



Applying and Problem-Solving

Measures

Area

Analytic Rubric for Jarring Problem

This analytic rubric provides a framework for evaluating a student's performance in determining the minimum size of the table required for 100 jars of jam and considering the sensibility of the answers in terms of practicality and safety, jar positioning, and proximity to the table edge.

| Element | h The learner | i The learner | j The learner | k The learner |
|-------------------------------------|--|--|---|---|
| Applying and problem-solving | Devises strategies to calculate measures where necessary (For example - adding or subtracting measurements). Measures and records with increasing accuracy and precision. | Uses measurement of an object to determine if it is suitable for a given purpose (For example - will it fit?). Calculates measurements with increasing accuracy in purposeful contexts. | Solves problems and practical tasks involving measurements of more than one attribute. Applies formulae in a meaningful way to solve problems efficiently. | Solves problems of increasing complexity involving the interpretation, calculation and presentation of measurements. Refines decision making for the purposes of more efficient problem-solving. |

(NCCA, 2022, p. 39)



| Category | Criteria | Observations |
|---|---|--------------|
| <p>Minimum Table Size</p> <p>Correctly determines the minimum size of the table required for 100 jars of jam.</p> <p>Considers the outline of the widest part of the jam jar (9cm in diameter) and the need to prevent toppling.</p> <p>Provides a clear and logical calculation or reasoning.</p> | <ol style="list-style-type: none">I. Accurately determines the minimum sizeII. Gives one solution to the problem by applying length by width rule. Calculates the computation using cm^2.III. Provides a reasonable estimate of the minimum sizeIV. Provides an inaccurate estimation/guess of the minimum table size | |
| <p>Consideration of Sensibility</p> <p>Identifies multiple sensible answers for the table size.</p> <p>Considers practicality, functionality, and safety aspects in relation to placing the jars on the table.</p> <p>Discusses the positioning of jars in relation to the edge of the table.</p> | <ol style="list-style-type: none">I. Identifies multiple sensible answers and discusses the positioning of the proximity of the jars to the edge of the tableII. Identifies sensible answers. Provides a reasonable discussion of the positioning of the jars in relation to the edge of the tableIII. Gives more than one solution to the problem. Converts cm^2 into m^2 by dividing by 10000.IV. Identifies only one answer for the table size. The discussion of the positioning of the jars is unrealistic or impractical in relation to the table edge | |



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| <p><i>Reasoning and Explanation</i></p> <p>Provides well-reasoned and detailed explanations for the chosen minimum table size and jar placement.</p> <p>Demonstrates an understanding of factors such as stability, space utilisation, and avoiding toppling.</p> | <ol style="list-style-type: none">I. Provides detailed and well-supported reasoningII. Provides reasons with some supporting evidenceIII. Gives more than two solutions to the problem. Moves flexibly between cm^2 and m^2. Consider that it would not be wise to have the jam jars right to the edge of the table but to allow a 1 cm approx. border all the way around in finding their solution.IV. Provides adequate but unsupported reasons or limited explanations for the chosen minimum table size | |
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