Revised Bloom's	Webb's DOK Level 1	Webb's DOK Level 2	Webb's DOK Level 3	Webb's DOK Level 4
Taxonomy Remember Retrieve knowledge from long- term memory, recognize, recall, locate, identify	 Recall & Reproduction Recall, observe, & recognize facts, principles, properties Recall/ identify conversions among representations or numbers (e.g., customary and metric measures) 	Skills & Concepts	Strategic Thinking/ Reasoning	Extended Thinking
Understand Construct meaning, clarify, paraphrase, represent, translate, illustrate, give examples, classify, categorize, summarize, generalize, infer a logical conclusion (such as from examples given), predict, compare/contrast, match like ideas, explain, construct models	 Evaluate an expression Locate points on a grid or number on number line Solve a one-step problem Represent math relationships in words, pictures, or symbols Read, write, compare decimals in scientific notation 	 Specify and explain relationships (e.g., non-examples/examples; cause-effect) Make and record observations Explain steps followed Summarize results or concepts Make basic inferences or logical predictions from data/observations Use models /diagrams to represent or explain mathematical concepts Make and explain estimates 	 Use concepts to solve <u>non-routine</u> problems Explain, generalize, or connect ideas <u>using supporting evidence</u> Make <u>and justify</u> conjectures Explain thinking when more than one response is possible Explain phenomena in terms of concepts 	 Relate mathematical or scientific concepts to other content areas, other domain or other concepts Develop generalizations of th results obtained and the strategies used (from investigation or readings) an apply them to new problem situations
Apply Carry out or use a procedure in a given situation; carry out (apply to a familiar task), or use (apply) to an unfamiliar task	 Follow simple procedures (recipe-type directions) Calculate, measure, apply a rule (e.g., rounding) Apply algorithm or formula (e.g., area, perimeter) Solve linear equations Make conversions among representations or numbers, or within and between customary and metric measures 	 Select a procedure according to criteria and perform it Solve routine problem applying multiple concepts or decision points Retrieve information from a table, graph, or figure and use it solve a problem requiring multiple steps Translate between tables, graphs, words, and symbolic notations (e.g., graph data from a table) Construct models given criteria 	 Design investigation for a specific purpose or research question Conduct a designed investigation Use concepts to solve non-routine problems <u>Use & show reasoning, planning, and evidence</u> Translate between problem & symbolic notation when not a direct translation 	 Select or devise approach among many alternatives to solve a problem Conduct a project that speci a problem, identifies solutior paths, solves the problem, a reports results
Analyze Break into constituent parts, determine how parts relate, differentiate between relevant- irrelevant, distinguish, focus, select, organize, outline, find coherence, deconstruct	 Retrieve information from a table or graph to answer a question Identify whether specific information is contained in graphic representations (e.g., table, graph, T-chart, diagram) Identify a pattern/trend 	 Categorize, classify materials, data, figures based on characteristics Organize or order data Compare/ contrast figures or data Select appropriate graph and organize & display data Interpret data from a simple graph Extend a pattern 	 Compare information within or across data sets or texts Analyze and <u>draw conclusions from</u> <u>data, citing evidence</u> Generalize a pattern Interpret data from complex graph Analyze similarities/differences between procedures or solutions 	 Analyze multiple sources of evidence analyze complex/abstract themes Gather, analyze, and evalua information
Evaluate Make judgments based on criteria, check, detect inconsistencies or fallacies, judge, critique			 <u>Cite evidence and develop a logical</u> <u>argument</u> for concepts or solutions Describe, compare, and contrast solution methods <u>Verify reasonableness of results</u> 	 Gather, analyze, & evaluate information to draw conclusi Apply understanding in a no way, provide argument or justification for the application
Create Reorganize elements into new patterns/structures, generate, hypothesize, design, plan, construct, produce	Brainstorm ideas, concepts, or perspectives related to a topic	Generate conjectures or hypotheses based on observations or prior knowledge and experience	 Synthesize information within one data set, source, or text Formulate an original problem given a situation Develop a scientific/mathematical model for a complex situation 	 Synthesize information acro multiple sources or texts Design a mathematical mod to inform and solve a practic or abstract situation

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