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| **Webb’s 🡺**  **Depth of Knowledge** | **DOK LEVEL 1**  **Recall and Reproduction** | **DOK LEVEL 2**  **Basic Skills and Concepts** | **DOK LEVEL 3**  **Strategic Thinking and Reasoning** | **DOK LEVEL 4**  **Extended Thinking** |
| **Blooms 🡻** |
| **Remember**  (Knowledge)  Retrieve knowledge from long-term memory, recognize, recall, locate, identify. | **Knowledge/Remember**  **Ra**. Recall, observe, & recognize facts, principles, properties  **Rb**. Recall/ identify conversions among representations or numbers (e.g., customary and metric measures |  |  |  |
| **Understand**  (**C**omprehend)  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. | **Comprehend/Understand DOK1**  **Cc**. Evaluate an expression  **Cd**. Locate points on a grid or number on number line  **Ce**. Solve a one-step problem  **Cf**. Represent math relationships in words, pictures, or symbols  **Cg**. Read, write, compare decimals in scientific notation | **Comprehend/Understand DOK2**  **Cm**. Specify and explain relationships (e.g., non-examples/examples; cause-effect)  **Cn**. Make and record observations  **Co**. Explain steps followed  **Cp**. Summarize results or concepts  **Cq**. Make basic inferences or logical predictions from data/observations  **Cr**. Use models /diagrams to represent or explain mathematical concepts  **Cs**. Make and explain estimates | **Comprehend/Understand DOK3**  **CH**. Use concepts to solve non-routine problems  **CI**. Explain, generalize, or connect ideas using supporting evidence  **CJ**. Make and justify conjectures  **CK**. Explain thinking when more than one response is possible  **CL**. Explain phenomena in terms of concepts | **Comprehend/Understand DOK4**  **Cee**. Relate mathematical or scientific concepts to other content areas, other domains, or other concepts  **Cff**. Develop generalizations of the results obtained and the strategies used (from investigation or readings) and 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. | **Application DOK 1**  **APh**. Follow simple procedures (recipe-type directions)  **APi**. Calculate, measure, apply a rule (e.g., rounding)  **APj**. Apply algorithm or formula (e.g., area, perimeter)  **APk**. Solve linear equations  **APl**. Make conversions among representations or numbers, or within and between customary and metric measures | **Application DOK 2**  **APt**. Select a procedure according to criteria and perform it  **APu**. Solve routine problem applying multiple concepts or decision points  **APv**. Retrieve information from a table, graph, or figure and use it solve a problem requiring multiple steps  **APw**. Translate between tables, graphs, words, and symbolic notations (e.g., graph data from a table)  **APx**. Construct models given criteria | **Application DOK 3**  **APM**. Design investigation for a specific purpose or research question  **APN**. Conduct a designed investigation  **APO**. Use concepts to solve non-routine problems  **APP**. Use & show reasoning, planning, and evidence  **APQ**. Translate between problem & symbolic notation when not a direct translation | **Application DOK 4**  **APgg**. Select or devise approach among many alternatives to solve a problem  **APhh**. Conduct a project that specifies a problem, identifies solution paths, solves the problem, and reports results |
| **Analyze**  Break into constituent parts, determine how parts relate, differentiate between relevant-irrelevant, distinguish, focus, select, organize, outline, find coherence, deconstruct (e.g., for bias or point of view). | **Analyze DOK 1**  **ANy**. Retrieve information from a table or graph to answer a question  **ANz**. Identify whether specific information is contained in graphic representations (e.g., table, graph, T-chart, diagram)  **ANA**. Identify a pattern/trend | **Analyze DOK 2**  **ANB**. Categorize, classify materials, data, figures based on characteristics  **ANC**. Organize or order data  **AND**. Compare/ contrast figures or data  **ANE**. Select appropriate graph and organize & display data  **ANF**. Interpret data from a simple graph  **ANG**. Extend a pattern | **Analyze DOK 3**  **ANR**. Compare information within or across data sets or texts  **ANS**. Analyze and draw conclusions from data, citing evidence  **ANT**. Generalize a pattern  **ANU**. Interpret data from complex graph  **ANV**. Analyze similarities/differences between procedures or solutions | **Analyze DOK 4**  **ANii**. Analyze multiple sources of evidence  **ANjj**. Analyze complex/abstract themes  **ANkk**. Gather, analyze, and evaluate information |
| **Evaluate**  Make judgments based on criteria, check, detect inconsistencies or fallacies, judge, critique. |  |  | **Evaluate DOK 3**  **EVW**. Cite evidence and develop a logical argument for concepts or solutions  **EVX**. Describe, compare, and contrast solution methods  **EVY**. Verify reasonableness of results | **Evaluate DOK 4**  **EVll**. Gather, analyze, & evaluate information to draw conclusions  **EVmm**. Apply understanding in a novel way, provide argument or justification for the application |
| **Create**  (**Sy**nthesize)  Reorganize elements into new patterns/structures, generate, hypothesize, design, plan, produce. | **Create/Synthesize DOK 1**  **SYZ.** Brainstorm ideas, concepts, or perspectives related to a topic | **Create/Synthesize DOK 2**  **SYaa**. Generate conjectures or hypotheses based on observations or prior knowledge and experience | **Create/Synthesize DOK 3**  **SYbb**. Synthesize information within one data set, source, or text  **SYcc**. Formulate an original problem given a situation  **SYdd**. Develop a scientific/mathematical model for a complex situation | **Create/Synthesize DOK 4**  **SYnn**. Synthesize information across multiple sources or texts  **SYoo**. Design a mathematical model to inform and solve a practical or abstract situation |

**Hess CR Depth of Knowledge Math Matrix**