

DOK Levels	English Language Arts	Social Science	Science	Mathematics
<p><b>Level One (Recall/Reproduction)</b></p>	<ul style="list-style-type: none"> <li>** Sequence events in a narrative that can be used as evidence to support a position</li> <li>** Deploy argument constructs during a Socratic seminar or argument-based discussion</li> <li>** De-code figurative language in poetry in order to prepare for interpretive arguments</li> <li>** Match prepared argumentative claims to overall interpretive positions</li> <li>** Select from a list of transitions and deploy them in a revision, to improve the fluidity of an argument essay</li> </ul>	<ul style="list-style-type: none"> <li>** Take notes in a Video Annotator that can later be used to support</li> <li>** Paraphrase the debatable issue and prepared arguments for a position on an issue</li> <li>** Consult the tracking form being maintained by the teacher during a structured argumentation activity or debate, in order to prepare responses to other arguments and to prepare a speech</li> <li>** Find a candidate's position on key electoral issues and flesh out the arguments the candidate makes to defend those positions</li> </ul>	<ul style="list-style-type: none"> <li>** Record data in instruments designed to collect and pre-process experimental results</li> <li>** Convert data into visual representation (graphs, charts), leading to its analysis as evidence</li> <li>** Maintain organization and adherence to protocol during a multi-sided group debate on a scientific question</li> <li>** Establish the spectrum of possible conclusions for which arguments can be made on a unit's scientific debatable issue</li> </ul>	<ul style="list-style-type: none"> <li>** Enumerate the rules, principles, theorems, and strategies that can be used to solve a problem</li> <li>** Perform or review mathematical computation in preparation for an argument justifying a solution</li> <li>** Define the terms and language of argumentation, as they apply to mathematics</li> <li>** Color-code steps or stages in mathematical argumentation</li> <li>** Name the theorem or principle described by examples of mathematical reasoning</li> </ul>
<p><b>Level Two (Skill/Concept)</b></p>	<ul style="list-style-type: none"> <li>** Cluster evidence from a Selected Passages document into groups that can support discrete interpretive arguments</li> <li>** Formulate argumentative claims that are focused, clear, and organized and that align with the best evidence to support a position</li> <li>** Apply the three-step process of reasoning -- accent, connect, and emphasize -- so that evidence in an argument builder is analyzed for the ways that it proves the interpretive claims being made</li> <li>** Implement a series of argument paragraph templates that produce a coherent, well-evidenced, reflective, refutational interpretive argument on a debatable issue</li> </ul>	<ul style="list-style-type: none"> <li>** Apply historians' mode of reading and thinking (e.g., contextualization) to a document so as to cull evidence</li> <li>** Generate open, text-based questions for an argument-based seminar on a historical or social science issue</li> <li>** Summarize informational text to use as evidence to back up a claim</li> <li>** Complete an Idea Identifier and Analyzer Form on a long article, set of documents, or book chapter</li> <li>** Brainstorm reasons that a position or thesis on a debatable historical question is valid, and revise the formulation of those reasons into argumentative claims</li> <li>** List out the qualifications and potential biases of sources</li> </ul>	<ul style="list-style-type: none"> <li>** Annotate a list of scientific papers or articles with emphasis on their relevance to the scientific question that addressed through argument</li> <li>** Choose the most compelling arguments to make to support a scientific conclusion produced in light of experimentation or inquiry</li> <li>** Analyze quantitative data to process it into substantive evidence to support argumentative claims that defend a scientific conclusion</li> <li>** Produce scientific reasoning models to be implemented in argument building</li> <li>** Assess the methodology of scientific research so as to be able to defend or attack it in an Argument Exchange</li> </ul>	<ul style="list-style-type: none"> <li>** Think meta-cognitively about the mathematical formulae, rules, principles, or theorems used to solve a problem and articulate the reason each one is appropriate</li> <li>** Complete a graphic organizer that requires that students can justify, using computational evidence and mathematical reasoning, their solutions to a complex set of questions</li> <li>** Produce computation for problems for which reasoning justifying the application of principles or strategies is provided</li> <li>** Identify the flaws in reasoning in intentionally mistake-ridden solutions to a set of complex problems</li> </ul>

