Hess Cognitive Rigor Matrix applied to Career & Technology 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	• Recall or locate key facts, terms, details, procedures (e.g., explicit in text)	Use these Hess CRM curricular examples with most assignments, assessments, or inquiry activities for Career & Technology 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	• Select correct terms/ graphics for intended meaning • Describe/explain who, what, where, when, or how • Define terms, principles, concepts • Represent relationships with words, diagrams, symbols • Solve routine problems	• Specify and explain relationships (e.g., non-examples/examples; cause-effect; if-then) • Summarize procedures, results, concepts, key ideas (paragraph) • Make and explain estimates, basic inferences, or predictions • Use models to explain concepts • Make and record observations	• Explain, generalize, or connect ideas using supporting evidence (quote, example, text reference, data); • Justify your interpretation when more than one is plausible • Explain how a concept can be used to solve a non-routine problem • Develop a multi-paragraph manual or infographic for specific purpose/focus	• Use multiple sources to outline varying perspectives on a problem or issue • Explain how a concept relates across content domains or to 'big Ideas' (e.g., patterns in the human or designed world; structure-function) • 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	• Apply basic formulas, algorithms, conversion rules • Calculate; measure • Use reference materials and tools to gather information • Demo safe procedures	• Select and use appropriate tool or procedure for specified task • Use context to identify the meaning of terms/phrases • Interpret information using diagrams, data tables, etc.	• Build or revise a plan for investigation using (new) evidence/data • Use and show reasoning, planning, and evidence to support conclusions or to identify design flaws • Conduct a designed investigation	• Draw from source materials with intent to develop a complex or multimedia product with personal viewpoint • 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)	• Identify trend, pattern, possible cause, or effect • Describe processes or tools used to research ideas • Identify ways symbols or metaphors are used to represent universal ideas • Retrieve data to answer a question (e.g., diagram, graph)	• Compare similarities/ differences or draw inferences about ____ due to influences of _____ • Distinguish relevant-irrelevant information; fact/opinion; primary from a secondary source • Extend a pattern • Organize and represent data • Categorize materials, data, etc. based on characteristics	• Interpret information from a complex graph/model (e.g., interrelationships among variables, concepts) • Use reasoning, planning, and evidence to support or refute inferences or results stated • Use reasoning and evidence to generate criteria for making and supporting an argument • Generalize & support a pattern/trend	• Analyze multiple sources of evidence (e.g., compare-contrast various plans, solution methods) • Analyze and compare diverse/complex/ abstract perspectives, models, etc. • 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 or claim without providing any support for it!		• Develop a logical argument for conjectures, citing evidence • Verify reasonableness of results or conjectures (e.g., of others) • Critique conclusions drawn/evidence used/credibility of sources	• Evaluate relevancy, accuracy, & completeness of sources used • Apply understanding in a novel way, provide argument/ justification for the application • Critique the historical impact of __on__
Create Reorganize into new patterns/schemas, design, plan, produce	• Brainstorm ideas, concepts, problems, or perspectives related to a given scenario, observation, question posed	• Generate testable conjectures/ hypotheses based on observations, prior knowledge, and/or artifacts	• Develop a complex model for given concept and justify reasoning • Develop an alternative solution and justify reasoning	• Synthesize information across multiple models, sources, or texts • Articulate new knowledge or new perspective