Teacher Guide

Directions for Test Administration

Mathematics

Grades 6 & 7

Mathematics Table of Contents

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Purpose

The Directions for Test Administration (DTA) is required for administration.
The DTA provides the exact wording of the items to be used by the TA during administration, the materials needed in preparation of the test, and guidelines for how to present the items to the student.

Guidance on Printed Materials

Reference Sheets include required graphics that are to be printed and presented to the student during the administration of selected response items. Mathematics Reference Sheets for Sample Items are located in the front of this DTA. Constructed response (CR) items include cutouts that are to be printed and presented to the student during the administration of constructed-response items. The CR cutouts for Sample Items are also located in the front of this DTA. The TA may print additional Reference Sheets or CR cutouts as needed.
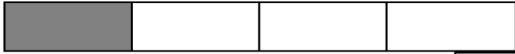
Directions

Know and follow all directions for test administration. The grey, italicized text directs the TA to point to specific parts of the item. If the item includes alternative text, grey italicized text inside brackets directs the TA to read the alternative text that describes the graphic to the student. All language referring to students with a visual impairment is inclusive of students who are blind or visually impaired.

Please see example below:

Mathematics Item Example

This item is about fractions. — TA reads item directions to the student.

This fraction bar is divided into 4 equal parts.
Point to each part. — Directions for TA to point to each part.

There is 1 part that is shaded. — TA reads item text to the student.
Point to the shaded part. — Directions for TA to point to shaded part.

This fraction shows that 1 of the 4 parts is shaded. — TA reads item text to the student.
Point to the fraction. — Directions for TA to point to the fraction.

$$\frac{1}{4}$$

There is 1 part shaded.
Point to the shaded part.

What part of the fraction is shaded?
Point to and read each option to the student.

A. $\frac{1}{2}$

B. $\frac{1}{4}$ — TA reads answer choices to the student.

C. $\frac{1}{8}$

Procedures for Constructed-Response (CR) Items

The CR tasks require students to construct an answer rather than select an answer from predetermined multiple-choice options. Constructed-response items are presented as novel tasks using materials and content presented in a test format that allows the TA to print out interactive materials and manipulatives for the student. Each item is presented to the student in a standardized, scripted sequence of steps, culminating in a TA's scoring of the student performance against the Mathematics Scoring Rubrics. The Mathematics Scoring Rubrics are included with the appropriate constructed-response items in the DTA and provide scoring standards that must be used to evaluate student responses.

Guidance on Administering the CR Items

- Become familiar with the specific test items and administration requirements.
- Rehearse administering each task before administering it to a student by reading the script for each task.
- Become familiar with the scoring rubric and directions for scoring the student response.
- Prepare the test setting.
    - Assemble any needed materials (pencils, markers, etc.).
    - Provide any allowable manipulatives (e.g., counters).
    - Have a calculator available, if allowed and/or if needed.
    - Provide materials required for student accommodations.
    - Locate the appropriate stimulus material.
    - Enlarge any stimulus materials, using the enlarge feature on a printer or copier, as needed.
    - Print all materials that the student will need (e.g., reference sheets, CR cutouts, etc.).
    - Cut the stimulus materials apart, as needed (e.g., CR tiles).
    - Position the student so that he or she will have the optimal vantage to view and manipulate materials in order to facilitate sustained attention.
    - Eliminate noise and visual distractions that may divert the student's attention.
- For students with a visual impairment/blindness, TAs may use tactile graphics or object replacements as needed.

Mathematics Grade 6

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Mathematics Sample Items Reference Sheets

Manipulatives and Instructional Materials

The following manipulatives and materials can be provided to the student during testing as necessary. The Reference Sheets and CR cutouts, or their adapted equivalents, must be provided as instructed in the DTA. Manipulatives and other materials provided during testing should be regularly used during instruction by the student. Do not introduce any manipulatives or other materials that the student is not familiar with shortly before or during testing.

