

## Hess' Cognitive Rigor Matrix & Curricular Examples: Applying Webb's Depth-of-Knowledge Levels to Bloom's Cognitive Process Dimensions -

### Writing

Revised Bloom's Taxonomy	Webb's DOK Level 1 Recall & Reproduction	Webb's DOK Level 2 Skills & Concepts	Webb's DOK Level 3 Strategic Thinking/ Reasoning	Webb's DOK Level 4 Extended Thinking
<b>Remember</b> Retrieve knowledge from long-term memory, recognize, recall, locate, identify	<ul style="list-style-type: none"> <li>Complete short answer questions with facts, details, terms, principles, etc. (e.g., label parts of diagram)</li> </ul>			
<b>Understand</b> Construct meaning, clarify, paraphrase, represent, translate, illustrate, give examples, classify, categorize, summarize, generalize, infer a logical conclusion), predict, compare/contrast, match like ideas, explain, construct models	<ul style="list-style-type: none"> <li>Describe or define facts, details, terms, principles, etc.</li> <li>Select appropriate word/phrase to use when intended meaning/definition is clearly evident</li> <li>Write simple complete sentences</li> <li>Add an appropriate caption to a photo or illustration</li> <li>Write "fact statements" on a topic (e.g., spiders build webs)</li> </ul>	<ul style="list-style-type: none"> <li><u>Specify, explain, show relationships</u>; explain why, cause-effect</li> <li>Provide and explain non-examples and examples</li> <li>Take notes; organize ideas/data (e.g., relevance, trends, perspectives)</li> <li><u>Summarize</u> results, key concepts, ideas</li> <li>Explain central ideas or accurate generalizations of texts or topics</li> <li>Describe steps in a process (e.g., science procedure, how to and why control variables)</li> </ul>	<ul style="list-style-type: none"> <li>Write a multi-paragraph composition for specific purpose, focus, voice, tone, &amp; audience</li> <li>Develop and explain opposing perspectives or connect ideas, principles, or concepts using supporting evidence (quote, example, text reference, etc.)</li> <li>Develop <u>arguments of fact</u> (e.g., Are these criticisms supported by the historical facts? Is this claim or equation true?)</li> </ul>	<ul style="list-style-type: none"> <li>Use multiple sources to elaborate on how concepts or ideas specifically draw from <i>other</i> content domains or differing concepts (e.g., research paper, <u>arguments of policy</u>— should this law be passed? What will be the impact of this change?)</li> <li>Develop generalizations about the results obtained or strategies used and apply them to a new problem or contextual scenario</li> </ul>
<b>Apply</b> Carry out or use a procedure in a given situation; carry out (apply to a familiar task), or use (apply) to an unfamiliar task	<ul style="list-style-type: none"> <li>Apply rules or use resources to edit specific spelling, grammar, punctuation, conventions, or word use</li> <li>Apply basic formats for documenting sources</li> </ul>	<ul style="list-style-type: none"> <li>Use context to identify/infer the intended meaning of words/phrases</li> <li>Obtain, interpret, &amp; explain information using text features (table, diagram, etc.)</li> <li>Develop a (brief) text that may be limited to one paragraph, <u>précis</u></li> <li>Apply basic organizational structures (paragraph, sentence types, topic sentence, introduction, etc.) in writing</li> </ul>	<ul style="list-style-type: none"> <li>Revise final draft for meaning, progression of ideas, or logic chain</li> <li>Apply internal consistency of text organization and structure to a full composition or oral communication</li> <li>Apply a concept in a new context</li> <li>Apply word choice, point of view, style, rhetorical devices to impact readers' interpretation of a text</li> </ul>	<ul style="list-style-type: none"> <li>Select or devise an approach among many alternatives to research and present a novel problem or issue</li> <li>Illustrate how multiple themes (historical, geographic, social) may be interrelated within a text or topic</li> </ul>
<b>Analyze</b> Break into constituent parts, determine how parts relate, differentiate between relevant-irrelevant, distinguish, focus, select, organize, outline, find coherence, deconstruct (e.g., for bias, point of view)	<ul style="list-style-type: none"> <li>Decide which text structure is appropriate to audience and purpose (e.g., compare-contrast, proposition-support)</li> <li>Determine appropriate, relevant key words for conducting an Internet search or researching a topic</li> </ul>	<ul style="list-style-type: none"> <li><u>Compare/contrast</u> perspectives, events, characters, etc.</li> <li>Analyze/revise format, organization, &amp; internal text structure (signal words, transitions, semantic cues) of different print and non-print texts</li> <li>Distinguish: relevant-irrelevant information; fact/opinion (e.g., What are the characteristics of a hero's journey?)</li> <li>Locate evidence that supports a perspective/differing perspectives</li> </ul>	<ul style="list-style-type: none"> <li>Analyze interrelationships among concepts/ issues/problems in a text</li> <li>Analyze impact or use of author's craft (literary devices, viewpoint, dialogue) in a single text</li> <li>Use reasoning and evidence to generate criteria for making and supporting an <u>argument of judgment</u> (Was FDR a great president? Who was the greatest ball player?)</li> <li>Support conclusions with evidence</li> </ul>	<ul style="list-style-type: none"> <li>Analyze multiple sources of evidence, or multiple works by the same author, or across genres, or time periods</li> <li>Analyze complex/abstract themes, perspectives, concepts</li> <li>Gather, analyze, and organize multiple information sources</li> <li>Compare and contrast conflicting <u>judgments or policies</u> (e.g., Supreme Court decisions)</li> </ul>
<b>Evaluate</b> Make judgments based on criteria, check, detect inconsistencies or fallacies, judge, critique	<p>"UG" – unsubstantiated generalizations = stating an opinion without providing any support for it!</p>		<ul style="list-style-type: none"> <li>Evaluate validity and relevance of evidence used to develop an argument or support a perspective</li> <li>Describe, compare, and contrast solution methods</li> <li>Verify or critique the accuracy, logic, and reasonableness of stated conclusions or assumptions</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate relevancy, accuracy, &amp; completeness of information across multiple sources</li> <li>Apply understanding in a novel way, provide argument or justification for the application</li> <li>Critique the historical impact (policy, writings, discoveries, etc.)</li> </ul>
<b>Create</b> Reorganize elements into new patterns/structures, generate, hypothesize, design, plan, produce	<ul style="list-style-type: none"> <li>Brainstorm facts, ideas, concepts, problems, or perspectives related to a topic, text, idea, issue, or concept</li> </ul>	<ul style="list-style-type: none"> <li>Generate conjectures, hypotheses, or predictions based on facts, observations, evidence/observations, or prior knowledge and experience</li> <li>Generate believable "grounds" (reasons) for an opinion-argument</li> </ul>	<ul style="list-style-type: none"> <li>Develop a complex model for a given situation or problem</li> <li>Develop an alternative solution or perspective to one proposed (e.g., debate)</li> </ul>	<ul style="list-style-type: none"> <li>Synthesize information across multiple sources or texts in order to articulate a new voice, alternate theme, new knowledge or nuanced perspective</li> </ul>

