Anchor Paper Scoring and Rationales

Task: Toy Cars   **Student: A**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	**Proficient**	The student applied math concept and understanding of number relationships to reach a valid solution.
Problem Solving	**Proficient**	The student used cubes on a number track to solve and confirm reasonableness of solution.
Communication and Reasoning	**Proficient**	Student communicates thinking process of moving two more on the number track from Sam's quantity in the explanation scribed by teacher.
Representations and Connections	**Proficient**	The student uses representation to explore and model the problem. She reproduces an image of cubes on the number track to show solution of adding two more.

Anchor Paper Scoring and Rationales

Task: Toy Cars   **Student: B**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Emerging	Student applies limited mathematical concepts in an attempt to find a solution. He does not demonstrate an understanding of the relationship between quantities, but instead identifies the sum.
Problem Solving	Emerging	Student does not produce a solution that is relevant to the problem. Student interprets problem as giving Ellie two cars rather than a quantity two greater than Sam's quantity.
Communication and Reasoning	Developing	The student's reasoning of solution steps contains misconceptions. He shares a part/part /total reasoning approach when he explains, "Sam has 7 and Ellie has 2. They have 9 altogether". The problem is asking for the student to compare values.
Representations and Connections	Emerging	The student's model does not represent the action of the problem. The problem calls for a comparison of numbers or amounts and this is not demonstrated.

Anchor Paper Scoring and Rationales

Task: Toy Cars   **Student: C**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Emerging	The student applies limited mathematical concepts and skills in attempt to find a solution. She selects random values without regard to the relationship of values stated in the problem.
Problem Solving	Emerging	The problem-solving strategy does not produce a solution that is relevant to the problem. The student draws a picture to represent amounts given; however, she is unable to show a comparison of amounts.
Communication and Reasoning	Emerging	The student provides little math language to communicate her thinking. In the given task, Ellie is given more than Sam; however, there is no evidence to suggest that this was intentional.
Representations and Connections	Developing	The student makes a partial mathematical connection to the context of the problem in representation by giving both Sam and Ellie different amounts of cars.

Anchor Paper Scoring and Rationales

Task: Toy Cars   **Student: D**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student demonstrates a partial understanding of concepts and skills associated with this task. In his application of mathematics skills, the student arrives at an incorrect solution.
Problem Solving	Developing	The problem solving strategy of *counting on* produces a solution that is relevant to problem but the student does not confirm the reasonableness of the solution.
Communication and Reasoning	Developing	The student's justification contains a misconception in that he recognizes there is a relationship between the number of cars; however he represents a "one more" relationship rather than "two more" relationship.
Representations and Connections	Proficient	The student uses a representation with labels to explore and model problem.

Anchor Paper Scoring and Rationales

Task: Toy Cars   **Student: E**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrates understanding of concepts associated with the task and shares two valid solutions.
Problem Solving	Proficient	The student displays understanding of number relationships by *counting on* to determine two more than a number.
Communication and Reasoning	Proficient	The student communicates his thinking process as scribed by the teacher. He justifies solution steps as counting on from Sam's number of cars to solve two more for Ellie.
Representations and Connections	Proficient	The student clearly shows amounts given to Sam and Ellie for comparison.

Anchor Paper Scoring and Rationales

Task: Toy Cars   **Student: F**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Advanced	The student demonstrates an understanding of concepts and skills associated with the task and uses relationships among math concepts to demonstrate two correct solutions.
Problem Solving	Advanced	The student's problem-solving strategy of "adding a group of two" for one friend is efficient. His strategy produces solutions relevant to the problem.
Communication and Reasoning	Advanced	The student communicates his thinking process using equations and makes connections among quantities. He describes and proves with unifix cubes how one quantity stays the same while the other increases by two. The student shows accurate use of symbolic notation. The teacher has scribed the student's reasoning.
Representations and Connections	Advanced	The student uses representations to demonstrate relationship of quantities and make a generalization. He demonstrated with concrete items and recorded with his thinking with math equations.

Anchor Paper Scoring and Rationales

Task: Toy Cars   **Student: G**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Advanced	The student demonstrates an understanding of concepts and skills associated with the task and uses relationships among mathematical concepts. The student identifies a pattern and uses the pattern to produce multiple solutions.
Problem Solving	Advanced	The student uses an efficient strategy to solve the problem and then creates multiple solutions using an identified pattern. She initially *counts on* to reach a valid solution and then uses a pattern; select a number, skip one, and the next number will produce the two more relationship.
Communication and Reasoning	Proficient	The student demonstrates reasoning of solution steps by "counting on" with initial solution scribed by teacher. She supports her claim that this works with any numbers with evidence shown in list and the crossing out of "the number after" to reach the number two more.
Representations and Connections	Advanced	The student creates representations with accurate labels to explore and model the problem. She uses her generated list to analyze relationships and extend thinking.

Anchor Paper Scoring and Rationales

Task: Toy Cars   **Student: H**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Advanced	The student demonstrates and applies relationships among mathematical concepts to determine multiple valid solutions. He applies the concept of two more relationship to both 3- and 4-digit numbers.
Problem Solving	Advanced	The student solves efficiently applying two more or two fewer strategies. He applies known relationship used with smaller numbers to 3 digit numbers and over decades.
Communication and Reasoning	Proficient	The student communicates his solutions with sentences describing quantities for both Sam and Ellie's number of cars.
Representations and Connections	Proficient	The student makes a mathematical connection that is relevant to the context of the problem. He describes adding two to any number given to Sam in the explanation given to the teacher.