Grade 6

Printed number line and small object found in Mathematics Constructed-Response Cutouts section (Item 5)

TA may print additional reference sheets, as needed.
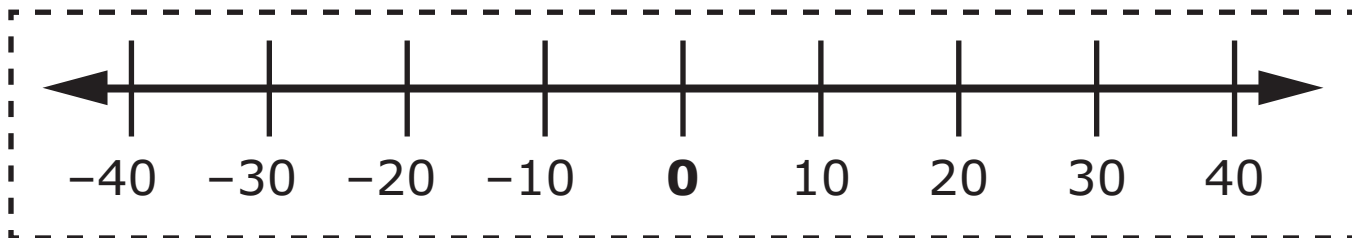
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Mathematics Sample Items
Constructed-Response Cutouts

TA may print additional CR cutouts, as needed.

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Sample Items - Constructed-Response Item 5

Please print this page prior to test administration for student completion of constructed-response item.
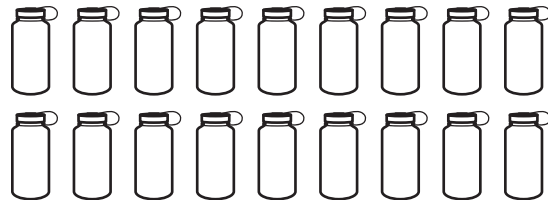
Mathematics
Beginning Grade 6

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Calculator may be used on this item.
Counters or other manipulatives may be used to solve this problem.

Item 1

Mrs. Whitaker had 18 water bottles.
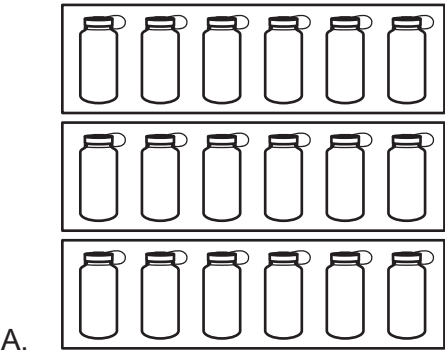
Point to the water bottles.

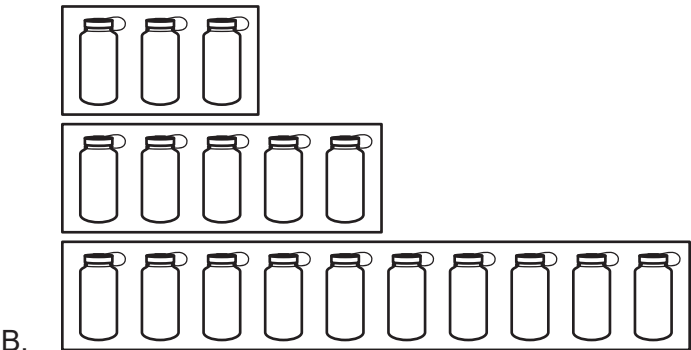Mrs. Whitaker divided the water bottles into 3 equal groups.

Which picture shows the water bottles divided into 3 equal groups?

Point to each answer option.

[For students with a visual impairment, read "A. This is a picture of three groups of water bottles. There are six water bottles in the first group, six water bottles in the second group, and six water bottles in the third group.]

A.

[For students with a visual impairment, read "B. This is a picture of three groups of water bottles. There are three water bottles in the first group, five water bottles in the second group, and ten water bottles in the third group.]

B.

Calculator may be used on this item.
Counters or other manipulatives may be used to solve this problem.

Item 2

The area of a rectangle is the space inside the rectangle. This rectangle has been divided into unit squares.
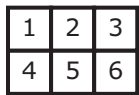
Point to the rectangle.

[For students with a visual impairment, read "The length is three units. The width is two units."]

You can count the number of unit squares inside a rectangle to find its area.

Point to each number inside the rectangle as you read it.

[For all students, read "This is a rectangle. The length is three units. The width is two units. The rectangle is made up of unit squares that are labeled one, two, three, four, five, six."]

1	2	3
4	5	6

There are 6 unit squares inside the rectangle, so the area is 6 square units. This is a different rectangle that has been divided into unit squares.

Point to the rectangle.

[For students with a visual impairment, read "The length is five units. The width is two units."]

What is the area of this rectangle in square units?

Point to and read each answer option.

A. 3 square units

B. 10 square units

Calculator may be used on this item.

Item 3

The mean is the average of a set of data.

This list shows the number of cups of water 5 students drank.

Point to and read the list.

4, 5, 6, 7, 8

To find the mean, first add together the numbers.

Point to and read the equation.

[For all students, read "Four plus five plus six plus seven plus eight equals thirty."]

