

# MEA 2007–2008

## Mathematics Grade 3

The table below shows the entire MEA mathematics test design. Scores are based on common items only, half of which are released and can be found in this document.

### Test Design

CONTENT AREA	COMMON			EMBEDDED FIELD TEST			TOTAL ITEMS PER STUDENT			BASE TESTING TIME	POINTS
	MC	CR	SA	MC	CR	SA	MC	CR	SA		
MATHEMATICS	32	1	6	8	1	2	40	2	8	105 MIN.	48

Each item on the MEA measures a grade level expectation based on Maine’s 1997 *Learning Results*. Score points for items are accumulated and reported in clusters. Each content standard is included in a cluster as indicated below.

#### Mathematics Clusters

##### 1. Numbers and Operations

- Numbers and Number Sense (A)
- Computation (B)
- Discrete Mathematics (I)

##### 2. Shape and Size

- Geometry (E)
- Measurement (F)

##### 3. Mathematical Decision Making

- Data Analysis and Statistics (C)
- Probability (D)

##### 4. Patterns

- Patterns, Relations, and Functions (G)
- Algebra Concepts (H)
- Mathematical Communication (K)

### Item Information Chart

Please refer to the item information chart on the next page for in-depth information on each mathematics released item. The released item numbers in the chart correspond to item numbers in the practice test and on the MEA Class Analysis Report.

### Short-Answer and Constructed-Response Scoring Guides

A short-answer or constructed-response scoring guide includes score point descriptions used to determine the score. Training notes that follow the scoring guide provide in-depth descriptions or particular information also used to determine the score. At least one sample student response is provided for each score point with annotations that explain the reasoning behind the assigned score.

### Student Work

Student work samples to supplement these scoring guides are found in the file labeled “Student Work.”

## Grade 3 Mathematics Released Item Information

Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Practice Test Page Number	2	2	2	3	3	3	3	4	4	4	5	5	5	6	7	8	10	10	11	12
Calculator	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y
Grade Level Expectation (GLE)	B1	E1	F2	H2	F1	A2	B4	G1	G2	I1	A2	B4	E2	F1	A3	K1	C2	I1	C2	E1
Cluster	1	2	2	4	2	1	1	4	4	1	1	1	2	2	1	4	3	1	3	2
Item Type	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	SA	CR	MC	MC	SA	SA
Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	4	1	1	2	2
Answer Key	A	B	B	A	B	D	B	B	D	D	A	B	C	A			A	C		
% Who Chose A or Earned 1 Point	54	11	6	63	7	10	2	26	36	23	37	26	4	74	37	9	79	1	30	18
% Who Chose B or Earned 2 Points	26	83	93	26	43	5	95	51	6	9	13	64	10	12	39	14	7	59	49	27
% Who Chose C or Earned 3 Points	5	1	1	3	45	16	1	14	7	9	20	5	76	2		23	11	36		
% Who Chose D or Earned 4 Points	14	4	1	6	4	69	1	8	49	59	30	4	9	11		47	2	3		
Statewide Average Student Score															1.14	2.96			1.28	0.71

**Calculator:** This row indicates whether use of a calculator is allowed for this item.

**Grade Level Expectation (GLE):** See “State of Maine 2007 Grade Level Expectations for Grades 3–8” available at the Maine Department of Education’s Web site at <http://www.maine.gov/education/lsait/gltes.htm>.

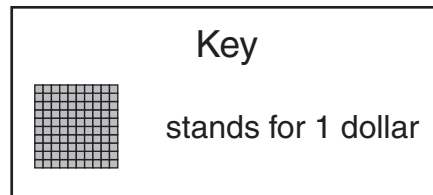
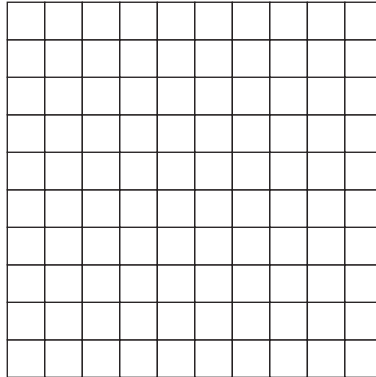
**Cluster:** A group of content standards. (See previous page for groups.)

**Item Type:** MC = multiple-choice, SA = short-answer, CR = constructed-response

**Answer Key:** the letter of the correct answer choice

### Short-Answer Item 15

- 15 a. Nicole has 1 quarter and 1 dime in her pocket. Shade the grid below to show how much money she has in her pocket.



- b. What is the total value of the money in Nicole's pocket? Be sure to use a dollar sign (\$) and a decimal point (.) to write your answer.

## Scoring Guide for Short-Answer Item 15

Score	Description
2	Student has a correct answer in part a and part b, <b>\$0.35</b> .
1	Student has a correct answer in part a only. OR Student has a correct answer in part b only. OR Student has a correct answer in part b based on an incorrect answer in part a.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

