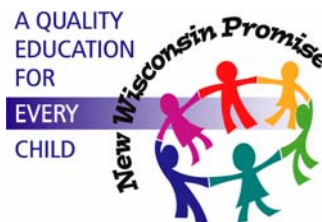


Guide to Grade 4

Released Item Books
In **READING** and **MATHEMATICS**



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Guide to Grade 4 Released Item Books in Reading and Mathematics

This document contains information for using, scoring, and interpreting the released items in reading and mathematics.

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Guide to Released Item Books

Please help us improve this document. We welcome your comments and questions.
Please contact us at:

Wisconsin Department of Public Instruction
Office of Educational Accountability
125 S. Webster Street, P.O. Box 7841
Madison, WI 53707-7841

Toll-free: (800) 441-4563
Fax: (608) 266-8770

<http://www.dpi.wi.gov/oea/>

Introduction

What are released items?

The items in the Reading and Mathematics released item books are actual items from the fall 2005 state assessment, the Wisconsin Knowledge and Concepts Examinations—Criterion-Referenced Test (WKCE-CRT). These items will not be used again on the state assessment and may, therefore, be used in Wisconsin for professional development, improving instruction, and student practice. The items in the released item books illustrate the formats and kinds of items that students will encounter on the WKCE-CRT.

How do I use the released item books and this guide?

Professional Development

Released items are useful as educators engage in conversations about what students are expected to know and be able to do to demonstrate proficiency on the state assessments relative to the state model academic standards. Released items can inform discussions about state and local standards, curriculum, instruction, and assessment.

This guide provides instructions for administering the released item books as practice tests and information for scoring the items, including scoring guides and anchor papers for the constructed-response items. The item information tables identify the answer key, what each item measures, depth of knowledge, and item difficulty. Item difficulty is presented as both the percentage of students who answered the item correctly and the scale score location of the item. The item's scale score location describes where the item functions along the ability scale. Items with higher scale score locations are considered more difficult than items with lower scale score locations. Students with scale scores above the scale score location of the item would have a greater probability of answering the item correctly than students with scale scores below the item's scale score location.

Improving Instruction

Teachers may use released items in classroom activities that help students understand how to:

- solve problems
- determine which answer choices are correct, which are incorrect, and why
- respond to constructed response items with complete, thoughtful answers
- approach long and/or multi-step tasks
- use good test-taking strategies.

Student Practice

Students may perform better and with less anxiety if they are familiar with the format of the test and with the types of items they will be required to answer. Note that a student's score on the practice test cannot be converted to a total scale score, used to predict performance on the operational WKCE-CRT, or used to make inferences about the student's learning.

Reading

Sample Directions for Administering the Reading Test

Make sure each student has his or her own test book, a No. 2 pencil, an extra eraser, and scratch paper. Students' test books should be closed.

SAY In this test, you will read some passages and answer both multiple-choice questions and short-answer questions about those passages. Multiple-choice questions are questions that ask you to choose the best answer. Remember, for the multiple-choice questions, you must fill in the circle completely and make your mark heavy and dark. If you want to change an answer, completely erase the mark you made before making a new mark. You must fill in only one circle for each multiple-choice question.

Short-answer questions are questions that ask you to write your answer instead of filling in a circle. Write your answer on the lines in your test book. You may also write in the space under the lines, but your answer must stay inside the boxed area. Answers or parts of answers written outside the boxed area will not be scored. You may use scratch paper to help you plan your answer, but remember to write your answer in the boxed area in your test book. After you have written your answer, be sure to read it to make sure you have written your ideas clearly and completely.

For both the multiple-choice questions and the short-answer questions, remember to look back at the reading passages to help you answer the questions. For some questions, you may need to go back to two reading passages to find the answer. Be sure to look back at both reading passages to help you answer these questions.

You will have 40 minutes to do the test. Work until you come to the word "STOP" at the bottom of the page. You may go back and check your answers. When you have finished, sit quietly until everyone else has finished.

Are there any questions?

When you are sure that all students understand the directions, continue.

SAY Please open your test book to Page 2.

Demonstrate. Check to be sure that all students are in the correct place in their test books.

SAY You may begin.

Record the starting and stopping times.