4 + 5 + 6 + 7 + 8 = 30

The total number of cups of water these students drank was 30.

The last step to find the mean is to divide the total number of cups of water by the number of students.

Point to the equation.

[For all students, read "Thirty divided by five equals six."]

30 ÷ 5 = 6

The mean number of cups of water students drank was 6.

This is a different list that shows the number of cups of juice 7 students drank.

Point to and read the list.

1, 1, 1, 2, 2, 3, 4

The total number of cups of juice these students drank was 14.

The last step to find the mean is to divide the total number of cups of juice by the number of students.

Which equation shows the last step to find the mean number of cups of juice students drank?

[For all students, read "A. Fourteen divided by two equals seven."]

A. $14 \div 2 = 7$

[For all students, read "B. Fourteen divided by seven equals two."]

B. $14 \div 7 = 2$

[For all students, read "C. Fourteen plus seven equals twenty-one."]

C. $14 + 7 = 21$

Calculator may be used on this item.

Item 4

Lee painted 4 equal-sized walls in 12 hours.

Point to the ratio.

[For all students, read "four to twelve."]

4 : 12

Lee painted each wall at the same rate.

How long did it take Lee to paint 1 wall?

Point to and read each answer option.

A.   3 hours

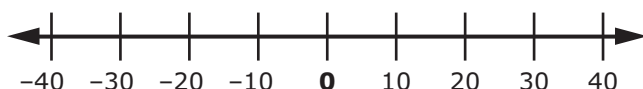B.   4 hours

C.   8 hours

Calculator may be used on this item.
Provide student with printed number line and small object.

Item 5

This number line shows positive and negative numbers.

[For all students, read "This is a number line beginning at negative forty on the left, followed by eight equally spaced marks, ending on the right at forty. The fourth mark after negative forty is labeled zero. The fourth mark after zero is labeled forty."]

−40 −30 −20 −10 **0** 10 20 30 40

The numbers to the right of 0 are positive.

Point to the numbers to the right of zero.

The numbers to the left of 0 are negative.

Point to the numbers to the left of zero.

The students in a class played a game. For incorrect answers, they lost points. Martin's final score was less than 0 points in the game.

Use the small object to show a point on the number line that could represent Martin's final score.

Point to the small object and the number line.

Allow time for the student to respond.

After student completes work: *Record on the computer if the student provided the correct answer or did not provide the correct answer.*

A. The student provided the correct answer.

B. The student did not provide the correct answer.

Score	Description
1	Student places the small object on any negative number.
0	Student does not place the small object on a negative number.

Mathematics Grade 7

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Mathematics Sample Items Reference Sheets

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Grade 7

Reference Sheet: Formula 2 (Item 4)

Printed bar graph and tiles found in Mathematics Constructed-Response Cutouts section (Item 5)

TA may print additional reference sheets, as needed.

