Anchor Paper Scoring and Rationales - Task: Bake Sale Fundraiser

Name: Student A

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student displays a partial understanding of the concepts and skills associated with the task. While they are able to determine that there are 14 cupcakes at the beginning of hour two, they do not add the fractions together in hour one leading to an incorrect solution.
Problem Solving	Developing	The student utilizes a problem solving strategy that displays a limited understanding of the underlying mathematical concept. The student is accurately able to determine that 3 cupcakes was 25% and therefore there were 12 cupcakes at the beginning of hour three but their strategy for determining the number of cupcakes sold in hour one is incorrect leading to a solution that is not reasonable.
Communication and Reasoning	Developing	The student is accurately able to explain what should be done at the end of the problem but is unable to accurately explain how to determine the number of cupcakes. Limited mathematical vocabulary is used.
Representations and Connections	Developing	The student is able to model the problem for the second, third, and fourth hour but does not represent the first hour leading to a partial connection to the problem.

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Name: Student B

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrates an understanding of percents and fractions of a whole as well as adding fractions. This student applies these concepts and skills to reach a valid and correct solution, even though this student does not state how much money is left over for spending money.
Problem Solving	Proficient	The student is able to determine common denominators to find the fractions of cupcakes sold in hour one. Additionally, they use repeated addition of 3 cupcakes being 25% to determine the number of cupcakes for 75%. The student further draws an image of 17/24 and shows how to split up the 14 remaining cupcakes into the 7/24.
Communication and Reasoning	Proficient	The student justifies the steps taken to arrive at the solution and supports the arguments with evidence from the problem. The student justifies the steps by saying "how many times 3 and 9 go into 24" and "25% is equal to the 4^{th} day. 25% is 3 cupcakes." The student uses mathematical language of common denominator, dollar, and percent to communicate thinking.
Representations and Connections	Proficient	The student uses multiple representations in the form of area models, algorithms, tables, and other drawings to explore and model the problem. These models have accurate labels that are relevant to the context of the problem.

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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 in the task which leads to an incomplete solution. The student finds 75% and 25% of the number of cupcakes sold during hours three and four and is able to add the additional two cupcakes for hour two. The student does not show an understanding of adding fractions for hour 1.
Problem Solving	Developing	The student displays a limited understanding of the underlying mathematical concept through the selected problem-solving strategy of equating percents with quarters. This allows the student to produce a solution that is relevant to the problem by finding the number of cupcakes sold in hours 2 through 4.
Communication and Reasoning	Emerging	The student does not provide a reasoning or justification for their work that is supported with evidence. There is no mathematical language used to communicate the thinking.
Representations and Connections	Developing	The student uses an incomplete representation that only models hours 2 through 4. Additionally, there is only a partial connection to the context of the problem as the student shows the hours but does not identify that the "3" is the number of cupcakes.

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Name: Student D

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 which leads to an incomplete solution. The student correctly understands how to find the number of cupcakes sold in hours 2 through 4 but does not understand how to add fractions with unlike denominators.
Problem Solving	Developing	The student's problem solving strategy displays a limited understanding of the underlying concept. The strategy used to find the number of cupcakes sold in hours 2 through 4 is well developed but the strategy for finding hour 1 is not a well selected strategy. Additionally, the student does not show evidence of a strategy for determining if they had enough money to go on the field trip and how much was left over.
Communication and Reasoning	Developing	The student provides reasoning and justification for the steps taken for hours 2 through 4 but does not provide justification for the entire problem. Limited mathematical language is used beyond adding fractions.
Representations and Connections	Developing	The student uses an incomplete representation to model the problem. The student accurately models the cupcakes in hour 3 and 4 but does not model the cupcakes in hour one which leads to a connection that is not relevant to the context of the problem.

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Name: Student E

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 which leads to an incomplete solution. The student is accurately able to work backwards and add fractions but does not display an understanding of finding the amount of money they made.
Problem Solving	Developing	The problem solving strategy displays a limited understanding of the underlying mathematical concept. The student displays a strategy for finding equivalent fractions to add for hour one and for finding the total number of cupcakes they started with but does not display a strategy for finding the amount of money they made.
Communication and Reasoning	Emerging	The student provides no justification or evidence and uses no mathematical language to communicate thinking.
Representations and Connections	Developing	The student uses an incomplete representation to model the problem and makes a very limited connection that is relevant to the context of the problem.

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Name: Student F

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrates an understanding of the skills associated with the task including percent of a whole, adding whole numbers and fractions with unlike denominators, and multiplying and subtracting decimals. The student applies the mathematical concepts and skills which lead to a valid and correct solution.
Problem Solving	Proficient	The student uses a problem solving strategy that displays an understanding of the underlying mathematical concept and produces a solution that is relevant to the problem. The student uses common denominators to add fractions and a model to find how many cupcakes there were at the beginning.
Communication and Reasoning	Advanced	The student provides a comprehensive justification for their work and uses precise mathematical language to communicate thinking. The student justifies the solution steps with evidence from the problem and their problem solving strategies.
Representations and Connections	Proficient	The student uses multiple representations with accurate labels to find percent of a number, common denominators, and the number of cupcakes at the beginning. The mathematical connections are relevant to the context of the problem as the student makes connections to cupcakes and dollars.