Record the Starting Time:	Add 40 Minutes:	Record the Stopping Time:
_____	+ 40	_____

Check to be sure that students are marking their answers in the appropriate places in their test books.

At the stopping time,

SAY **Stop. This is the end of the test. Please close your test book.**

Collect all test materials. Use the information on the following pages to score the multiple-choice and constructed-response items.

Reading Item Information

Item	Answer Key	Objective/ Subskill	Depth of Knowledge Level	2005–06 Item Statistics					Scale Score Location
				SR: Percent of Students who Chose A, B, C, or D (*Indicates Correct Response).					
				BCR: Percent of Students who Received 0, 1, 2, or 3 Points					
Format	A or 0	B or 1	C or 2	D or 3					
1	C	3.1	3	SR	4%	3%	*87%	6%	425
2	D	3.1	2	SR	34%	14%	11%	*40%	510
3	C	1.1	2	SR	12%	13%	*69%	5%	460
4	C	3.3	3	SR	3%	5%	*71%	20%	449
5	C	2.3	2	SR	12%	29%	*43%	14%	497
6	A	2.1	2	SR	*71%	7%	7%	14%	454
7	A	2.1	2	SR	*70%	13%	3%	13%	452
8	B	2.1	2	SR	7%	*83%	5%	3%	435
9	D	3.1	2	SR	4%	7%	3%	*85%	431
10	A	4.1	4	SR	*86%	3%	5%	5%	424
11		4.1	4	BCR	17%	53%	24%	4%	*
12	D	2.3	2	SR	12%	5%	18%	*64%	454
13	B	3.2	3	SR	30%	*54%	11%	3%	474
14	C	4.3	3	SR	4%	24%	*61%	9%	463
15	B	1.2	3	SR	9%	*44%	36%	9%	489
16	A	1.1	2	SR	*77%	14%	3%	4%	443
17	B	1.2	2	SR	7%	*83%	3%	5%	429
18	C	3.2	2	SR	10%	17%	*61%	10%	471
19	B	2.2	2	SR	12%	*73%	6%	6%	449
20	D	2.2	2	SR	14%	11%	12%	*61%	467
21	B	3.3	3	SR	7%	*66%	17%	8%	463

*Scale score location not available.

Objective/Subskill and Depth of Knowledge Level information follows this table.

SR: selected response; BCR: brief constructed response.

Performance Category Scale Score Range

Minimal Performance	Basic	Proficient	Advanced
395 and below	396–439	440–488	489 and above

Reading Objectives and Subskills

Types of Text

The grade 4 reading assessment presents a variety of grade-appropriate reading passages representing literary, informational, and everyday text. Passages may be up to 1,200 words long and some passages may be paired with other, related passages. Students may be asked to read and answer questions about texts such as these:

<u>Literary</u>	<u>Informational</u>	<u>Everyday</u>
Realistic fiction, animal stories, poetry, drama, folktales, fables, biography	Nonfiction trade book excerpts, magazine articles	Charts, schedules, menus, tickets, product labels, safety notices, school-related texts, simple instructions

Objectives, Subskills, and Descriptors

Objectives (labeled 1, 2, 3, and 4) and subskills (labeled 1.1, 1.2, etc.) denote general knowledge and skills that are assessed and reported on the WKCE-CRT. Bulleted descriptors are *examples* of specific knowledge or skills that may be included within each subskill. The subskills include knowledge and skills *such as, but not limited to* the descriptors.

1. Determine the meaning of words and phrases in context.

1.1. Use context clues to determine the meaning of words and phrases.

- Categorize words to demonstrate understanding of word meaning.
- Use context clues to determine the meaning of unfamiliar words.
- Understand the meaning of words and phrases used figuratively.
- Use context clues to determine the meaning of multiple-meaning words.
- Use knowledge of synonyms and antonyms to determine the meaning of words.
- Identify analogies to demonstrate understanding of word meaning.

1.2. Use knowledge of word structure to determine the meaning of words and phrases.

- Recognize regular and irregular plural forms.
- Recognize possessive forms.
- Identify the meaning of contractions.
- Use knowledge of compound words to determine the meaning of a word.
- Identify how adding an affix changes the meaning of a word.
- Identify the meaning of a word with an affix.
- Use knowledge of root words to determine the meaning of a word.