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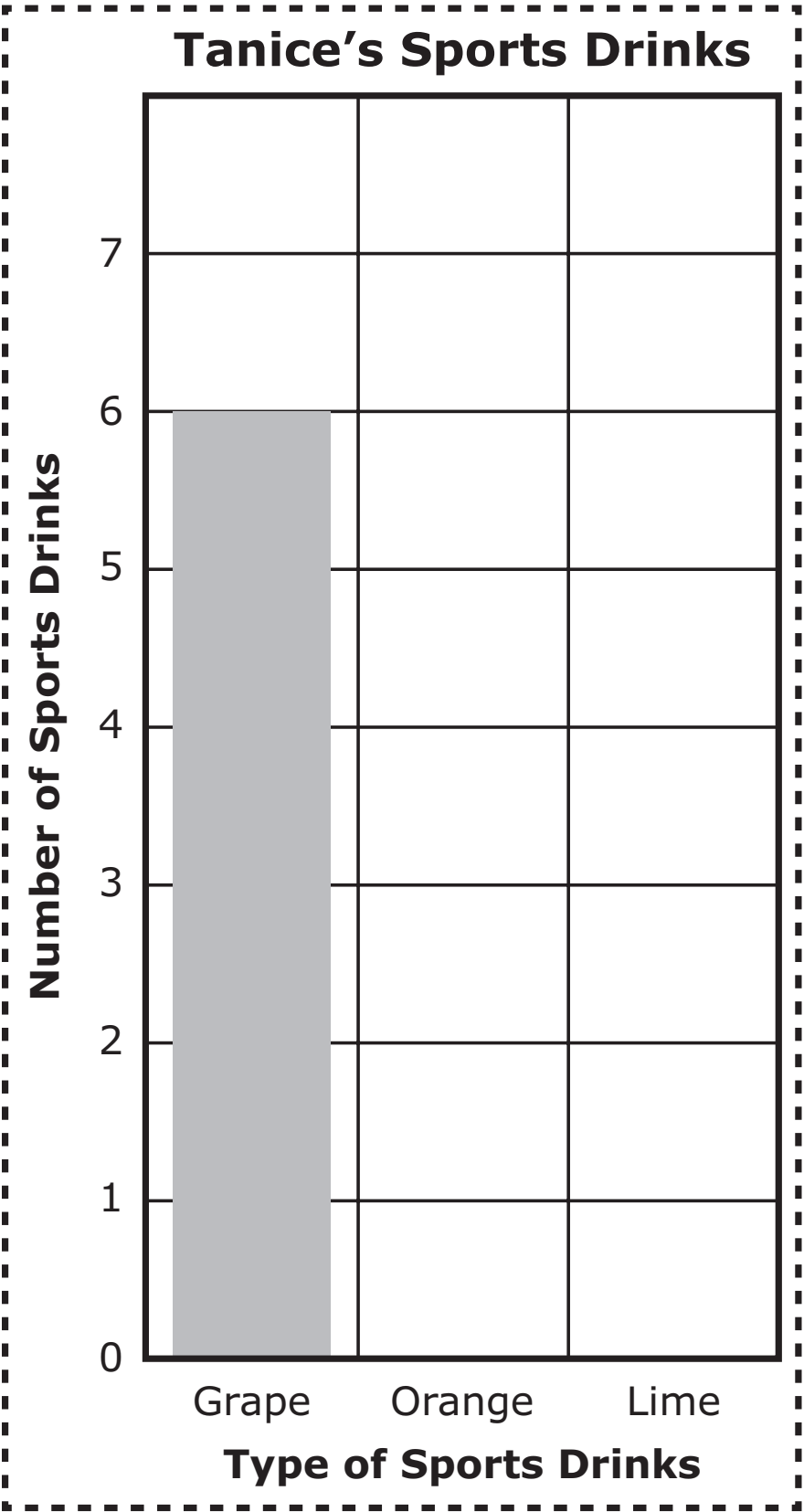$$\text{Area} = \pi \times r \times r$$

Formula 2

Mathematics Sample Items
Constructed-Response Cutouts

TA may print additional CR cutouts, as needed.

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Please print this page prior to test administration for student completion of constructed-response item.

Tanice's Sports Drinks

Number of Sports Drinks

7

6

5

4

3

2

1

0

Grape   Orange   Lime

Type of Sports Drinks

Mathematics
Beginning Grade 7

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Calculator may be used on this item.

Item 1

This tally chart shows the number of coins Charlie had in his pocket.

Point to the tally chart.

[For all students, read "The title of the tally chart is 'Coins in Charlie's Pocket.' The tally chart has two columns and two rows. The first column is labeled 'Coin.' The second column is labeled 'Number of coins.' First row, Nickel, four coins. Second row, Penny, seven coins."]

Coins in Charlie's Pocket

Coin	Number of coins
Nickel	||||
Penny	⊮⊬ ||

Which coin did Charlie have more of?

Point to and read each answer option.

A. nickel

B. penny

Calculator may be used on this item.

Item 2

When a negative number is multiplied by a negative number, the answer is always a positive number.

Point to the equation.

[For all students, read "A negative number times a negative number equals a positive number."]

$$(-) \times (-) = (+)$$

This is a multiplication problem.

Point to the multiplication problem.

[For all students, read "Negative three times negative seven equals blank."]

$$(-3) \times (-7) = (\_\_)$$

Start by multiplying 3 by 7 to solve this problem. The answer is 21. Then look at the symbols before the numbers 3 and 7. The answer is positive since both numbers have negative symbols.

Point to the multiplication problem.

[For all students, read "Negative three times negative seven equals positive 21."]

$$(-3) \times (-7) = (+21)$$

This is a different multiplication problem.

Point to the multiplication problem.

[For all students, read "Negative nine times negative four equals blank."]

$$(-9) \times (-4) = (\_\_)$$

What does

$$(-9) \times (-4)$$

equal?

A. -36

B. -13

C. $+36$

Calculator may be used on this item.

Item 3

A variable is a letter or symbol that stands for an unknown quantity.

Andy had 45 books. He had 30 novels. The rest of the books were comic books.

This equation can be used to figure out how many comic books Andy had.

Point to the equation.