## Constructed-Response Item 16

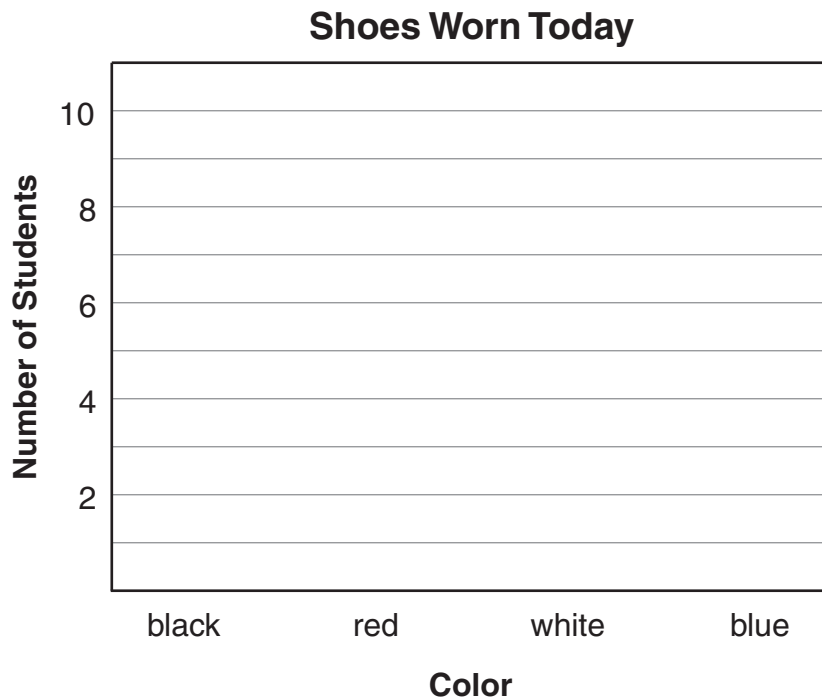
16 Mrs. Wilson asked her students what color shoes they are wearing today. This is what the students answered:

- 5 students had black shoes
- 3 students had red shoes
- 8 students had white shoes
- the rest of the students had blue shoes

There are 18 students in Mrs. Wilson's class.

a. How many students answered "blue shoes"? Show or explain how you found your answer.

b. Complete the bar graph below to show how many students are wearing each color of shoe.



## Scoring Guide for Constructed-Response Item 16

Score	Description
4	4 points
3	3 points
2	2 points
1	1 points
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
<b>Blank</b>	No response.

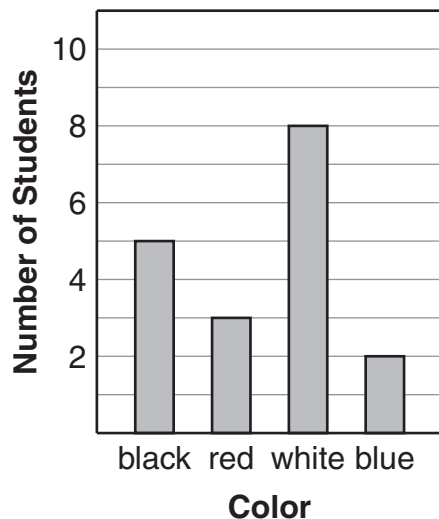
### Training Notes for Constructed-Response Item 16

- Part a: 2 points     correct answer, **2**, with work shown or explanation  
 OR  
 1 point             correct answer, **2**, without work shown or explanation  
 or  
 correct strategy with computational error
- Part b: 2 points     correctly completes bar graph with correct bars  
 or  
 correctly completes bar graph based on incorrect answer in part a  
 OR  
 1 point             correctly completes 3 out of 4 bars

**Sample Response:**

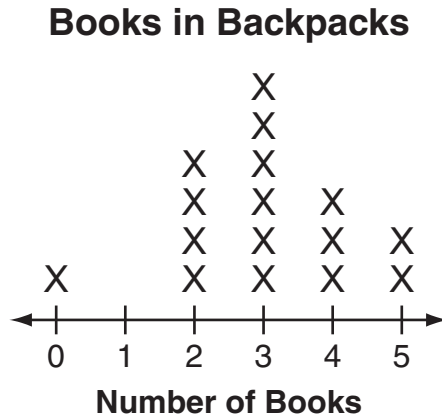
Part a:  $2, 5 + 3 + 8 = 16, 18 - 16 = 2$   
 $5 + 3 + 8 + 2 = 18$

Part b:             **Shoes Worn Today**



### Short-Answer Item 19

19 The line plot below shows the number of books some students have in their backpack.



Key

X stands for 1 student

a. How many students have exactly 2 books in their backpack?

a.

b. What is the **most common** number of books these students have in their backpacks?

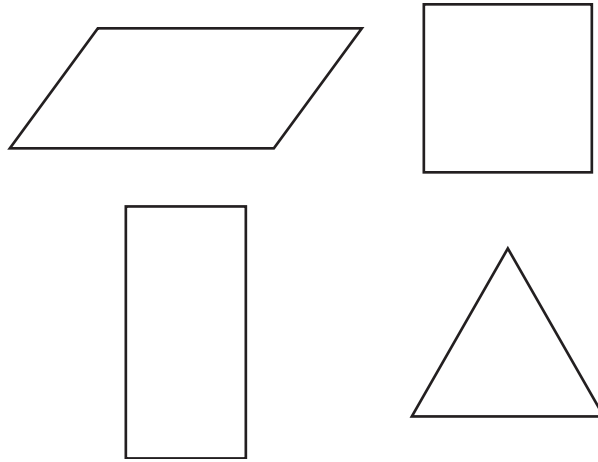
b.

## Scoring Guide for Short-Answer Item 19

Score	Description
2	Student has a correct answer in part a, 4, and in part b, 3.
1	Student has a correct answer in part a only. OR Student has a correct answer in part b only.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

## Short-Answer Item 20

20 Ralph drew the shapes below. Put an **X** on all the rectangles Ralph drew.



### Scoring Guide for Short-Answer Item 20

Score	Description
2	Student identifies 2 correct shapes with no incorrect shapes.
1	Student identifies 1 correct shape with no incorrect shapes.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.