

## Sample Argumentation Framework

The definitions below are adapted from *Science as Inquiry in the Secondary Setting* (Luft, Julie, Randy L. Bell, and Julie Gess-Newsome, editors. 2007. NSTA Press.). The rubric is modified from McNeil et. al. (2007).

- **Claim:** This is an assertion or conclusion addressing the original question or problem.
- **Evidence:** This is data or facts that support the claim. Data may come from student-completed investigations, observations, archived data or other data sets, or reading material. Data must be appropriate and relevant to the problem and sufficient to convince another of the claim. This often requires multiple pieces of data.
- **Reasoning:** Includes statements that link the evidence to the claim, showing why the data counts as evidence to support the claim. Reasoning often includes appropriate scientific principles.

	Level			
	0	1	2	3
<b>Claim:</b> An assertion that answers the original question.	Does not make a claim.	Makes an inaccurate or inappropriate claim.	Makes an appropriate but incomplete claim.	Makes an accurate and complete claim.
<b>Evidence:</b> Scientific data that supports the claim. Data need to be appropriate and sufficient.	Does not provide evidence.	Provides inappropriate evidence.	Provides appropriate but insufficient evidence.	Provides appropriate and sufficient evidence to support the claim.
<b>Reasoning:</b> A justification that links the claim and evidence, using appropriate and sufficient scientific principles.	Does not provide reasoning.	Reasoning does not link evidence to claim. Scientific principles are missing, vague, or inaccurate. May rely on informal / non-scientific principles.	Reasoning links some of the evidence to the claim. Includes some, but insufficient scientific principles.	Reasoning links multiple forms of evidence to claim. Includes appropriate and sufficient scientific principles.

**Discourse** is an important part of students developing argumentation skills. This rubric is meant to assist teachers in assessing the progress of their classes along a discourse continuum. Geniverse provides opportunities for students to share and evaluate their drake breeding strategies and to argue their claims using evidence from the software.

	Level			
	0	1	2	3
<b>Discourse:</b> Involves engaging students in talk about explanations.	Does not engage in discourse about explanations.	Explanations are shared or presented to others without evaluation of evidence or reasoning.	Occasional, teacher-led discourse that involves the evaluation of multiple competing explanations.	Frequent, student-initiated discourse that involves the evaluation and rebuttal of competing claims.