



Grade 4 Mathematics Item Map: A Resource to Understanding Student Scores

Virginia students participate in grades 3-8 Virginia Growth Assessments and Standards of Learning tests in reading and mathematics. This item map is a resource that provides descriptions and examples of items students were likely to answer correctly based on the vertical scaled score they achieved on their test. A vertical scaled score is a score that allows comparisons between Virginia Growth Assessments and Standards of Learning tests.

The item map shown in the tables below provides examples of test question descriptions at different score points from 945-1830, the vertical scaled score range for Grade 4 Mathematics. These examples represent what students may see on the state assessments in Grade 4 Mathematics.

The descriptions are examples of what students may know or be able to do at each score point. Some descriptions include a released test question and answer options to further show what the student would *most likely answer correctly* if they achieved at or above that score point. This information, along with a student's test results, may be used to plan conversations with families, determine intervention strategies to strengthen student understanding, or establish a plan to accelerate learning.

Match the student's score to the closest number in the left column. In the right column is a description of an item the student would *most likely answer correctly*, based on their score. The student would also most likely correctly answer questions at all score points below the score they achieved.

Students who scored in the range 1511 – 1830 are well prepared for learning new grade-level content.

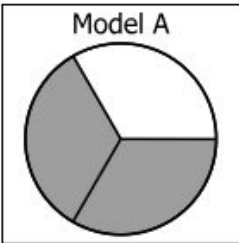
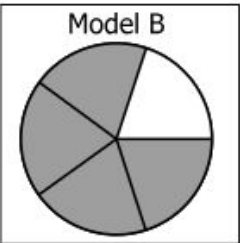
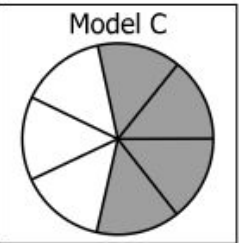
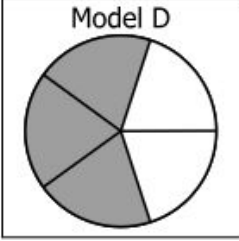
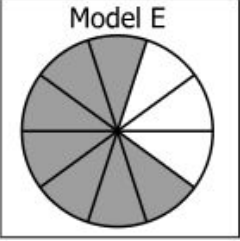
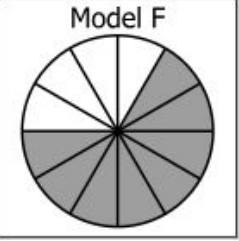
Score	Description of Test Item
1641	Estimate sums of whole numbers. (Computation and Estimation)

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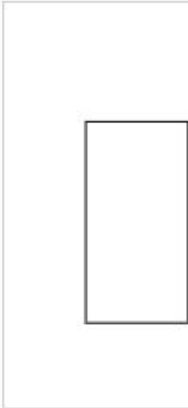
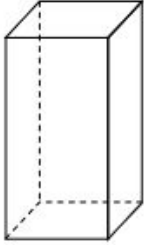







1629	<p>Solve a multistep contextual problem involving addition and/or subtraction of decimals. (Computation and Estimation)</p> <div style="border: 1px solid black; padding: 10px;"><p>Dr. Mendez used 3.42 liters of water on Monday. On Tuesday, she used 0.056 liter more water than she used on Monday. What was the total amount of water she used on Monday and Tuesday?</p><p><input type="radio"/> A. 6.896 liters</p><p><input type="radio"/> B. 6.84 liters</p><p><input type="radio"/> C. 3.98 liters</p><p><input type="radio"/> D. 3.476 liters</p></div>
1584	Recognize and extend a pattern. (Probability, Statistics, Patterns, Functions, and Algebra)
1538	Identify examples of perpendicular line segments in a contextual situation. (Measurement and Geometry)
1518	<p>Compare and order decimals without models. (Number and Number Sense)</p> <div style="border: 1px solid black; padding: 10px;"><p>Mandy wrote a number on a card. The number is between 25.491 and 28.263 on a number line. Which could be the number Mandy wrote?</p><p><input type="radio"/> A. 25.487</p><p><input type="radio"/> B. 28.46</p><p><input type="radio"/> C. 25.94</p><p><input type="radio"/> D. 28.502</p></div>

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Students who scored in the range 1397 – 1510 are at risk for needing additional support with learning grade-level content.

