Anchor Paper Scoring and Rationales - Task: <u>Building Towers</u>

<u>Name: Student A</u>

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	Although the student built four towers, the student demonstrates an understanding of the concepts and skills associated with the task by labeling M for more and telling the teacher which tower had the fewest.
Problem Solving	Proficient	By labeling each tower as least compared to the tower with the most, the student produces a solution relevant to the problem and confirms the reasonableness of the solution. The strategy of building each tower, adding one more cube each time, displays an understanding of the underlying mathematical concept of more and fewer.
Communication and Reasoning	Proficient	The student uses labels M (most) and L (least) as mathematical language to communicate thinking. These labels also serve as evidence to support the claim that towers have fewer and fewer cubes.
Representations and Connections	Proficient	The student uses accurate labels, M and L, to explore and model the problem.

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Name: Student B

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Advanced	The student uses the relationship between the number of cubes in each tower to demonstrate an understanding of the concepts and skills associated with more and fewer and greatest to least.
Problem Solving	Proficient	The student produces a solution relevant to the problem and confirms the reasonableness of the solution by identifying which tower has more and which tower has fewer.
Communication and Reasoning	Advanced	The student uses comprehensive reasoning and mathematical language to communicate thinking about how towers are ordered and which tower has more and fewer.
Representations and Connections	Proficient	The student uses a representation with accurate labels to explore and model the problem. The student accurately identifies more and fewer. The student accurately orders towers from greatest to least.

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Name: Student C

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student demonstrates a partial understanding of the concepts and skills associated with the task by creating three towers that are ordered greatest to least. Other parts of the solution--count of cubes in each tower and labels—are incorrect.
Problem Solving	Proficient	The student displays an understanding of the underlying mathematical concepts by using a problem solving strategy that leads to three towers, ordered greatest to least.
Communication and Reasoning	Developing	The student uses limited mathematical language to partially communicate thinking by labeling the first two towers as most and fewest and the third tower as less than the others.
Representations and Connections	Developing	The representation used by the student is limited due to the inaccurate use of the math vocabulary "fewest" to describe a tower less than another but not the tower with the least number of cubes.

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<u>Name: Student D</u>

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Emerging	When asked how many cubes are in each tower, the student counted the number of towers in order without attending to the quantity within and among each tower. This demonstrated no understanding of the concepts and skills associated with the task.
Problem Solving	Emerging	Although the student drew five objects that appear to be towers, the student did not produce a solution that is relevant to the problem.
Communication and Reasoning	Emerging	The student provides no reasoning or justification for the problem. The student identifies the tallest tower as the biggest, which is correct; however, the student also says the same tower has the least number of cubes. The student only had 13 cubes, but he identifies the tallest tower as having 32 cubes.
Representations and Connections	Emerging	The student does not make mathematical connections. The student doesn't identify the number of cubes in each tower, towers are not ordered, and identification of "least" is inaccurate.

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Name: Student E

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrates an understanding of the concepts and skills associated with the task by using 13 cubes to produce three towers where one has more and one has fewer. The solution is valid and correct.
Problem Solving	Proficient	The student produces a solution relevant to the problem and confirms the reasonableness of the solution by identifying which tower has more and which tower has the fewest.
Communication and Reasoning	Proficient	The student supports the claim that towers are ordered greatest to least by indicating towers go "this way" (arrow pointing left). The student labels each tower with the number of cubes to communicate thinking.
Representations and Connections	Proficient	The student uses a representation of three towers, labeled with the number of cubes and more/fewest, to explore and model the problem.

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<u>Name: Student F</u>

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student demonstrates a partial understanding of the concepts and skills associated with the task by building three towers. The student's solution is incomplete because towers are not ordered, and there are no labels to show more or fewer.
Problem Solving	Developing	The student builds three towers producing a solution relevant to the problem; however, the student does not confirm the reasonableness of the solution.
Communication and Reasoning	Emerging	The student uses no mathematical language to communicate which tower has more or fewer, nor does the student indicate whether the towers are ordered greatest to least or least to greatest. The student provides no justification that the parameters of the problem have been met.
Representations and Connections	Emerging	The student does not make mathematical connections to the number of cubes in each tower and whether one has more or fewer.