

## **Computer-Based Released Items** **Grade 3 Mathematics** **Spring 2022**

The spring 2022 grade 3 Mathematics test was administered in two primary formats: a computer-based version and a paper-based version. The vast majority of students took the computer-based test. The paper-based test was offered as an accommodation for students with disabilities who are unable to use a computer, as well as for English learners who are new to the country and are unfamiliar with technology.

The Department of Elementary and Secondary Education is releasing items from both versions of the test to provide information about the knowledge and skills that students are expected to demonstrate.

- Released items from the **computer-based test** are available online at [mcas.pearsonsupport.com/released-items](https://mcas.pearsonsupport.com/released-items). The computer-based released items are collected in a mini test called an ePAT (electronic practice assessment tool). Items in the ePAT are displayed in TestNav 8, the testing platform for the computer-based tests.
- Released items from the **paper-based test** are available in PDF format on the Department’s website at [www.doe.mass.edu/mcas/testitems.html](http://www.doe.mass.edu/mcas/testitems.html).

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.

### **A Note about Testing Mode**

Most of the operational items on the grade 3 Mathematics test were the same, regardless of whether a student took the computer-based version or the paper-based version. In places where a technology-enhanced item was used on the computer-based test, an adapted version of the item was created for use on the paper test. These adapted paper items were multiple-choice, multiple-select, or short-answer items that tested the same Mathematics content and assessed the same standard as the technology-enhanced item.

**Grade 3 Mathematics**  
**Spring 2022 Computer-Based Released Operational Items**

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description	Correct Answer**
1	Measurement and Data	3.MD.A.2	SR	Interpret a measurement, in increments of 25, from a diagram of a metric scale.	B
2	Operations and Algebraic Thinking	3.OA.A.2	SR	Determine which word problem can be solved using a given division equation.	D
3	Measurement and Data	3.MD.B.4	SA	Create a line plot from a given set of data.	<i>see page 6</i>
4	Number and Operations in Base Ten	3.NBT.A.1	SR	Round three-digit whole numbers to the nearest hundred.	<i>see page 6</i>
5	Number and Operations-Fractions	3.NF.A.2	CR	Plot points to show the location of fractions on a given partitioned number line and give instructions on how to determine where to plot a fraction greater than one on a given partitioned number line.	
6	Operations and Algebraic Thinking	3.OA.A.4	SA	Determine which whole numbers will make given division and multiplication equations true.	<i>see page 6</i>
7	Number and Operations-Fractions	3.NF.A.3	SR	Identify the fractional equivalent of a given whole number.	B
8	Operations and Algebraic Thinking	3.OA.B.6	SA	Write a multiplication equation that can be used to help solve a given division equation.	<i>see page 6</i>
9	Geometry	3.G.A.2	SR	Identify the shaded areas of shapes that represent a given fraction.	A,D
10	Number and Operations in Base Ten	3.NBT.A.3	SR	Solve a word problem by multiplying a single-digit whole number by a multiple of 10.	A
11	Operations and Algebraic Thinking	3.OA.D.9	SA	Identify the next term in a given subtraction pattern.	52
12	Number and Operations in Base Ten	3.NBT.A.1	SR	In a real-world problem, select numbers that, when rounded to the nearest hundred, will equal a specified number.	C,E
13	Geometry	3.G.A.2	SA	Write the fraction that represents one part of a given circle that is divided into equal parts.	<i>see page 7</i>

14	Number and Operations-Fractions	3.NF.A.3	SR	From a given set of fractions, determine the fraction that is not equivalent to the other fractions.	B
15	Measurement and Data	3.MD.C.7	CR	Determine the area of rectangles by counting squares or by multiplying the length times the width, and then determine the total area of a rectilinear figure.	
16	Operations and Algebraic Thinking	3.OA.D.8	SR	Solve a two-step word problem involving addition and subtraction.	A
17	Operations and Algebraic Thinking	3.OA.A.1	SR	Determine how a two-digit product can be expressed as equal groups of equal numbers of objects.	C
18	Operations and Algebraic Thinking	3.OA.A.3	SA	Write a multiplication or division equation that can be used to solve a given word problem.	<i>see page 7</i>
19	Number and Operations-Fractions	3.NF.A.1	SA	Create a fraction model to represent a given fraction in the form $a/b$ .	<i>see page 7</i>
20	Measurement and Data	3.MD.C.6	SA	Determine the area of an irregular shape by counting the square tiles that cover it.	23

\* 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. Pages 6 through 8 of this document provide correct answers for technology-enhanced (TE) items. Sample responses and scoring guidelines for constructed-response items will be posted at [www.doe.mass.edu/mcas/student/default.html](http://www.doe.mass.edu/mcas/student/default.html).

