

## Grade 6 Mathematics Computer-Based Released Items

The spring 2017 grade 6 Mathematics test was administered in two formats: a computer-based version and a paper-based version.

Released items from the **computer-based version** of the test are available online at [mcas.pearsonsupport.com/released-items](http://mcas.pearsonsupport.com/released-items). This document provides information about each released item from the computer-based test, including: reporting category, standard(s) covered, item type, item description, and correct answer (for selected-response and short-answer items only). Information about unreleased operational items is also presented here.

Released items from the **paper-based version** of the test are available on the Department's website at [www.doe.mass.edu/mcas/testitems.html](http://www.doe.mass.edu/mcas/testitems.html).

**Grade 6 Mathematics**  
**Spring 2017 Computer-Based Released Operational Items:**  
**Reporting Categories, Standards, Item Descriptions, and Correct Answers**

| Item No. | Reporting Category                           | Standard  | Item Type* | Description   | Correct Answer**  |
|----------|--|-----------|------------|---|-------------------|
| 1        | <i>Statistics and Probability</i>            | 6.SP.2.04 | SR         | Determine which circle graph represents given data.   | B                 |
| 2        | <i>Geometry</i>                              | 6.G.1.04  | SA         | Determine the surface area of a three-dimensional figure given its net.   | 240 square inches |
| 3        | <i>Expressions and Equations</i>             | 6.EE.2.07 | SR         | Find the value of the unknown variable in an equation that represents a real-world context.   | D                 |
| 4        | <i>Ratios and Proportional Relationships</i> | 6.RP.1.01 | SR         | Determine which ratio describes a given ratio relationship in a real-world context.   | A                 |
| 5        | <i>Expressions and Equations</i>             | 6.EE.3.09 | CR         | Analyze the relationship between the variables in a table to create and solve an equation that represents a given real-world context. |                   |

\* Mathematics item types are: selected-response (SR), short-answer (SA), and constructed-response (CR).

\*\*Answers are provided here for selected-response and short-answer items only. Sample responses and scoring guidelines for any constructed-response items will be posted to the Department's website later this year.

**Grade 6 Mathematics**  
**Spring 2017 Computer-Based Unreleased Operational Items:**  
**Reporting Categories, Standards, and Item Descriptions**

| Item No. | Reporting Category                           | Standard  | Item Type* | Description  |
|----------|--|-----------|------------|--|
| 6        | <i>Expressions and Equations</i>             | 6.EE.3.09 | SA         | Analyze the relationship in an input-output table, and determine the value of the output given the value of a new input. |
| 7        | <i>Geometry</i>                              | 6.G.1.03  | SA         | Graph a triangle given the coordinates of the vertices and use two of the coordinates to determine the length of a side. |
| 8        | <i>The Number System</i>                     | 6.NS.2.04 | SR         | Given an expression, use the distributive property to select an equivalent expression.                                   |
| 9        | <i>Statistics and Probability</i>            | 6.SP.2.04 | SA         | Create a histogram based on given data from a real-world situation.  |
| 10       | <i>The Number System</i>                     | 6.NS.2.02 | SA         | Find the quotient of two multi-digit whole numbers.  |
| 11       | <i>Ratios and Proportional Relationships</i> | 6.RP.1.03 | SA         | Solve multiple unit rate problems based on given real-world context.   |

| <b>Item No.</b> | <b>Reporting Category</b>                    | <b>Standard</b> | <b>Item Type*</b> | <b>Description</b>   |
|-----------------|--|-----------------|-------------------|--|
| 12              | <i>Expressions and Equations</i>             | 6.EE.2.06       | SR                | Determine which expression represents a given real-world situation.  |
| 13              | <i>Geometry</i>                              | 6.G.1.01        | CR                | Solve real-world problems involving measurements of circles.   |
| 14              | <i>The Number System</i>                     | 6.NS.2.03       | SA                | Find the difference of two multi-digit decimals.   |
| 15              | <i>The Number System</i>                     | 6.NS.1.01       | CR                | Solve a real-world problem involving quotients of fractions.   |
| 16              | <i>Expressions and Equations</i>             | 6.EE.2.05       | SR                | Find the value of the unknown variable in an equation.   |
| 17              | <i>Statistics and Probability</i>            | 6.SP.2.05       | SR                | Determine which statements about the mean, median, interquartile range, and mean absolute deviation describe the data in a given box plot. |
| 18              | <i>Expressions and Equations</i>             | 6.EE.1.02       | SR                | Find the value of the unknown variable in an expression that represents a real-world context.  |
| 19              | <i>Statistics and Probability</i>            | 6.SP.2.05       | SR                | Determine the mean absolute deviation based on data collected from a real-world context.   |
| 20              | <i>The Number System</i>                     | 6.NS.3.05       | SR                | Select the quantities as they relate to the meaning of zero in a given real-world context.   |
| 21              | <i>Expressions and Equations</i>             | 6.EE.2.07       | SA                | Find the value of the unknown variable in a given equation.  |
| 22              | <i>Statistics and Probability</i>            | 6.SP.1.02       | SR                | Determine which dot plot represents data from a real-world context.  |
| 23              | <i>Expressions and Equations</i>             | 6.EE.2.08       | SA                | Graph the solution set of a given inequality on a number line.   |
| 24              | <i>Ratios and Proportional Relationships</i> | 6.RP.1.03       | SA                | Analyze proportions in a table to solve multiple unit rate problems, based on given real-world context.                                    |
| 25              | <i>Expressions and Equations</i>             | 6.EE.1.03       | SR                | Determine which equation is equivalent to a given equation that represents a real-world context.   |
| 26              | <i>Statistics and Probability</i>            | 6.SP.2.04       | SR                | Interpret a circle graph to solve a real-world problem.  |
| 27              | <i>Expressions and Equations</i>             | 6.EE.2.07       | SA                | Determine which equations represent a given real-world context, and solve a problem based on the same context.                             |
| 28              | <i>Expressions and Equations</i>             | 6.EE.1.01       | SR                | Determine which expression involving a whole-number exponent represents a given multi-digit whole number.                                  |
| 29              | <i>Statistics and Probability</i>            | 6.SP.2.05       | SA                | Solve a real-world problem given the measure of center that describes the situation.   |
| 30              | <i>Statistics and Probability</i>            | 6.SP.2.04       | SR                | Interpret a dot plot to solve a real-world problem.  |
| 31              | <i>Ratios and Proportional Relationships</i> | 6.RP.1.03       | SA                | Solve real-world problems involving percents.  |
| 32              | <i>Geometry</i>                              | 6.G.1.02        | SR                | Find the volume of a given right rectangular prism.  |
| 33              | <i>Expressions and Equations</i>             | 6.EE.2.06       | SR                | Determine which expression represents a given real-world context.  |
| 34              | <i>The Number System</i>                     | 6.NS.1.01       | CR                | Solve a real-world problem involving quotients of fractions.   |

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