

## Designing Effective Projects: Teaching Thinking Assessing Thinking in a 9-12 Classroom

### Assessing Thinking: Grades 9-12

In [The Case of the Mysterious Malady](#), located in the [Showing Evidence Tool](#), chemistry students act as investigators when they analyze evidence and apply gas laws to determine the most likely source of a potential toxin. They use *Showing Evidence* to organize clues and draw a conclusion, then argue their case in a mock court of law.

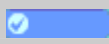




#### Assessing Process

The teacher will use the following checklist to monitor students' understanding of the principles of arguments. Data can be collected from journal entries, observation of small- and large-group discussions and individual interviews.






	Understands concepts of claim and evidence	Composes a claim correctly	Correctly evaluates the quality of evidence	Selects appropriate evidence to support claim
<i>Alicia</i>				
<i>Bobby</i>				
<i>Dirk</i>				
<i>Ellen</i>				






#### Assessing Product

Students use this rubric to assess the quality of the source for the evidence they gather to use in the mock trial.

Rating					
<b>Author</b>	Individual	Individual or Expert	Creditable Author	Expert in the field	Expert in the field
<b>Sponsoring Organization</b>	None	Biased Organization	Unbiased Organization	Credible Organization	Credible Organization
<b>How strong is the evidence?</b>	Based on opinion	Opinion based slant	Gives both pros and cons of the usage	Factually based	Facts that are statistically supported






Students use another rubric to assess how well the evidence supports their claim.

				
The evidence has little effect on the determination of whether the claim is true or valid.	The evidence seems to support the claim, but there are still significant uncertainties as to whether that support really proves the claim is true.	There are other elements that come into play so that this evidence is not terribly important, but it does help to build the case.	There is a small amount of room for interpretation or other variable, but basically the evidence is strong in its support of the claim.	Considering for the moment that the evidence is true, it makes a very strong case for the claim.

				
The evidence has little effect on the determination of whether the claim is not true or valid.	The evidence does seem to weaken the claim, but there are still significant uncertainties as to whether that opposition really proves the claim is false.	There are other elements that come into play so that this evidence is not terribly important, but it does help to build the case against the claim.	There is a small amount of room for interpretation or other variable, but basically the evidence is strong in its opposition of the claim.	Considering for the moment that the evidence is true, it makes a very strong case against the claim.

**Assessing One's Own Work**

Students assess the quality of their argument before coming to a final conclusion.

(no stars)					
Considering all of the evidence and the quality of that evidence, this claim has absolutely no merit and has been proven beyond a shadow of a doubt to be untrue.	Although there are elements of truth in this claim, the evidence casts such considerable doubt as to the truth of this claim, that it is fairly clear that the claim is not true and/or valid.	Circumstantial or minor evidence does seem to support this claim, but not enough to make a determination. "Reasonable doubt" exists.	The evidence provided does support the claim, but there are still uncertainties as to whether that support really proves the claim is true. This rating is the result of a "hung jury."	There is a small amount of room for interpretation or other variable, but considering all of the evidence and the quality of that evidence, the claim is strongly supported and is most likely true and/or valid.	Considering all of the evidence and the quality of that evidence, it is quite obvious that this claim is true and valid.

**Conclusion**

Student weigh the merits of each claim and explain their reasoning.

**Final Check**

Students provide evidence and explanations to show that they have accomplished the following objectives for the unit.

1. I understand what claims and warrants are.
2. I can compose a correct claim.
3. I can evaluate the quality of evidence.
4. I can select evidence that is appropriate to support my claim.