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<p><b>Level Three (Strategic Thinking)</b></p>	<p>** Frame a focused &amp; balanced debatable issue on a novel  ** Prepare counter-arguments that are both critical and independent to arguments supporting an opposing interpretation of a literary work  ** Complete an argument builder that makes a strategically-designed and organized case for an interpretation or argumentative position on the meaning of a text or the most defensible response to a question raised by a text  ** View a video of a classroom argument-based seminar and identify proficiencies and deficiencies in engagement, reference to textual evidence, and critical thinking</p>	<p>** Track accurately and in real-time the arguments being made by oneself and one's partner, and one's opponents, in classroom debate  ** Assess the quality of evidence gathered to support arguments to be made in an essay on the basis of its alignment with claims, credibility, sufficiency, and reasoning  ** Deliver a rebuttal during a classroom debate that thoroughly refutes each of the counter-arguments made by the other sides  ** Flow an electoral debate and evaluate and critique the candidates' use of evidence and refutation in writing</p>	<p>** Draw a conclusion and formulate argumentative claims that support it, based on analysis of a data set  ** Assemble and present scientific findings as a conclusion and arguments for that conclusion to an appropriate audience  ** Critique the conclusions and findings of scientists whose work contradicts yours, or whose work is not scientifically valid  ** Revise and improve arguments to support a conclusion on a question about natural phenomena in light of effective critiques made in a classroom structured argumentation activity</p>	<p>** Complete a two-column graphic organizer called Solve It, Say It in which each step of a solution to a math problem is matched with a verbalization of why it is valid  ** Reflect on a solution offered by another student or group and prepare a critique of their strategy or reasoning in solving the problem  ** Participate in a Math Talks in which you make multiple arguments for your chosen strategy to solve a complex problem  ** Apply mathematical argumentation to a set of real-world word problems  ** Evaluate the relative validity and utility of multiple, competing strategies to solve a set of problems</p>
<p><b>Level Four (Extended Thinking)</b></p>	<p>** Write an academic essay in which you address arguments raised in a classroom debate or argument-based discussion, presenting sufficient evidence and reasoning to address all substantial points on the issue in an thesis-driven piece  ** Write a well-researched and thorough rebuttal to a famous literary essay  ** Apply an argument-based framework, requiring evidence-based interpretations and critical thinking, to a creative, performative, or arts-related project  ** Play the role of moderating and adjudicating magistrate in a moral, ethical, or criminal trial of a character from a play, film, or novel</p>	<p>** Research and compose a long paper on an open historical or social-science question that makes evidence-based arguments, refutes multiple counter-arguments, and evaluates clashing argumentation  ** Use an assessment rubric incorporating all five key components to academic argumentation to evaluate student performance in a classroom debate  ** Judge a classroom debate on a historical or social science issue  ** Deploying a Structured Academic Controversy format, evolve from a binary position on an issue to a nuanced, syncretic, original position, supported by recombining the best evidence from both sides</p>	<p>** Design a project to argumentatively test possible scientific interpretations  ** Create a publication-worthy scientific report that brings together all elements of a unit's instruction into a developed scientific argument with highly credible and sufficient data-backed evidence and engagement with and refutation of critical response  ** Conduct a critical review of the work of peers who conduct an investigation, gather and record data, do interpretive analyses, arrive at a conclusion, formulate claims, support those claims with evidence, and address critical or skeptical questions or critique</p>	<p>** Originate assessments (or self-assessments) that require the demonstration of critical thinking and the use of evidence to support arguments justifying a solution  ** Produce a set of complex problems and an assessment rubric to measure students' ability to argumentatively defend their solutions  ** Engage in a full classroom debate on larger contextual questions on the origin, philosophical basis, utility, or socio-political applications of mathematics or technology, including an evaluation component</p>