Argument Writing in Science Rubric

Based on the Massachusetts Science, Technology & Engineering Framework and English Language Arts Framework
Grades 11-12

Description	Novice	Developing	Proficient	Advanced
Claim (A statement or conclusion that answers the original question/problem based on evidence) A clear arguable claim is made to answer a question	Does not make a claim or the claim is not relevant to the question Does not establish the significance of the claim Does not distinguish the claim(s) from alternate or counterclaims	Makes an incomplete or unclear claim that is relevant to the question Attempts to, but does not clearly establish the significance of the claim Attempts to, but does not clearly distinguish the claim(s) from alternate or	Makes a clear, knowledgeable claim relevant to the question Establishes the significance of the claim(s) Distinguishes the claim(s) from alternate or counterclaims	Makes a clear, knowledgeable and insightful claim relevant to the question Establishes the significance of the claim(s) Clearly distinguishes the claim(s) from alternate or counterclaims
Evidence (Scientific data that supports the claim) Relevant and sufficient evidence is provided from accurate, reliable sources to support the claim(s) and counterclaims	Does not provide evidence to support the claim or only provides evidence that is not relevant or is unreliable Does not develop claim(s) and counterclaims fairly and thoroughly-the strengths and limitations of both are not addressed	rounterclaims Provides relevant, but insufficient evidence to support the claim(s) and counterclaims Most of the evidence is from accurate, reliable sources Attempts to develop claim(s) and counterclaims fairly and thoroughly, but does not point out the strengths and limitations of both	Provides the most relevant and sufficient evidence to support the claim(s) and counterclaims The evidence is from accurate, reliable sources Develops claim(s) and counterclaims fairly and thoroughly, pointing out the strengths and limitations of both	Provides the most relevant and sufficient evidence to support the claim(s) and counterclaims The evidence is from accurate, reliable sources Develops claim(s) and counterclaims fairly and thoroughly, pointing out the strengths and limitations of both Evaluates key evidence in light of explicit criteria and other cited evidence

Reasoning (the big scientific idea or principle that connects the claim	Does not provide logical reasoning to connect the claim and evidence, or	Provides weak reasoning to link the claim and evidence	Provides strong, logical reasoning to link the claim and evidence	Provides strong, logical reasoning to link the claim and evidence
and evidence)	provides inappropriate reasoning	Chachee	and emacines	The reasoning demonstrates
Logical reasoning is provided to link the claim and the evidence.				understanding that is beyond grade level expectations
Organization	The claim is not	The claim is introduced at	The claim is introduced at	The claim is introduced at
	introduced at the	the beginning of the	the beginning of the	the beginning of the
The argument is logically organized	beginning of the argument	argument	argument	argument
	The argument is unorganized and there is no logical sequence of the claim(s), counterclaims, reasons and evidence	The argument is not clearly organized in a way that logically sequences claim(s), counterclaims, reasons and evidence	The argument is organized in a way that logically sequences claim(s), counterclaims, reasons and evidence	The argument is skillfully organized in a way that logically sequences claim(s), counterclaims, reasons and evidence
Audience	Does not anticipate the	Attempts to anticipate	Anticipates the audience's	Anticipates the audience's
The writer anticipates	audience's knowledge	the audience's knowledge	knowledge level, concerns,	knowledge level, concerns,
The writer anticipates the nature and needs of	level, concerns, values,	level, concerns, values,	values, and possible biases	values, and possible biases
the audience	and possible biases	and possible biases, but not all of these factors are considered		and skillfully tailors the argument using this knowledge
Cohesion	Does not use words, phrases, and clauses to	Uses words, phrases, and clauses to link the major	Uses words, phrases, and clauses as well as varied	Uses words, phrases, and clauses as well as effective
The writer connects the	link the major sections of	sections of the text some	syntax to link the major	varied syntax to skillfully link
text in a cohesive	the text	of the time	sections of the text, create	the major sections of the
manner and clarifies			cohesion, and clarify the	text, create cohesion, and
components of the	The argument is not	Attempts to create	relationships between	clarify the relationships
argument	cohesive	cohesion, but the	claim(s) and reasons,	between claim(s) and
		argument is disjointed at	between reasons and	reasons, between reasons
	The relationships	times	evidence, and between	and evidence, and between
	between claim(s) and		claim(s) and counterclaims	claim(s) and counterclaims
	reasons, between	The relationships		

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	reasons and evidence,	between claim(s) and		
	and between claim(s)	reasons, between reasons		
	and counterclaims are	and evidence, and		
	not clarified	between claim(s) and		
		counterclaims are not		
		clearly clarified		
Style and Tone	Does not establish and	Establishes and maintains	Establishes and maintains a	Establishes and maintains a
	maintain a formal style	a formal style and	formal style and objective	formal style and objective
The writer uses a formal	and objective tone	objective tone throughout	tone while attending to the	tone while attending to the
style and objective tone		some of the argument	norms and conventions of	norms and conventions of
	Does not attend to the		the discipline	the discipline. Effectively
	norms and conventions	Attempts to attend to the		uses rhetorical devices (such
	of the discipline	norms and conventions of		as metaphor, analogy, etc.)
	•	the discipline		
Conclusion	Does not provide a	Provides a weak	Provides a concluding	Provides a concluding
	concluding statement or	concluding statement or	statement or section that	statement or section that
A conclusion is provided	section that follows from	section that partly follows	follows from and supports	follows from and supports
that supports the	and supports the	from and supports the	the argument presented	the argument presented.
argument	argument presented, or	argument presented	β ε ε β	Articulates implications and
	the concluding	angument processes		significance of the claim in
	statement or section			terms of both the world and
	does not follow from or			related evidence.
	support the argument			related evidence.
	presented			
Science Content and	Does not demonstrate	Demonstrates a fairly	Demonstrates a deep	Demonstrates a deep,
Vocabulary	an understanding of the	accurate understanding of	understanding of the topic	sophisticated understanding
,	topic and does not use	the topic and use	and use scientific vocabulary	of the topic and use
The writer demonstrates	scientific vocabulary	scientific vocabulary	appropriately and accurately	advanced scientific
an understanding of the	appropriately or	appropriately and	throughout the argument	vocabulary appropriately
topic and uses scientific	accurately in the	accurately in some places		and accurately throughout
vocabulary appropriately	•	,		•
vocabulary appropriately	argument	in the argument		the argument

Source: Janet MacNeil, http://the-curious-scientist.weebly.com/curriculum.html