NTN Knowledge and Thinking Rubric for Science Argumentation/Explanation, Grade 8

The ability to reason, problem-solve, develop sound arguments or decisions, and create new ideas by using appropriate sources and applying the knowledge and skills of a discipline.

	EMERGING	E/D	DEVELOPING	D/P	PROFICIENT High School Ready	P/A	ADVANCED High School Level
ARTICULATING A SCIENCE-RELATED ISSUE *What is the evidence that the student can articulate a clear issue and explain relevant background science content?*	• The science related issue is **unclear** • Background Science content is **irrelevant** or contains **major inaccuracies**		• The science related issue is **clear** but **general** • Background Science content is **relevant** and **generally accurate** (with minor inaccuracies)		• The science related issue is clear and **specific** enough to guide investigation • Background science content is **relevant** and **accurate**		• The scientific, social, or technological significance of the issue is clear and lends itself to a **well-defined** research project • Science content is accurate and discusses **specific connections** to the issue
ARGUMENT/THESIS *What is the evidence that the student can communicate an argument/thesis?*	• Argument/Thesis is **unclear**		• Argument/Thesis is **somewhat clear**, but **general**		• Argument/Thesis is **clear**		• Argument/Thesis is clear and **specific**
CLAIMS/SUPPORTING IDEAS *What is the evidence that the student develop claims/ideas to support the argument/thesis?*	• Includes **unclear** or **irrelevant** claims/supporting ideas		• Includes claims/supporting ideas that are **relevant** to the argument/thesis		• Includes relevant claims/supporting ideas that **support** the argument/thesis		• Includes **specific** claims/supporting ideas that support the argument/thesis
COUNTERCLAIMS (OPTIONAL)* *What is the evidence that the student can acknowledge and address counterclaims, when appropriate?*	• Questions or counterclaims are **absent or unclear**		• **Alludes to** questions or counterclaims		• **Includes and begins to respond** to **clearly stated** questions or counterclaims		• **Develops** and responds to clearly stated questions or counterclaims
EVIDENCE *What is the evidence that the student can support the argument?*	• Refers to evidence (e.g. examples, data, information) that is **unclear** or **irrelevant** to the claim/counterclaim • **Limited** use of data and/or examples (when appropriate)		• **Identifies limited** or **general** evidence (e.g. examples, data, information) **mostly** relevant to claim/counterclaim • Data and/or examples are used to illustrate **one** point of view (when appropriate)		• Cites **specific** evidence (e.g. examples, data, information) relevant to claim/counterclaim • Data and/or examples are used to illustrate **varying** points of view (when appropriate)		• Cites **comprehensive**, **detailed** evidence (e.g. examples, data, information) relevant to claim/counterclaim • Data and/or examples are used to illustrate **multiple** varying points of view (when appropriate)

ANALYSIS AND SYNTHESIS *What is the evidence that the student can analyze evidence?*	• **Does not attempt to explain how** evidence supports the argument • **Presents** source/s **without** noting strengths, limitations, or discrepancies between sources (when appropriate)	• **Summarizes** evidence **and attempts to explain** how it connects to argument • **Expresses broad agreement/ disagreement** with sources but does not explain (when appropriate)	• **Explains** how evidence **is relevant** to the argument • **Acknowledges and attempts to explain** the strengths and limitations of evidence (when appropriate)	• **Explains** how evidence **connects** to the argument • **Acknowledges and attempts to explain** the strengths and limitations of evidence, **identifying** discrepancies between sources (when appropriate)
CONCLUSION *What is the evidence that the student can draw logical and sound conclusions?*	• Conclusions are **unclear**, **implausible**, or **missing** • **Does not address** limitations or unanswered questions	• Conclusions are **generally plausible**, but **disconnected** from the argument; **no implications** are raised • **Briefly notes** limitations or unanswered questions	• Conclusions are **connected** to the argument; raises plausible implications • **Describes general** limitations or unanswered questions	• Conclusions are **logical** and **specific**; raises **plausible** implications • **Identifies** limitations and/or unanswered questions

*Counterclaims will not be required or appropriate for all kinds of writing (e.g. explanatory) and should be considered optional based on task requirements.