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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**