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| SMP | **NEEDS IMPROVEMENT** | **EMERGING** | **PROFICIENT** | **EXEMPLARY** |
| **MAKES SENSE OF PROBLEMS AND PERSERVER IN SOLVING THEM** | |  | | --- | | **Task:**  □ Is strictly procedural.  □ Does not require students to check solutions for errors.  **Teacher:**  □ Does not allow for wait time; asks leading questions to rush through task.  □ Does not encourage students to individually process the tasks.  □ Is focused solely on answers rather than processes and reasoning. | | |  | | --- | | **Task:**  □ Is overly scaffolded or procedurally “obvious”.  □ Requires students to check answers by plugging in numbers.  **Teacher:**  □ Allots too much or too little time to complete task.  □ Encourages students to individually complete tasks, but does not ask them to evaluate the processes used.  □ Explains the reasons behind procedural steps.  □ Does not check errors publicly. | | |  | | --- | | **Task:**  □ Is cognitively demanding.  □ Has more than one entry point.  □ Requires a balance of procedural fluency and conceptual understanding.  □ Requires students to check solutions for errors using one other solution path.  **Teacher:**  □ Allows ample time for all students to struggle with task.  □ Expects students to evaluate processes implicitly.  □ Models making sense of the task (given situation) and the proposed solution. | | |  | | --- | | **Task:**  □ Allows for multiple entry points and solution paths.  □ Requires students to defend and justify their solution by comparing multiply solution paths.  **Teacher:**  □ Differentiates to keep advanced students challenged during work time.  □ Integrates time for explicit meta-cognition.  □ Expects students to make sense of the task and the proposed solution. | |
| **REASON ABSTARCTLY AND QUANTITIVLEY** | **Task:**  □ Lacks context.  □ Does not make use of multiple representations or solution paths.  **Teacher:**  □ Does not expect students to interpret representations.  □ Expects students to memorize procedures with no connection to meaning. | **Task:**  □ Is embedded in a contrived context.  **Teacher:**  □ Expects students to model and interpret tasks using a single representation.  □ Explains connections between procedures and meaning. | **Task:**  □ Has realistic context.  □ Requires students to frame solutions in a context.  □ Has solutions that can be expressed with multiple representations.  **Teacher:**  □ Expects students to interpret and model using multiple representations.  □ Provides structure for students to connect algebraic procedures to contextual meaning.  □ Links mathematical solution with a question’s answer. | **Task:**  □ Has relevant realistic context.  **Teacher:**  □ Expects students to interpret, model, and connect multiple representations.  □ Prompts students to articulate connections between algebraic procedures and contextual meaning. |
| **CONSTRUCT VIABLE ARGUMENT** | **Task:**  □ Is either ambiguously stated.  **Teacher:**  □ Does not ask students to present arguments or solutions.  □ Expects students to follow a given solution path without opportunities to make conjectures. | **Task:**  □ Is not at the appropriate level.  **Teacher:**  □ Does not help students differentiate between assumptions and logical conjectures.  □ Asks students to present arguments but not to evaluate them.  □ Allows students to make conjectures without justification. | **Task:**  □ Avoids single steps or routine algorithms.  **Teacher:**  □ Identifies students’ assumptions.  □ Models evaluation of student arguments.  □ Asks students to explain their conjectures. | **Teacher:**  □ Helps students differentiate between assumptions and logical conjectures.  □ Prompts students to evaluate peer arguments.  □ Expects students to formally justify the validity of their conjectures. |
| **MODEL THE MATHEMATICS** | **Task:**  □ Requires students to identify variables and to perform necessary computations.  **Teacher:**  □ Identifies appropriate variables and procedures for students.  □ Does not discuss appropriateness of model. | **Task:**  □ Requires students to identify variables and to compute and interpret results.  **Teacher:**  □ Verifies that students have identified appropriate variables and procedures.  □ Explains the appropriateness of model. | **Task:**  □ Requires students to identify variables, compute and interpret results, and report findings using a mixture of representations.  □ Illustrates the relevance of the mathematics involved.  □ Requires students to identify extraneous or missing information.  **Teacher:**  □ Asks questions to help students identify appropriate variables and procedures.  □ Facilitates discussions in evaluating the appropriateness of model. | **Task:**  □ Requires students to identify variables, compute and interpret results, report findings, and justify the reasonableness of their results and procedures within context of the task.  **Teacher:**  □ Expects students to justify their choice of variables and procedures.  □ Gives students opportunity to evaluate the appropriateness of model. |