© 2009 (updated 2013) Karin K. Hess. Hess' Cognitive Rigor Matrix for Writing: Applying Types of Arguments Across Content Areas to the CRM.

Permission to reproduce is given when authorship is fully cited [[khess@nceia.org](mailto:khess@nceia.org)]. For full article, go to [www.nceia.org](http://www.nceia.org)

**Hess' Cognitive Rigor Matrix & Curricular Examples:** Applying Webb's Depth-of-Knowledge Levels to Bloom's Cognitive Process Dimensions - **Writing**

Sample Topics	Informational Writing Sample Prompts to illustrate how informational writing differs from opinions-arguments of fact	Arguments of Fact Sample Writing Prompts <b>(must support reasons/ reasoning with facts/evidence)</b>	Arguments of Judgment Sample Writing Prompts <b>(must define criteria for decision using facts/ evidence)</b>	Arguments of Policy Sample Writing Prompts <b>(must define the problem/issue and implications using facts/ evidence)</b>
<b>Social studies: FDR</b>	Who was he? What did he do (e.g., major initiatives)? What were the historical, social, and political contexts when he became president? How does history remember him?	FDR had tremendous support from the Jewish community throughout his presidency; however critics say he did not do much to support them and their issues. <b>Are these criticisms supported by the historical facts within the historical context?</b>	<b>Was FDR a great president? Should ... be named as one TIME's 100 most influential people of (year)?</b>	<b>What has been the historical impact of a major FDR policy?</b>
<b>Social studies: Cabinet appointments</b>	What does the Constitution say about cabinet appointments and requirements for cabinet positions? What does the (labor secretary) do?	<b>Is Tom Perez qualified to be the next labor secretary? What additional factors, if any, should be considered in making this appointment?</b>		
<b>Smart guns</b> (emerging technology that will only fire when recognizing the gun owner)	What are they? How do they work? What do they cost? Who is developing them? Have they been tested?	<b>Do smart guns have the potential to reduce gun violence in this country?</b>		
<b>Social studies: Gun violence</b>	What is gun violence? What do we know about gun violence (e.g., most likely victims) in the US and in other countries (and its impact) over the past 50 years? What are the current and proposed laws related to gun violence? How do gun laws vary from state to state? How have gun laws changed	<b>Do the current concerns about increased gun violence and the status of gun violence in this country warrant the need for new laws? Will this law ..... address current gun violence issues? What factors should be considered when developing new gun violence legislation</b> (common good-individual rights)	<b>Is this law ..... a fair law? Is this law ..... needed? Is this law ..... outdated? Do we need another law....?</b>	<b>Should this law ..... be passed? What problems does it address? What are the implications if it is or is not passed?</b>