[For all students, read "Thirty equals forty-five minus c."]

$$30 = 45 - c$$

The variable **c** in this equation stands for the number of comic books Andy had.

Point to the letter c in the equation.

How many comic books did Andy have?

Point to and read each answer option.

A.   15 comic books

B.   30 comic books

C.   75 comic books

Calculator may be used on this item.
Please hand student Grade 7 Math Reference Sheet. Use Formula 2.

Item 4

This is the formula for finding the area of a circle.

Point to the formula.

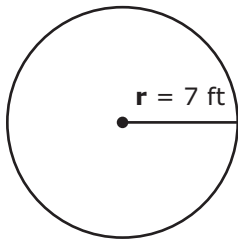*[For all students, read "Area equals pi times r times r."]*

Area = π × r × r

The variable **r** in this formula stands for the radius.

Point to the letter r in the formula.

This circle has a radius of 7 feet.

Point to the circle.

r = 7 ft

What is the area of this circle in square feet?

Point to and read each answer option.

[For all students, read "A. seven pi square feet."]

A. 7π square feet

[For all students, read "B. fourteen pi square feet."]

B. 14π square feet

[For all students, read "C. forty-nine pi square feet."]

C. 49π square feet

Calculator may be used on this item.
Provide student with printed bar graph and tiles.

Item 5

This data table shows the numbers of different types of sports drinks in Tanice's refrigerator.

Point to the data table.

[For all students, read "The title of the table is Tanice's Sports Drinks. The table has two columns and three rows. The first column is labeled Type of sports drink. The second column is labeled Number of sports drinks. First row, Grape, six sports drinks; second row, Orange, two sports drinks; third row, Lime, five sports drinks."]
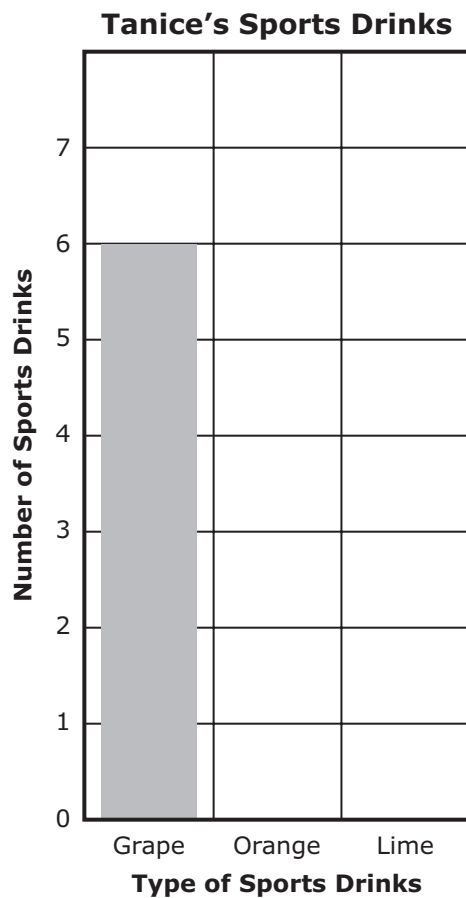
Tanice's Sports Drinks

Type of sports drink	Number of sports drinks
Grape	6
Orange	2
Lime	5

This incomplete bar graph can be used to show the same information as the data table.

Place the bar graph and tiles on the work surface in front of the student.

Point to the title and labels on the bar graph.

[For all students, read "The title of the incomplete bar graph is Tanice's Sports Drinks. The x-axis label is Type of Sports Drinks, and it shows three types of juice labeled Grape, Orange, and Lime. The y-axis label is Number of Sports Drinks. First bar, Grape, six. The second and third bars have not yet been completed."]

Tanice's Sports Drinks

The data table and bar graph show that Tanice had 6 grape sports drinks.

Point to the Grape row in the data table. Then point to the Grape column in the bar graph.

The data table shows that Tanice had 2 orange sports drinks.

Point to the Orange row in the data table.

Two tiles need to be moved into the column labeled "Orange" in the bar graph.

Move two tiles into the Orange column in the bar graph.

Now use the tiles to show how many lime sports drinks Tanice had. You may not need all of the tiles.

Point to the tiles.

Allow time for the student to respond.

After the student completes the work: *record on the computer if the student provided the correct answer or the student did not provide the correct answer.*

A. The student provided the correct answer.

B. The student did not provide the correct answer.

Score	Description
1	Student correctly places exactly five tiles in the Lime column of the bar graph.
0	Student does not correctly place exactly five tiles in the Lime column of the bar graph.

Sample Response

Tanice's Sports Drinks