| **USE APPROPRIATE TOOLS STRATEGICALLY** | **Task:**  □ Does not incorporate additional learning tools.  **Teacher:**  □ Does not incorporate additional learning tools. | **Task:**  □ Lends itself to one learning tool.  □ Does not involve mental computations or estimation.  **Teacher:**  □ Demonstrates use of appropriate learning tool. | **Task:**  □ Lends itself to multiple learning tools.  □ Gives students opportunity to develop fluency in mental computations.  **Teacher:**  □ Chooses appropriate learning tools for student use.  □ Models error checking by estimation. | **Task:**  □ Requires multiple learning tools (i.e., graph paper, calculator, manipulatives).  □ Requires students to demonstrate fluency in mental computations.  **Teacher:**  □ Allows students to choose appropriate learning tools.  □ Creatively finds appropriate alternatives where tools are not available. |
| **ATTEND TO PRECISION** | **Task:**  □ Gives imprecise instructions.  **Teacher:**  □ Does not intervene when students are being imprecise.  □ Does not point out instances when students fail to address the question completely or directly. | **Task:**  □ Has overly detailed or wordy instructions.  **Teacher:**  □ Inconsistently intervenes when students are imprecise.  □ Identifies incomplete responses but does not require student to formulate further response. | **Task:**  □ Has precise instructions.  **Teacher:**  □ Consistently demands precision in communication and in mathematical solutions.  □ Identifies incomplete responses and asks student to revise their response. | **Task:**  □ Includes assessment criteria for communication of ideas.  **Teacher:**  □ Demands and models precision in communication and in mathematical solutions.  □ Encourages students to identify when others are not addressing the question completely. |
| **LOOK FOR AND MAKE USE OF STRUCTURE** | **Task:**  □ Requires students to automatically apply an algorithm to a task without evaluating its appropriateness.  **Teacher:**  □ Does not recognize students for developing efficient approaches to the task.  □ Requires students to apply the same algorithm to a task although there may be other approaches. | **Task:**  □ Requires students to analyze a task before automatically applying an algorithm.  **Teacher:**  □ Identifies individual students’ efficient approaches, but does not expand understanding to the rest of the class.  □ Demonstrates the same algorithm to all related tasks although there may be other more effective approaches. | **Task:**  □ Requires students to analyze a task and identify more than one approach to the Problem.  **Teacher:**  □ Facilitates all students in developing reasonable and efficient ways to accurately perform basic operations.  □ Continuously questions students about the reasonableness of their intermediate results. | **Task:**  □ Requires students to identify the most efficient solution to the task.  **Teacher:**  □ Prompts students to identify mathematical structure of the task in order to identify the most effective solution path.  □ Encourages students to justify their choice of algorithm or solution path. |
| **LOOK FOR AND EXPRESS REGULARITY IN REASONING** | **Task:**  □ Is disconnected from prior and future concepts.  □ Has no logical progression that leads to pattern recognition.  **Teacher:**  □ Does not show evidence of understanding the hierarchy within concepts.  □ Presents or examines task in isolation. | **Task:**  □ Is overly repetitive or has gaps that do not allow for development of a pattern.  **Teacher:**  □ Hides or does not draw connections to prior or future concepts. | **Task:**  □ Reviews prior knowledge and requires cumulative understanding.  □ Lends itself to developing a pattern or structure.  **Teacher:**  □ Connects concept to prior and future concepts to help students develop an understanding of procedural shortcuts.  □ Demonstrates connections between tasks. | **Task:**  □ Addresses and connects to prior knowledge in a non-routine way.  □ Requires recognition of pattern or structure to be completed.  **Teacher:**  □ Encourages students to connect task to prior concepts and tasks.  □ Prompts students to generate exploratory questions based on current task.  □ Encourages students to monitor each other’s intermediate results. |