BMB Alignment Table Template

Please save this template as a separate working document for your group, with the filename as: Alignment LocationAbbr LastNameA LastNameB LastNameC.docx (e.g., Alignment USD Garcia Nguyen Smith.docx)

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Selected Aspect of BMB:
Foundational Skills

Keywords:
Search terms relevant to your alignment

Initial Overall Learning Goal:
• Students should understand the communication and comprehension of science, including how to access, assess, and use available information, and how to present scientific data.

Specific Learning Objective:
Students should be able to use visual and verbal tools to explain concepts and data.

• Overall Learning Goal: Students should understand the communication and comprehension of science, including how to access, assess, and use available information, and how to present scientific data.

<table>
<thead>
<tr>
<th>Specific Learning Objective</th>
<th>Specific Learning Assessment</th>
<th>Specific Learning Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students should be able to use visual and verbal tools to explain concepts and data.</td>
<td>Given a graph, students should be able to identify features, data, utilize data to support/disprove hypothesis.</td>
<td>Can be used in many of the activity learning methods (POGAL, PBL, Discussion, PLTL) Present students a graph(s) (oxygen saturation curve of hemoglobin, kinetics, etc different pH, temperature). Provide a hypothesis and students have to utilize graph(s) to support or disprove hypothesis. Have inquiring based questions to direct the students to the questions/skills.</td>
</tr>
</tbody>
</table>
**Assessment:**
Given a image of a graph, students should be able to **state** corresponding values if given x or y value, Should be able to **label** features
**Summarize** data visual comparison of actual graph features presented in the graph
**Relate/Interpret** a subset of the graphical data (between a and b, what is the trend)
**Evaluate** the relationship between a and b.
**Support or disprove** a hypothesis and/or theory with the graphical data

<table>
<thead>
<tr>
<th></th>
<th>Not Yet Proficient 1 pts</th>
<th>Approaching Proficient 2 pts</th>
<th>Proficient 3 pts</th>
<th>Highly Proficient 4 pts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State</strong> corresponding values if given x or y value,</td>
<td>Attempts to calculate values but obtained incorrect values.</td>
<td>Can calculate one value but not the other. (eg. can calculate x if given y but not the other way)</td>
<td>Can calculate values for both x and y</td>
<td>Demonstrate ability to calculate values of both x and y.</td>
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<tr>
<td>Should be able to <strong>label</strong> features</td>
<td>Does not label or attempt to label is incorrect.</td>
<td>Provide partial labeling but does not properly label all features.</td>
<td>Provide labels for most features.</td>
<td>Properly labels all features.</td>
</tr>
<tr>
<td><strong>Summarize</strong> data visual comparison of actual graph features presented in the graph</td>
<td>Attempt to summarize but is inaccurate or fails to include pertinent information.</td>
<td>Completes conversion of information but has an incomplete summarization of the data.</td>
<td>Skillfully converts relevant information from the graph But does not expand to a further or deeper understanding.</td>
<td>Skillfully converts relevant information from the graph in a way that contributes to a further or deeper understanding.</td>
</tr>
<tr>
<td><strong>Interpret</strong> a subset of the graphical data (between a and b, what is the trend)</td>
<td>Attempts to explain information presented but draws incorrect conclusions about what the information means.</td>
<td>Provides somewhat accurate explanations of information presented, but occasionally makes minor errors.</td>
<td>Provides accurate explanations of information presented.</td>
<td>Provides accurate explanations of information. Makes appropriate inferences based on that information.</td>
</tr>
<tr>
<td><strong>Evaluate</strong> the relationship between a and b.</td>
<td>Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means.</td>
<td>Provides somewhat accurate explanations of information presented but occasionally makes minor errors related to computations or units.</td>
<td>Provides accurate explanations of information.</td>
<td>Provides accurate explanations of information presented. Makes appropriate inferences based on that information.</td>
</tr>
<tr>
<td><strong>Support</strong> or disprove a hypothesis and/or theory with the graphical data</td>
<td>Presents an argument for which quantitative evidence is pertinent, but does not provide adequate support. (May use quasi-quantitative words such as &quot;many,&quot; &quot;few,&quot; &quot;increasing,&quot; &quot;small,&quot; and the like in place of actual quantities.)</td>
<td>Uses quantitative information, but does not effectively connect it to the argument or purpose of the work.</td>
<td>Uses quantitative information in connection with the argument or purpose of the work, though data maybe presented in a less than completely effective format.</td>
<td>Uses quantitative information in connection with the argument or purpose of the work, presents it in an effective format.</td>
</tr>
</tbody>
</table>

**Strategy:**
Design your classroom or laboratory strategy here, and be sure to include the time allotted.
Can be use in many of the activity learning methods (POGAL, PBL, Discussion, PLTL)
Present students a graph(s) (oxygen saturation curve of hemoglobin, kinetics, etc different pH, temperature). Provide a hypothesis and student have to utilize graph(s) to support or disprove hypothesis.

Have inquiring based questions to direct the students to the questions/skills.

What is the values x if given y value,
Label or highlight important features of the graph
Based on the graph of the data, have student summarize data presented in the graph
Interpret a subset of the graphical data (between a and b) and identify trend/relationship (same graph or between different graphs)
Support or disprove a hypothesis and/or theory with the graphical data

50 minute activity, Could be streamlined for 30 minutes.