PROPOSED GRADING FRAMEWORK FOR ACCELERATED MATH CLASSES

	Expectations Lens	Task Analysis Lens		Transfer Lens
A+	Tremendously exceeds expectations	On **"Doing Mathematics"** tasks, the student succeeds …	*Consistently*	Far Transfer
A	Considerably exceeds expectations		*Often*	
A–	Slightly exceeds expectations		*Sometimes*	
B+	Thoroughly meets expectations	On **"Procedures With Connections"** tasks, the student succeeds …	*Consistently*	Near Transfer
B	Adequately meets expectations		*Often*	
B–	Barely meets expectations		*Sometimes*	
C+	Almost meets expectations	On **"Procedures Without Connections"** tasks, the student succeeds …	*Consistently*	Minimal Transfer
C	Falls short of expectations		*Often*	
C–	Falls far short of expectations		*Sometimes*	

The Mathematical Tasks Framework[1]

"Memorization" Tasks

- Involves either producing previously learned facts, rules, formulae, or definitions OR committing facts, rules, formulae, or definitions to memory.
- Cannot be solved using procedures because a procedure does not exist or because the time frame in which the task is being completed is too short to use a procedure.
- Are not ambiguous – such tasks involve exact reproduction of previously seen material and what is to be reproduced is clearly and directly stated.
- Have no connection to the concepts or meaning that underlie the facts, rules, formulae, or definitions being learned or reproduced.

"Procedures Without Connections" Tasks

- Are algorithmic. Use of the procedure is either specifically called for or its use is evident based on prior instruction, experience, or placement of the task.
- Require limited cognitive demand for successful completion. There is little ambiguity about what needs to be done and how to do it.
- Have no connection to the concepts or meaning that underlie the procedure being used.
- Are focused on producing correct answers rather than developing mathematical understanding.
- Require no explanations, or explanations that focus solely on describing the procedure that was used.

"Procedures With Connections" Tasks

- Focus students' attention on the use of procedures for the purpose of developing deeper levels of understanding of mathematical concepts and ideas.
- Suggest pathways to follow (explicitly or implicitly) that are broad general procedures that have close connections to underlying conceptual ideas as opposed to narrow algorithms that are opaque with respect to underlying concepts.
- Usually are represented in multiple ways (e.g., visual diagrams, manipulatives, symbols, problem situations). Making connections among multiple representations helps to develop meaning.
- Require some degree of cognitive effort. Although general procedures may be followed, they cannot be followed mindlessly. Students need to engage with the conceptual ideas that underlie the procedures in order to successfully complete the task and develop understanding.

"Doing Mathematics" Tasks

- Requires complex and non-algorithmic thinking (i.e., there is not a predictable, well-rehearsed approach or pathway explicitly suggested by the task, task instructions, or a worked-out example).
- Requires students to explore and to understand the nature of mathematical concepts, processes, or relationships.
- Demands self-monitoring or self-regulation of one's own cognitive processes.
- Requires students to access relevant knowledge and experiences and make appropriate use of them in working through the task.
- Requires students to analyze the task and actively examine task constraints that may limit possible solution strategies and solutions.
- Requires considerable cognitive effort and may involve some level of anxiety for the student due to the unpredictable nature of the solution process required.

---

[1] Stein and Smith, 1998.

THE TRANSFER DEMAND RUBRIC[2]

"No Transfer" Task

- The task is presented so that the student need only follow directions and use recall and logic to complete it.
- No transfer is required, only the plugging in of a technique or content related to just-completed learning or examples.

"Minimal Transfer" Task

- The task is presented with explicit reference to ideas, topics, or tasks previously studied, but no reference is made to the specific rule or formula that applies.
- Success requires the student only to recognize and recall which rule applies and use it, based on a familiar problem statement.
- The only transfer involves dealing with variables, categories, or situational details different from those in the teaching examples; and in realizing which rule applies from a few obvious recent candidates.

"Near Transfer" Tasks

- The task may look unfamiliar but is presented with clues or cues meant to suggest the approach or content called for (or to narrow the options considerably).
- Success depends upon realizing what recent learning applies in this somewhat ambiguous or different scenario.
- The main challenge for the learner is to figure out what kind of problem this is, from the information given.
- Having realized what the task demand, the learner should be able to follow known procedures to follow it.
- Some learners who seemed skilled and knowledgeable on past tests may not successfully complete the task.

"Far Transfer" Tasks

- The task looks unfamiliar, even odd or puzzling, and is presented without cues as to how to approach or solve it.
- Success depends upon a creative inventory or adaptation of one's knowledge, based on understanding both the content and the situation.
- Carefully thinking through what the task does and does not ask and provide is required; identifying that additional problems, not obvious at first, have to be worked through.
- As a result, the task may seem undoable to some (even though it is likely doable by all if prior learning were effectively tapped).
- Not all students may succeed, therefore, and some may give up—even if they appear to have had control over the content previously.

---

[2] Wiggins, Grant, and Jay McTighe. "Gaining Clarity on Our Goals." *Understanding by Design.* Alexandria, VA: ASCD, 2005, 79-80.