A&S Goal: a liberally educated person uses quantitative methods effectively. a) Students will be able to use mathematical methods to solve problems; b) Students will be able to interpret, make inferences and draw conclusions from data; c) Students will be able to determine if numerical results are reasonable. (2-18-2014)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Criteria**  **Level** | **3**  **Exemplary** | **2**  **Competent** | **1**  **Beginner** | **0**  **Unsatisfactory** |
| ***Solves problems using mathematical methods.*** | Identify, rearrange and solve equation correctly, and interpret what it means. | Can identify, rearrange and solve equation correctly. | Can identify equation to use. | Shows no understanding in the use of mathematical methods to solve problems in the discipline. |
| ***Interprets, makes inferences, and draws conclusions from data.*** | Create a table or graph with correct and useful information. | Can identify what table or graph is needed and use information to solve a problem. | Given a graph or table can report the result. | Unable to interpret the data. |
| ***Determines whether numerical results are reasonable.*** | Understand what error tells you (looking at magnitude or direction) | Can compare experimental results with known (calculate error) | Can recognize if calculated error is possible. | Unable to determine whether numerical results are reasonable. |

*Comments:* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Worksheet

|  |  |  |
| --- | --- | --- |
| General Criteria | | Specific Criteria Related to Assessment |
| Level | |  |
| 0 | Shows no understanding in the use of mathematical methods to solve problems in the discipline.  Unable to interpret the data.  Unable to determine whether numerical results are reasonable. |
| 1  Skill: Identification | Can identify equation to use.  Given a graph or table can report the result.  Can recognize if calculated error is possible. |  |
| 2  Skill:  Description | Can identify, rearrange and solve equation correctly.  Can identify what table or graph is needed and use information to solve a problem.  Can compare experimental results with known (calculate error) |  |
| 3  Skill:  Explain | Identify, rearrange and solve equation correctly, and interpret what it means.  Create a table or graph with correct and useful information.  Understand what error tells you (looking at magnitude or direction) |  |