TOOL 5D

HESS COGNITIVE RIGOR MATRIX | Career & Technical Education (CTE CRM) :

Hess' Interpretation Applying Webb's Depth-of-Knowledge Levels to Bloom's Cognitive Process Dimensions

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
Remember Memorize, recognize, recall, locate, identify	o Recall or locate key facts, terms, details, procedures (e.g., explicit in a technical manual)	Use these Hess CRM curricular examples with most assignments, assessments, or inquiry activities for Career & Technical Education		
Understand Construct meaning, clarify, paraphrase, represent, translate, illustrate, give examples, summarize, generalize, infer a logical conclusion), predict, observe, match like ideas, explain, construct models	o Select correct terms/ graphics for intended meaning o Describe/explain who, what, where, when, or how o Define terms, principles, concepts o Represent relationships with words, diagrams, symbols o Solve routine problems	o Specify and explain relationships (e.g., non-examples/examples; cause-effect; if-then) o Summarize procedures, results, concepts, key ideas (paragraph) o Make and explain estimates, basic inferences, or predictions o Use models to explain concepts o Make and record observations	o Explain, generalize, or connect ideas using supporting evidence (quote, example, text reference, data); o Justify your interpretation when more than one is plausible o Explain how a concept can be used to solve a non-routine problem o Develop a multi-paragraph manual or infographic for specific purpose/focus	o Use multiple sources to outline varying perspectives on a problem or issue o Explain how a concept relates across content domains or to 'big Ideas' (e.g., patterns in the human or designed world; structure-function) o Apply generalizations from one investigation to new problem-based situations, using evidence or data
Apply Carry out or use a procedure in a given situation; carry out (apply to a familiar task), or use (transfer) to an unfamiliar or non-routine task	o Apply basic formulas, algorithms, conversion rules o Calculate; measure o Use reference materials and tools to gather information o Demo safe procedures	o Select and use appropriate tool or procedure for specified task o Use context to identify the meaning of terms/phrases o Interpret information using diagrams, data tables, etc.	o Build or revise a plan for investigation using (new) evidence/data o Use and show reasoning, planning, and evidence to support conclusions or to identify design flaws o Conduct a designed investigation	o Draw from source materials with intent to develop a complex or multimedia product with personal viewpoint o Conduct a project that specifies a problem, identifies solution paths, tests the solution, and reports results
Analyze Break into constituent parts, determine how parts relate, compare-contrast, differentiate between relevant-irrelevant, distinguish, focus, select, organize, outline, find coherence, deconstruct (e.g., for potential bias, point of view, technique/strategy used)	o Identify trend, pattern, possible cause, or effect o Describe processes or tools used to research ideas o Identify ways symbols or metaphors are used to represent universal ideas o Retrieve data to answer a question (e.g., diagram, graph)	o Compare similarities/ differences or draw inferences about _____ due to influences of _____ o Distinguish relevant-irrelevant information; fact/opinion; primary from a secondary source o Extend a pattern o Organize and represent data o Categorize materials, data, etc. based on characteristics	o Interpret information from a complex graph/model (e.g., interrelationships among variables, concepts) o Use reasoning, planning, and evidence to support or refute inferences or results stated o Use reasoning and evidence to generate criteria for making and supporting an argument o Generalize & support a pattern/trend	o Analyze multiple sources of evidence (e.g., compareÐcontrast various plans, solution methods) o Analyze and compare diverse/complex/ abstract perspectives, models, etc. o Gather, organize, and analyze information from multiple sources to answer a research question
Evaluate Make judgments based on specified criteria, detect inconsistencies, flaws, or fallacies, judge, critique	"UG" – unsubstantiated generalizations = stating an opinion without providing any support for it!		o Develop a logical argument for conjectures, citing evidence o Verify reasonableness of results or conjectures (e.g., of others) o Critique conclusions drawn/evidence used/credibility of sources	o Evaluate relevancy, accuracy, & completeness of sources used o Apply understanding in a novel way, provide argument/ justification for the application o Critique the historical impact of _____ on _____
Create Reorganize into new patterns/schemas, design, plan, produce	o Brainstorm ideas, concepts, problems, or perspectives related to a given scenario, observation, question posed	o Generate testable conjectures/hypotheses based on observations, prior knowledge, and/or artifacts	o Develop a complex model for given concept and justify reasoning o Develop an alternative solution and justify reasoning	o Synthesize information across multiple models, sources, or texts o Articulate new knowledge or new perspective