**Hess' Cognitive Rigor Matrix & Curricular Examples:** Applying Webb's Depth-of-Knowledge Levels to Bloom's Cognitive Process Dimensions - **Writing**

<b>Sample Topics (cont)</b>	<b>Informational Writing</b> Sample Prompts to illustrate how informational writing differs from opinions-arguments of fact	<b>Arguments of Fact</b> Sample Writing Prompts <b>(must support reasons/ reasoning with facts/evidence)</b>	<b>Arguments of Judgment</b> Sample Writing Prompts <b>(must define criteria for decision using facts/ evidence)</b>	<b>Arguments of Policy</b> Sample Writing Prompts <b>(must define the problem/issue and implications using facts/ evidence)</b>
<b>ELA &amp; Literacy: Text(s) read &amp; Movies viewed</b>	<p>over the years?</p> <p>What is this topic/story /text about? How does this compare with other texts written by this author or other texts on the same topic? Or from the same time period? Or same genre? What is (nonfiction, poetry, fantasy, etc.)? How is it different from or similar to other genre of writing? <b>Lincoln: who was he? What did he do (e.g., major initiatives)? What were the historical, social, and political contexts when he became president? How does history remember him?</b></p>	<p><b>Is this text written in the same style as ... ?</b> <b>Is the information in this article accurate?</b> <b>What is the author's message/theme/perspective?</b> <b>If the ending were changed (to ...), how would this impact the overall theme?</b> <b>What historical/ social/political events of the time are likely to have influenced this author's writing?</b> <b>Is this movie (<i>Lincoln</i>) historically accurate? Do the inaccuracies affect the overall theme or viewer interpretation of history?</b></p>	<p><b>Is rap music poetry?</b>  <b>Is this (still) a compelling message for our time?</b>  <b>What is Lincoln's legacy?</b></p>	
<b>Holidays, celebrations, traditions</b>	<p>What are they? Who celebrates them? How? When? Are the same holidays celebrated in all countries (e.g., Thanksgiving)? How does a holiday become a national holiday (MLK Day, Presidents' Day, etc.)</p>	<p><b>What is your favorite – or not so favorite holiday?</b></p>	<p><b>Should .... become a national holiday?</b> <b>Has commercialization coinciding with national holidays caused people to forget why we celebrate them in the first place (shopping versus honoring a hero)?</b></p>	

**Hess' Cognitive Rigor Matrix & Curricular Examples:** Applying Webb's Depth-of-Knowledge Levels to Bloom's Cognitive Process Dimensions - **Writing**

<b>Sample Topics (cont)</b>	<b>Informational Writing</b> Sample Prompts to illustrate how informational writing differs from opinions-arguments of fact	<b>Arguments of Fact</b> Sample Writing Prompts <b>(must support reasons/ reasoning with facts/evidence)</b>	<b>Arguments of Judgment</b> Sample Writing Prompts <b>(must define criteria for decision using facts/ evidence)</b>	<b>Arguments of Policy</b> Sample Writing Prompts <b>(must define the problem/issue and implications using facts/ evidence)</b>
<b>Science: Habitats/ Biomes</b>	What is (a desert, rain forest, tundra, grassland, etc.)? What is the climate like? Where do you find them? What are some characteristics of the habitat? What are some organisms that live there? How have they adapted to be able to live there? How does one habitat (biome) compare with another?	<b>Would this animal be able to survive in ..... habitat? Why or why not?</b> <b>How would life/survival needs be different for ... if moving from ... to ..... ?</b>	<b>What is the most appropriate habitat for this organism?</b> <b>Would .... be able to survive here?</b>	
<b>Science</b>	Compare/contrast fresh and salt water habitats. What do organisms need to survive here? What laws currently exist to protect fish habitats?	<b>What factors might be causing the fish population to decline?</b>	<b>Is this river/lake/ocean healthy?</b>	<b>Do we need a new law...?</b> <b>What will be the likely impact of this change?</b>
<b>Mathematical arguments-equations</b>	What does it mean to be equivalent? What is an equivalent fraction? How would you solve this problem?	<b>Is this equation true?</b> <b>Is this equation true all of the time, some of the time? Or never?</b>		
<b>Mathematical arguments-Statistics</b>	What statistics are used for (describing a player's performance, Hall of Fame)? What do top earning players have in common in their performances?	<b>Is ... eligible to be voted into the Hall of Fame?</b>	<b>Who was the greatest ball player?</b> <b>Based on their life careers, how should these 5 players be ranked?</b>	