Science Methods Rubric rev 130824

| **Outcome** | **Level = 0** | **Below Basic = 1** | **Basic = 2** | **Proficient = 3** | **Advanced = 4** |
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| **Students will design experiments.** | Submitted assignment but failed to do this. | -Hypotheses: untestable  -Procedures: not useful  -Links to outcomes: absent | -Hypotheses: mostly testable  -Procedures: useful in part  -Links to outcomes: partial | -Hypotheses: clearly testable.  -Procedures: useful  -Links to outcomes: clear and well stated | -Hypotheses: testable & original  -Procedures: effective  -Links to outcomes: well developed and stated |
| **Students will conduct experiments and collect data.** | Submitted assignment but failed to do this. | -Experiments: incomplete  -Data: unusuable | -Experiments: complete  -Data: usable but with issues  -Independence: needed significant instructor help | -Experiments: complete  -Data: useful but not perfect  -Independence: modest assistance needed from instructor | -Experiments: complete, original  -Data: lovely  -Independence: minimal assistance needed |
| **Students will represent and analyze data.** | Submitted assignment but failed to do this. | -Tables and graphs: absent or very poor  -Data analysis: missing or incorrect | -Tables and graphs: OK, but with some issues  -Data analysis: partially complete or correct | -Tables and graphs: well done, with just minor problems remaining.  -Data analysis: nearly all correct and complete | -Tables and graphs: excellent  -Data analysis: excellent; any errors or omissions are minor |
| **Students will draw conclusions based on data.** | Submitted assignment but failed to do this. | -Conclusions: missing or inappropriate  -Reasoning: missing or incorrect | -Conclusions: incomplete or flawed  -Reasoning: present but not fully developed | -Conclusions: complete & correct -Reasoning: correct and well stated. Only some complex or contradictory data may not be handled completely. | -Conclusions: complete and correct; even insightful.  -Reasoning: correct and well stated. Even complex or contradictory data is handled well. |
| **Students will work effectively in teams.** | Submitted assignment but failed to do this. | -Individual contributions: some  -Role in team: minimal; the team is carrying the individual. | -Individual contributions: reasonable  -Role in team: modest; restates ideas contributed by others rather than advancing new ideas; may be at odds with the efforts of other members. | -Individual contributions: full share  -Role in team: full partner; shares in the organization and management | -As level 3, but also  -Role in team: actively engages teammates to advance team goals; provides useful suggestions; helps keep others focused and making positive contributions. |