detail in providing critical information regarding the physical properties of reagents as well as safety information | | The table of physical properties is occasionally incomplete and lacks sufficient detail to safely perform experiments | | The table of physical properties is complete and sufficiently detailed including pertinent safety information |
| | | The author has routinely failed to include reaction schemes, structures, or detailed/descriptive equipment sketches to help clarify the chemistry | | The author has occasionally included reaction schemes, structures, or detailed/descriptive equipment sketches to help clarify the chemistry | | The author has consistently included reaction schemes, structures, or detailed/descriptive equipment sketches to help clarify the chemistry |
| Results <u>Comments:</u> | | Observations are minimal or not recorded | | Observations are noted | | Observations are carefully recorded |
| | | Data and results are typically incomplete or missing; lack of regard for cross-referencing data with notebook pages | | Most data and results are included and generally complete and cross-referenced with notebook pages | | All data and results are included and properly annotated and cross-referenced with notebook pages |
| Analysis <u>Comments:</u> | | Data analysis is not described or included; many missing or incomplete calculations; little attention to significant figures | | Data analysis included, but methods used may not be fully described; most calculations have been shown with correct significant figures | | Data analysis is complete with sample calculations written out in full with the correct significant figures |
| | | Minimal error analysis | | Error analysis is qualitative | | Final results are accompanied by quantitative error estimates |
| Interpretation <u>Comments:</u> | | Conclusions are not typically documented | | Immediate thoughts are recorded for most experiments | | Results are interpreted in the context of the hypothesis being tested; inferences drawn and evidence cited. |

*** Some sections may not be evaluated depending upon the course