

Task Specific Rubric

Betty's Blocks

Grade 2

A Few Notes about Rubrics, Benchmark Papers and Scoring...

- Proficiency levels are determined by the content and performance standards, teachers should always compare the student's performance to the standards to assess proficiency levels.
- It is helpful for teachers to discuss the proficiency levels before scoring student work.
- The benchmark papers and task specific rubric are designed to help the teacher analyze student thinking and understanding at each of the four performance levels: Novice, Apprentice, Proficient/Practitioner, and Expert (NAPE).
- It is recommended that teachers use the task specific rubric given for the assessment to identify the specific math skills that make up each section of the four performance levels for the task.
- Teachers should also review the benchmark papers provided to get a sense of the mathematics that students will use to solve the task.
- Teachers should scan their students' papers to get a sense of the mathematical thinking their students are using to solve the task before they begin scoring student work.
- The benchmark papers and task specific rubric are generalizations of what student work could look like.
It is not possible to anticipate every answer a student can give, so in scoring student work the teacher must use these generalizations to come to their own conclusions as to where a student is performing on the assessment.
- Teachers should use the three analytic criteria of Understanding, Strategies and Communication to determine a student's holistic performance on a task. The holistic score reflects the overall student's performance on the task and indicates the student's understanding of the mathematical concepts being assessed in the task.



Rubric: Betty's Blocks

Grade 2: Target APS Mathematics Performance Standards

Strand I: Global Mathematical Processes

- Communicates mathematical thinking coherently and clearly to others.

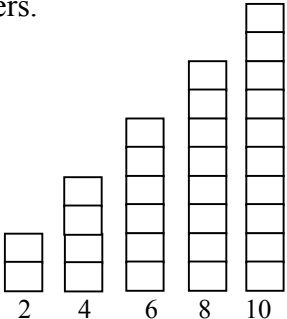
Strand II: Number Sense and Operations – Grade 2

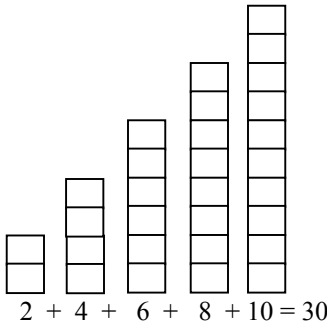
- Applies patterns in skip counting; compares and defends the relationship between skip counting, grouping, and equal sets.
- Uses and explains multiple strategies to solve addition and subtraction problems, with and without re-grouping, using two-digit numbers.

Strand V: Patterns, Functions and Algebraic Concepts – Grade 2

- Describes, creates and extends a wide variety of patterns.

Level	Understanding	Strategies, Reasoning, & Procedures	Communication
Unscorable	<ul style="list-style-type: none"> ✓ The student demonstrates no understanding of the mathematics in the problem. 	<ul style="list-style-type: none"> ✓ The student does not attempt to implement a strategy or procedure for solving the problem. ✓ The student makes random attempts to solve the task that clearly do not relate to the task. 	<ul style="list-style-type: none"> ✓ The student does not attempt to use mathematical representations, language or symbols to communicate a solution to the problem.

Level	Understanding	Strategies, Reasoning, & Procedures	Communication
Novice	<p>The student understands:</p> <ul style="list-style-type: none"> The circumstantial situation of the task and may be able to draw some of the block towers. <p>The student does not understand:</p> <ul style="list-style-type: none"> That the towers build using a pattern, even though he may notice that the towers are getting taller. 	<ul style="list-style-type: none"> ✓ The student represents the towers, but may not accurately represent the towers or accurately represents the towers but does not draw all 5 towers. ✓ The student does not label the towers or write a numeric value for the number of blocks in the tower. 	<ul style="list-style-type: none"> ✓ There is little communication of the procedures used. ✓ The student cannot verbalize his final answer. ✓ Little or no mathematical language and symbols used.
Apprentice	<p>The student understands that:</p> <ul style="list-style-type: none"> S/he must draw/represent the block towers. S/he needs to identify the number of blocks in each tower. The number of blocks in each tower follows a pattern. <p>The student does not understand that:</p> <ul style="list-style-type: none"> S/he needs to find the total number of blocks used to make the towers or that the student attempts to find the total number of towers but does not have the mathematical understanding to accurately determine the total number of blocks. 	<ul style="list-style-type: none"> ✓ The student builds or draws the towers. ✓ The student may represent the towers and their corresponding numeric values but makes no attempt or an incorrect attempt to determine the total number of blocks used to make the towers. ✓ The student may identify the block pattern of +2, but may not use the pattern to solve the task. <p>Sample Strategies:</p> <ul style="list-style-type: none"> ✓ The student draws and counts the blocks but makes no attempt to determine the total number of blocks used to make the towers. <div style="text-align: center;">  </div>	<ul style="list-style-type: none"> ✓ The student explains his/her reasoning and uses some basic math language and symbols without being clearly organized. ✓ The student does not state his/her final answer.