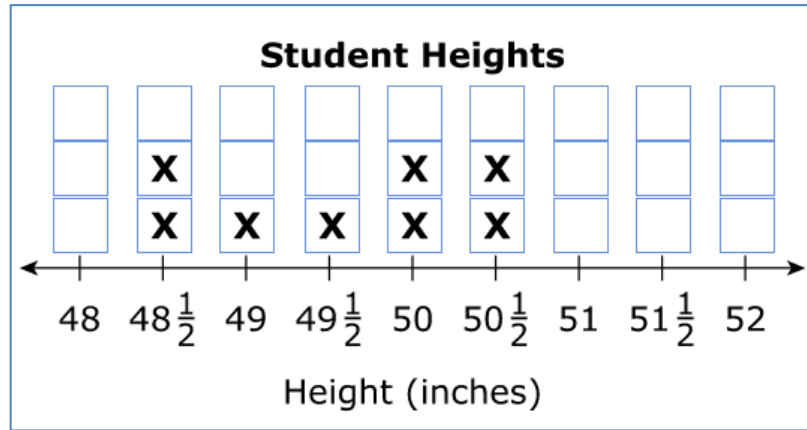
**Grade 3 Mathematics**  
**Spring 2022 Computer-Based Unreleased Operational Items**

<b>CBT Item No.</b>	<b>Reporting Category</b>	<b>Standard</b>	<b>Item Type*</b>	<b>Item Description</b>
21	Number and Operations-Fractions	3.NF.A.1	SA	Determine the fraction that is represented by a given fraction model.
22	Measurement and Data	3.MD.D.8	SR	Given shapes and their dimensions, determine which shape has a specified perimeter and has the largest area.
23	Operations and Algebraic Thinking	3.OA.C.7	SA	Create a division expression that will have a given quotient.
24	Measurement and Data	3.MD.C.5	SR	Determine the correct statement relating square units to the area of a given figure.
25	Measurement and Data	3.MD.A.1	SR	Measure a time interval given a start and end time shown on two different digital clocks.
26	Geometry	3.G.A.1	SR	Identify the mathematical names of shapes that share two given attributes.
27	Number and Operations-Fractions	3.NF.A.3	SR	Identify a fraction that is equivalent to a given fraction when both fractions are represented by models.
28	Operations and Algebraic Thinking	3.OA.D.9	CR	Identify a given subtraction pattern, extend another pattern using the same rule, and use properties of odd and even numbers to describe similar features in the two patterns.
29	Geometry	3.G.A.1	SA	Determine which shapes are a specific type of quadrilateral.
30	Measurement and Data	3.MD.C.7	SR	Determine two expressions that can be used to find the area of a rectangle using the distributive property.
31	Number and Operations in Base Ten	3.NBT.A.3	SR	Solve a word problem by multiplying a single-digit whole number by a multiple of 10.
32	Number and Operations-Fractions	3.NF.A.1	SR	Determine which fraction model represents a given fraction.
33	Measurement and Data	3.MD.C.7	SR	Complete an equation that can be used when decomposing a rectilinear figure to find the total area.
34	Operations and Algebraic Thinking	3.OA.B.6	SR	Determine the multiplication equation that can be used to solve a division word problem.

35	Operations and Algebraic Thinking	3.OA.B.5	SA	Determine the missing factor that can be used with the distributive property to find equivalent products.
36	Number and Operations-Fractions	3.NF.A.2	SR	Plot a point on a partitioned number line to show the location of a unit fraction.
37	Number and Operations in Base Ten	3.NBT.A.2	CR	Solve word problems involving addition and subtraction with three-digit whole numbers.
38	Operations and Algebraic Thinking	3.OA.A.3	SA	Use an array to write a multiplication equation that matches a division equation.
39	Measurement and Data	3.MD.B.3	SR	Solve a one-step "how many more" problem using a given bar graph.
40	Geometry	3.G.A.1	SR	Identify the true statements about attributes of three types of quadrilaterals.

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

**Correct Answer for CBT Item #3: Technology-Enhanced Item**



**Correct Answer for CBT Item #4: Technology-Enhanced Item**

The number 324 rounded to the nearest hundred is .

The number 186 rounded to the nearest hundred is .

The number 242 rounded to the nearest hundred is .

**Correct Answer for CBT Item #6: Technology-Enhanced Item**

$$9 \times \boxed{8} = 72$$
$$35 \div 5 = \boxed{7}$$
$$\boxed{8} \times 7 = 56$$

**Correct Answer for CBT Item #8: Technology-Enhanced Item**

$$\boxed{3 \times n = 18}$$

Or

$$\boxed{6 \times 3 = 18}$$

Or

**any equivalent multiplication equation.**

**Correct Answer for CBT Item #13: Technology-Enhanced Item**

$\frac{1}{3}$
Or
Any equivalent fraction.

**Correct Answer for CBT Item #18: Technology-Enhanced Item**

$48 \div 6 = n$
Or
$6 \times n = 48$
Or
any equivalent equation.

**Correct Answer for CBT Item #19: Technology-Enhanced Item**
