Understanding and Supporting Reasoning with Evidence

	Making Claims	Providing Support	Constructing Arguments	Raising Questions
Key Components	**Assertions & Theories**	**Evidence & Evaluation**	**Reasoning & Structure**	**Skepticism & Critique**
Forms this takes & various sub-moves involved	• Recognizing & expressing patterns (E.g. Looking at multiple examples or ideas… seeing a pattern and making a deduction.) (exemplar) • Creating a general rule from specific examples (inductive) • Starting from a general rule and moving to a specifics (deductive) • Creating an explanatory hypothesis (abductive) • Understanding a whole by understanding its parts? (decompositional) • Identifying possible causal links (when this, then that) (cause/effect) • Formulating & expressing personal views or opinions (argument)	• Identifying & presenting evidence • Identifying the "source" of evidence, clearly stating where the evidence comes from • Justifying use of evidence • Evaluating evidence for its validity • Is the evidence relevant to the argument? • Triangulating evidence; providing multiple sources to prove validity of evidence • Responding to opposition statements with more evidence. • Identifying criteria that inform what is evidence	• Justifying the purpose of evidence and how it supports the argument • Connecting evidence to claim • Connecting and sequencing ideas: ideas relate to one another and are in a valid order • Filling in gaps of missing evidence • Identifying assumptions between the evidence and the claim. • Explaining causal statements, naming exactly how the evidence is valid and relevant to the argument • Forming conclusions and a final evaluation of a claim	• Identifying and providing counter arguments • Identifying and taking alternative perspectives • Identifying other's opinions and assertions made in text or speech • Constructing opposing statements • Identifying information that does not provide evidence of claim • Identifying limitations and weaknesses of evidence • Questioning source of evidence and identifying interpretation bias • Doubting causal relationships between evidence and argument
Questions that encourage the thinking in different contexts	Tending to Math/Science • What patterns can you find? • How might you organize your data to help you look for a pattern?	• What do you see, hear, know, that makes you say that? • What was the source for my evidence? • Does this evidence come	• Are you supporting the original claim or are you making a slightly different but related claim? • Is the connection between your evidence and claim	• What could be the opposite statement of this claim? • Why would someone argue with you about your reasoning? About your

Note: These questions can relate to all subjects, we are noting which subjects they tend to pertain to more frequently Note: We might want to think in terms of questions to help students when totally stuck… and questions that push thinking to another level.	• What are you noticing? • What do you think is going on? • What happens when you…? Tending to Literature/Journalism • What do you think the author believes? • What's the author's main point? • What is the author trying to convince you of? • What's your view/take on this?	with someone's interpretation or opinion? • How can we be surer this evidence is true or false? • Why is this evidence really the best example to prove your point? • What makes your evidence so important to your argument? • Could this evidence actually be proving something else instead of what you intended? • Can you go back and find any further evidence to substantiate your claim? • What other evidence could confirm the point/meaning of the evidence you have?	clearly stated? • How do your ideas flow from one idea to the next? • What are the reasons your evidence is important to your argument? • What are the reasons your arguments should be accepted? • What's the final message you want to give your reader or audience about this claim? • NOTE – Perhaps there's a routine for stepping back and assessing?	evidence? • How might a "difficult" or argumentative person think about this? • What parts of the argument look like an opinion or assertion? • Why do you agree/disagree? What evidence makes you say that? • Is there anything that weakens or distracts from your reasoning? • How do you really know that piece evidence is true? • Does that evidence mean what you think it means or could there be another conclusion? • What other evidence would convince you that this claim is valid or invalid? • What's missing from this argument? • What's a case in which this claim would not be true? What are the exceptions? • Could this claim be proven by an entirely different explanation?
Markers of quality	• Related to the topic at hand • Intellectually stimulating • Arguable/debatable • Researchable	• Identifying multiple forms of evidence to support a claim • Evaluate the validity of the source • Clearly stating the form,	• Forming sequential order of reasoning • Preparing for possible counter arguments • Using clear and specific	• Looking past the surface details and analyzing underlying premises and implications • Analyzing a statement for

	• Able to be proved or disproved with evidence • Grounded in source material	specifically the source, of the evidence: a) Personal belief b) Knowledge from observation c) Sensory experience d) What we heard/read from a source outside of ourselves	language • Explaining the connection between evidence and the claim. • Using causal language • Identifying the strength of evidence • Making strong conclusions based on evidence.	hidden assumptions and misinterpretations… • analyzing seemingly true statements to uncover misrepresented or misunderstood information. • Supporting a rebuttal with evidence • Providing a clear explanation of alternative views or scenarios
Typical struggles	• Broad, highly general claims • Hard to follow claims • Easily disproven claims • Claim is not debatable, already generally agreed upon.	• Not clearly identifying the source of the evidence. • Only one form/source of evidence. • Evidence without accompanying reasoning as if the fact is self-evident. (reword?) • Including information that is not evidence • Using the argument/claim to support the argument/claim	• Not connecting evidence with reasoning • Connecting a third unrelated variable • Introducing something new • Misinterpreting a cause and effect relationship FLAG: reword (correlational rather than causal relationship – e.g. SES and school performance	• Holding onto one's own views and beliefs instead of being open to alternative viewpoints, or unexpected truths. • Accepting any argument as true without assessing the quality or validity
Possible helps and language scaffolds	• When this, then… • If this…then • What seems controversial is… • Those who disagree claim that… • This matters because… • The problem is… • I believe, I think	*(knowledge from observation)* • *evidently… I induce…* *(sensory experience)* • *it feels/sounds/looks like* *(what we heard/read from outside source)* • *as Jane said…* • *on page 12 it says…* • *the rules say…* • *the author wrote…* • *the graphic showed…* • *an example is…* *(if/since… then")* • *X should be able to… presumably… oddly enough… of course…*	• Check your sequencing by asking: "What is the cause?" "What is the effect?" • How does this relate to what was just said? • What makes your evidence so important to your argument? • Do I have to leap over an "empty space" when connecting my evidence to my claim? • Did I add new unrelated or unsubstantiated info?	Language scaffolds: • But what if… • Another way to look at this is… • This doesn't account for… • What's missing is… • What you're forgetting about is… • This sounds good, but what about…