Score	Description of Test Item
1509	Analyze and interpret information presented in a line graph. (Probability, Statistics, Patterns, Functions, and Algebra)
1498	<p>Represent equivalent fractions using models. (Number and Number Sense)</p> <div style="border: 1px solid black; padding: 10px;"> <p>Directions: Select the correct answers.</p> <p>Identify the two models that are each shaded to represent a fraction equivalent to $\frac{4}{6}$.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Model A</p>  </div> <div style="text-align: center;"> <p>Model B</p>  </div> <div style="text-align: center;"> <p>Model C</p>  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 10px;"> <div style="text-align: center;"> <p>Model D</p>  </div> <div style="text-align: center;"> <p>Model E</p>  </div> <div style="text-align: center;"> <p>Model F</p>  </div> </div> <div style="margin-top: 10px; border: 1px solid gray; padding: 5px; display: flex; flex-wrap: wrap;"> <div style="border: 1px solid blue; padding: 2px 10px; margin: 2px;">Model A</div> <div style="border: 1px solid blue; padding: 2px 10px; margin: 2px;">Model B</div> <div style="border: 1px solid blue; padding: 2px 10px; margin: 2px;">Model C</div> <div style="border: 1px solid blue; padding: 2px 10px; margin: 2px;">Model D</div> <div style="border: 1px solid blue; padding: 2px 10px; margin: 2px;">Model E</div> <div style="border: 1px solid blue; padding: 2px 10px; margin: 2px;">Model F</div> </div> </div>

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1474	<p>Describe, compare, and contrast characteristics of plane and solid geometric figures. (Measurement and Geometry)</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Which statement about the rectangle and the rectangular prism is true?</p> <div style="display: flex; align-items: center; justify-content: center; gap: 20px;">   <div style="border: 1px solid gray; padding: 5px; display: flex; flex-direction: column; gap: 5px;">        </div> </div> <p><input type="radio"/> A. The rectangle has 4 sides and the rectangular prism has 12 edges.</p> <p><input type="radio"/> B. The rectangle has 4 vertices and the rectangular prism has 7 vertices.</p> <p><input type="radio"/> C. The number of edges of the rectangular prism is 2 times the number of sides of the rectangle.</p> <p><input type="radio"/> D. The number of vertices of the rectangular prism is 3 times the number of vertices of the rectangle.</p> </div>
1451	<p>Determine the quotient of two whole numbers, with a remainder. (Computation and Estimation)</p>
1426	<p>Solve a multistep contextual problem involving addition and/or subtraction of decimals. (Computation and Estimation)</p>

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Students who scored in the range 945 – 1396 need additional support with prior knowledge and foundational skills while learning grade-level content.

Score	Description of Test Item						
1378	Determine the equivalent fraction and decimal for a given model. (Number and Number Sense)						
1344	Solve a contextual problem involving weight using U.S. Customary units. (Measurement and Geometry)						
1307	<p>Solve a contextual problem involving addition or subtraction of decimals. (Computation and Estimation)</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>This table shows the amount of dirt a dump truck unloaded at two different sites.</p> <p style="text-align: center;">Dump Truck Loads</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Site</th> <th>Amount of Dirt (tons)</th> </tr> </thead> <tbody> <tr> <td>K</td> <td>0.438</td> </tr> <tr> <td>L</td> <td>3.871</td> </tr> </tbody> </table> <p>What is the total amount of dirt that was unloaded from the dump truck at sites K and L?</p> <p> <input type="radio"/> A. 3.209 tons <input type="radio"/> B. 3.219 tons <input type="radio"/> C. 4.309 tons <input type="radio"/> D. 4.319 tons </p> </div>	Site	Amount of Dirt (tons)	K	0.438	L	3.871
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K	0.438						
L	3.871						

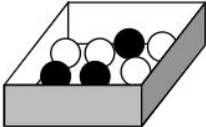
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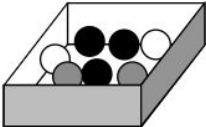
Represent a given probability with a model. (Probability, Statistics, Patterns, Functions, and Algebra)

Bronwyn has boxes with white, black, and gray marbles in them. She will take one marble from each box without looking. The marbles are the same size and shape. From which box is it impossible for her to take a gray marble?

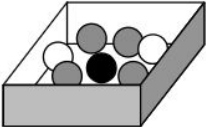
Box A



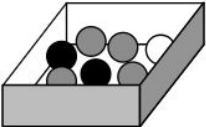
Box B



Box C



Box D



Select the correct answer.

A. Box A
 B. Box B
 C. Box C
 D. Box D

1241

Recall multiplication facts. (Computation and Estimation)