

Anchor Paper Scoring and Rationales

Task: Picking Apples

Student: A

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrated an understanding of the concept of decomposing five by drawing three red apples and two green apples.
Problem Solving	Proficient	The student used a patterning approach to solving this problem. He/she used RGRGR to show the five apples. The strategy used displays an understanding of how five can be decomposed into parts.
Communication and Reasoning	Proficient	The student communicated his/her thinking process by using a red crayon to show red apples and a green crayon to show green apples.
Representations and Connections	Proficient	The student used an appropriate representation, labeled accurately, to model his/her solution to the problem.

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Student: B

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Advanced	The student used mathematical relationships to demonstrate an understanding of all the ways to decompose five. Application of those relationships lead to multiple correct solutions.
Problem Solving	Advanced	The student's problem-solving strategy is efficient as he/she used the commutative property to ensure all the different combinations of five were represented.
Communication and Reasoning	Advanced	The student's reasoning for the ways five can be decomposed is organized using the commutative property.
Representations and Connections	Proficient	The student used color coded pictorial representations to explore and model the combinations for five.

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Student: C

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student demonstrated a partial understanding of the concepts associated with the task by drawing five red apples. He/she was unable to proceed after he/she drew five apples that were all the same color.
Problem Solving	Emerging	The student did not have a problem solving strategy. Once he/she drew five red apples, he/she was not able to produce a solution that showed some green and some red apples.
Communication and Reasoning	Emerging	Once the student had a set of five red apples, he/she was unable to reason that there should be some apples of each color. He/she made random guesses for how many green apples there could be, but he/she could not provide evidence to support the claim.
Representations and Connections	Developing	The representation used to model the problem was incomplete. The student only showed red apples, and he/she was not able to connect the representation to the context of the problem.

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Student: D

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrated an understanding of the concepts and skills associated with this task by showing that five can be decomposed into sets of one and four.
Problem Solving	Proficient	The student produced a solution relevant to the problem. The solution displays an understanding that sets of smaller numbers exist inside a number, for example, one way to compose five is with a set of one and four.
Communication and Reasoning	Proficient	The student communicated his/her thinking by showing four red apples and one green apple.
Representations and Connections	Proficient	The student's representation models how the apples in Tom's bag might look. His/her solution is relevant to the context of the problem.

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Student: E

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrated an understanding of the mathematical concept by subtracting the extra apples in order to reach a solution equivalent to five.
Problem Solving	Proficient	The student produced a solution relevant to the problem. He/she confirmed the reasonableness of the solution by checking the total and crossing off the apples he/she did not need.
Communication and Reasoning	Proficient	The student demonstrated reasoning by thinking out loud about the number of apples he/she drew. He/she justified the solution by counting and crossing off the apples that made the set more than five.
Representations and Connections	Proficient	The student used a representation with accurate labels (green/red crayon) to explore and model the problem. The mathematical connections are relevant to the context of the problem.

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Student: F

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Emerging	By drawing 14 apples, the student demonstrated no understanding of the concept of decomposing five. He/she did not provide a solution relevant to the problem.
Problem Solving	Emerging	The student appeared to have a strategy for solving the problem as he/she drew apples in two different colors; however, the string of seven red and seven green apples did not produce a solution to the problem.
Communication and Reasoning	Emerging	The student provided no correct reasoning or justification for his/her solution.
Representations and Connections	Emerging	The student produced a representation that does not model the problem. He/she was unable to make a connection that 14 apples was too many.