Activity 5: Evaluating Experiment Conclusions

Key Question

Explore Your Ideas

1. What makes the reasoning used to support a conclusion poor?

Make Sense of Your Ideas

Look over the reasons used by Students B, C, D, and E.

1. For which student(s) is the reason poor because it includes an opinion, rather than evidence?

2. For which student(s) is the reason poor because it only uses part of the data, rather than all the available data?
Our Consensus Ideas

The key question for this activity is:

How can you tell when a supporting reason for a conclusion is good or poor?

1. Based on what you learned in this activity, work with your partner to write your answer to the key question.

2. First circle all the criteria that apply to Carlos’ conclusion in the left column. Then explain your reasoning in the right column.

<table>
<thead>
<tr>
<th>Use the Criteria</th>
<th>Evaluate the Conclusion - Carlos</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><strong>Step 3</strong></td>
</tr>
<tr>
<td>The experiment is a fair test.</td>
<td>We think Carlos’ conclusion</td>
</tr>
<tr>
<td>Yes  No</td>
<td>valid, because</td>
</tr>
<tr>
<td>If it is a fair test, go to Step 2.</td>
<td></td>
</tr>
<tr>
<td>If it is not, go to Step 3.</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
</tr>
<tr>
<td>Each supporting reason is based on evidence, not opinion.</td>
<td></td>
</tr>
<tr>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>The supporting reasons use all the available evidence (data), not just part of the evidence.</td>
<td></td>
</tr>
<tr>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>Go to Step 3.</td>
<td></td>
</tr>
</tbody>
</table>
3. First circle all the criteria that apply to Nguyen’s conclusion in the left column. Then explain your reasoning in the right column.

<table>
<thead>
<tr>
<th>Use the Criteria</th>
<th>Evaluate the Conclusion - Nguyen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
</tr>
<tr>
<td>The experiment is a fair test.</td>
<td>We think Nguyen’s conclusion __________valid, because __________(is, is not)</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>If it is a fair test, go to Step 2. If it is not, go to Step 3.</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
</tr>
<tr>
<td>Each supporting reason is based on evidence, not opinion.</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>The supporting reasons use all the available evidence (data), not just part of the evidence.</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Go to Step 3.</td>
<td></td>
</tr>
</tbody>
</table>