Level	Understanding	Strategies, Reasoning, & Procedures	Communication
Practitioner/Proficient	<p>The student understands that:</p> <ul style="list-style-type: none"> • S/he must represent the five block towers. • Each tower represents an increasing pattern of 2 blocks per tower. • S/he needs to find the total number of blocks used to make the towers. 	<ul style="list-style-type: none"> ✓ Mathematical procedures are used appropriately, with correct representation and notation. ✓ The student has a correct solution and demonstrates a strategy that will attain the correct solution (i.e., skip counting, equations) or a solution with minor mathematical errors.* (Incorrectly totaling the blocks in this task is not a minor mathematical error.) ✓ The student shows their understanding of the +2 pattern. ✓ All parts will be labeled and s/he will show a number sentence and/or an explanation of the skip counting strategy. <p>Sample Strategies:</p> <ul style="list-style-type: none"> ✓ The student creates a drawing to represent the block towers, and then uses a number sentence to label and add the blocks to get a sum of 30. <div style="text-align: center;">  <p>2 + 4 + 6 + 8 + 10 = 30</p> </div>	<ul style="list-style-type: none"> ✓ The student's explanations are concise and clear as to how s/he organized the problem and solutions. ✓ The student uses proper mathematical language and symbols to explain his/her answer. ✓ The student clearly states the towers represent a growing pattern of +2 and that the total number of blocks used is 30.

***Minor Errors:** Makes mistakes that do not change the understanding of the mathematical concept

Level	Understanding	Strategies, Reasoning, & Procedures	Communication
Expert	<p>The student’s understanding will demonstrate all of the ‘proficient’ criteria. The student understands that:</p> <ul style="list-style-type: none"> • S/he must represent the five block towers. • Each tower represents an increasing pattern of 2 blocks per tower. • S/he needs to find the total number of blocks used to make the towers. <p><u>Task Extension:</u> The expert in some way will demonstrate an exemplary understanding of the task and the mathematical concepts.</p> <p>Here is an example of an expert extension:</p> <ul style="list-style-type: none"> • The student includes a rule or generalization on the growing pattern. • The student extends the pattern. 	<p>The student’s solution will demonstrate all of the ‘proficient’ criteria.</p> <ul style="list-style-type: none"> • The student will represent his work with drawings and/or charts. • The student identifies the pattern and uses it to attain the correct solution. • All parts will be labeled and the addition of the blocks used will be stated in a number sentence or a skip counting strategy. <p><u>Task Extension:</u> The expert in some way will demonstrate an exemplary strategy of the task and the mathematical concepts.</p> <p>Here is an example of an expert extension:</p> <ul style="list-style-type: none"> • The student sees the pattern clearly and extends the pattern. For example: Tower 6 = 12 blocks Total = 42 Tower 7 = 14 blocks Total = 56 Tower 8 = 16 blocks Total = 72 	<p>The student’s communication will demonstrate all of the ‘proficient’ criteria.</p> <ul style="list-style-type: none"> • The student’s explanations are concise and clear as to how s/he organized the problem and solutions. • The student uses proper mathematical language and symbols to explain his/her answer. • The student uses appropriate mathematical language and symbols in his/her explanation of growing pattern and total number of blocks used to build the tower. <p><u>Task Extension:</u> The expert in some way will demonstrate an exemplary strategy of the task and the mathematical concepts.</p> <p>Here is an example of an expert extension:</p> <ul style="list-style-type: none"> • The student is able to explain the growing pattern or the alternate strategy used to solve the task.