# Grade 6 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 1050-1930, the vertical scaled score range for Grade 6 Mathematics. These examples represent what students may see on the state assessments in Grade 6 Mathematics.
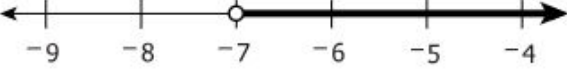
The descriptions are examples of what students may know or be able to do at each score point. Some descriptions include a released test question and answer options to further show what the student would *most likely answer correctly* if they achieved at or above that score point. This information, along 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 1603 – 1930 are well prepared for learning new grade-level content.

| Score | Description of Test Item |
|---|---|
| 1730 | Create a table of values representing a proportional relationship between two quantities, when given a ratio. (Probability, Statistics, Patterns, Functions, and Algebra) |

| 1705 | Determine solutions of a linear inequality in one variable, given the graph of the inequality on a number line. (Probability, Statistics, Patterns, Functions, and Algebra) |
|---|---|

**The graph represents all solutions to an inequality.**



**Which values are solutions of the inequality shown on the graph?**

○ A. $^-1$ and $10$

○ B. $^-7$ and $^-4$

○ C. $^-7$ and $7$

○ D. $^-9$ and $^-8$

| 1659 | Graph an ordered pair on the coordinate plane when given a description of its distance from and relation to the axes. (Measurement and Geometry) |
|---|---|
| 1626 | Solve a single-step contextual problem involving division of mixed numbers. (Computation and Estimation) |

**Directions: Type your answer in the box.**

William made $24$ cups of popcorn. He can completely fill a bag with $2\frac{2}{3}$ cups of popcorn. What is the total number of bags of this size William can completely fill with popcorn?

☐ **bags**

| 1622 | Represent equivalent relationships between decimals, fractions, and percents. (Number and Number Sense) |
|---|---|

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**Students who scored in the range 1496 – 1602 are at risk for needing additional support with learning grade-level content.**
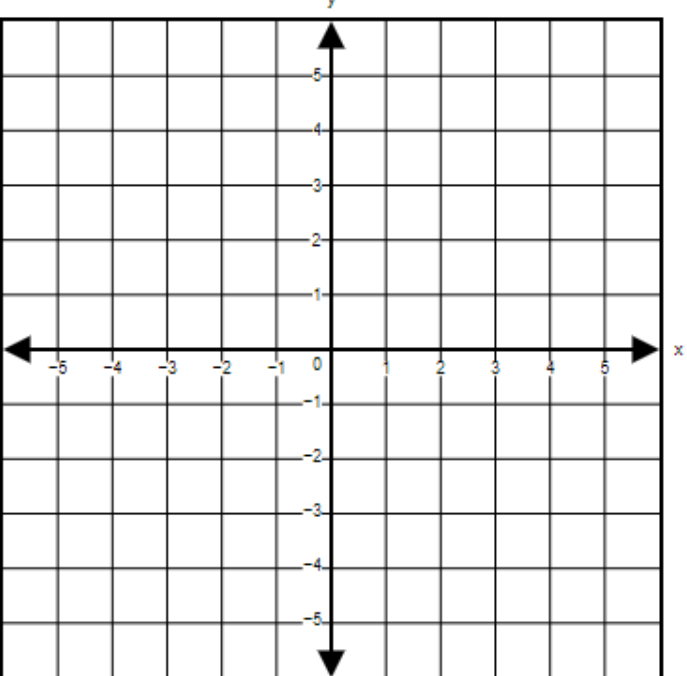
| Score | Description of Test Item |
|---|---|
| 1592 | Identify congruent line segments on a coordinate plane. (Measurement and Geometry) |
| 1590 | Solve a multistep problem in context involving operations with integers. (Computation and Estimation) |

Ian borrowed $60 from his mother to buy a video game.

- The amount he borrowed is represented by $^-60$.
- He plans to pay her back an equal amount each week for 12 weeks.

Which value represents the remaining amount he owes his mother after paying her back for 3 weeks?

- A. $^-15$
- B. $^-24$
- C. $^-36$
- D. $^-45$

| 1558 | Compare fractions, decimals, and percents. (Number and Number Sense) |
|---|---|
|  | **Which number will make this inequality true?** $$4\frac{3}{5} < \square$$ <br><br> A. $\dfrac{46}{100}$ <br><br> B. $4.3$ <br><br> C. $460\%$ <br><br> D. $\dfrac{43}{5}$ |
| 1518 | Use symbols to represent a linear inequality in one variable, given the graph of the inequality on a number line. (Probability, Statistics, Patterns, Functions, and Algebra) |
| 1505 | Compare the circumference and diameter of various circles to develop an approximation for pi. (Measurement and Geometry) |

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## Students who scored in the range 1050 – 1495 need additional support with prior knowledge and foundational skills while learning grade-level content.

| Score | Description of Test Item |
|-------|--------------------------|
| 1464 | Compare integers using symbols. (Number and Number Sense) |
| 1450 | Represent subtraction of integers with a pictorial model. (Computation and Estimation) |
| 1436 | Graph a point in the correct quadrant or on the correct axis. (Measurement and Geometry) |

Directions: Plot a point on the grid.

Graph an ordered pair in Quadrant III on this coordinate grid.

| 1409 | Solve a multistep problem in context involving operations with integers. (Computation and Estimation) |
|------|---------------------------------------------------------------------------------------|

A student played two levels of a video game. The table shows the change in the number of points during each level.

**Video Game Points**

| Level | Change in Points |
|-------|------------------|
| One   | $+126$           |
|       | $^-5$            |
|       | $^-10$           |
|       | $^-15$           |
| Two   | $+67$            |
|       | $^-10$           |
|       | $^-10$           |

What was the combined total number of points the student had at the end of level one and level two?

○ A. 143

○ B. 153

○ C. 155

○ D. 183

| 1398 | Solve a one-step linear equation using a model. (Probability, Statistics, Patterns, Functions, and Algebra) |
|------|-------------------------------------------------------------------------------------------------------------|