1.3. Use word reference materials to determine the meaning of words and phrases.

- Identify and use parts of a book related to word meaning.
- Use primary dictionary guide words to locate definitions.
- Use an entry from a word reference to determine word meaning and pronunciation.

2. Understand text.

2.1. Demonstrate understanding of literal meaning by identifying stated information in literary text.

- Identify stated information about story elements.

2.2. Demonstrate understanding of literal meaning by identifying stated information in informational text.

- Determine where information can be found in a text.
- Identify stated information about main ideas and supporting details.
- Identify stated information provided through text features.

2.3. Demonstrate understanding of explicitly stated sequence of events in literary and informational text.

- Identify first, next, and last events.
- Follow steps in a process.

3. Analyze text.

3.1. Analyze literary text.

- Make inferences about story elements.
- Summarize important ideas and events.
- Analyze stated or implied theme, message, or main idea.
- Draw conclusions.
- Identify purpose.

3.2. Analyze informational text.

- Identify implied main ideas and supporting details.
- Identify implied relationships (such as cause/effect and compare/contrast).
- Summarize information.
- Identify purpose.
- Make inferences based on text features.
- Make inferences based on visual information.
- Make inferences about text structure.
- Identify pros and cons.

3.3. Analyze author's use of language in literary and informational text.

- Analyze the use of literary devices.
- Recognize and distinguish among genres.

4. Evaluate and extend text.

4.1. Evaluate and extend literary text.

- Extend themes and concepts to other situations.
- Make connections to text.
- Make predictions.
- Identify and evaluate the author's purpose, point of view, and effectiveness.

4.2. Evaluate and extend informational text.

- Extend ideas and concepts to other situations.
- Evaluate comparisons and contrasts.
- Make connections to text.
- Make predictions.
- Identify and evaluate the author's purpose, point of view, and effectiveness.
- Distinguish between facts and opinions.
- Evaluate the accuracy, currency, and credibility of information.

4.3. Evaluate and extend the author's use of language in literary and informational text.

- Evaluate the author's word choice and use of language.

Reading Depth of Knowledge

These depth of knowledge levels are intended to reflect the level of cognitive demand placed on students by test items. As the level of cognitive demand increases, so does the mental effort and integration of information required to answer a test item successfully. Each level represents important cognitive skills, and each level requires the use of cognitive skills in lower levels. For example, a student who is asked to make connections between two texts (level 4) would also need to recall pertinent details from the texts (level 1), understand stated information in the texts (level 2), and make inferences and draw conclusions about each text (level 3). The levels assume grade-appropriate text, vocabulary, and tasks. Test items should represent a range of depth of knowledge levels, and items within each level may represent a range of difficulty as indicated by percentage of students who answered the item correctly or scale score location.

Level 1: Recognizing and Recalling

Students demonstrate a grade-appropriate ability to recognize or recall basic facts, terms, or definitions. For example, a student might be asked to identify an explicitly stated main idea in a text.

Level 2: Using Fundamental Concepts and Procedures

Students demonstrate a grade-appropriate ability to use basic facts, definitions, skills, or concepts. For example, a student might be asked to use information in a text to complete a graphic organizer.

Level 3: Concluding and Explaining

Students demonstrate understanding of grade-appropriate text by using stated and implied information and text elements to draw conclusions. Students explain and convey ideas effectively. For example, a student might be asked to provide details and examples from a text to support a conclusion.

Level 4: Evaluating, Extending, and Making Connections

Students demonstrate their knowledge of concepts when evaluating or interpreting grade-level text. Students make connections among texts, common experiences, and issues. For example, a student might be asked to evaluate an author's effectiveness in achieving an intended purpose.

Reading Rubric for Constructed-Response Items

3 points

- The response demonstrates *thorough understanding* of the reading concept embodied in the task.
- The response is *accurate, complete, insightful, and fulfills all the requirements* of the task.
- Necessary support and/or examples are included.
- Information is clearly *text-based*.

2 points

- The response demonstrates *partial understanding* of the reading concept embodied in the task.
- The response is *accurate and fulfills most of the requirements* of the task.
- Necessary support and/or examples may not be complete or clearly *text-based*.

1 point

- The response demonstrates *an incomplete understanding* of the reading concept embodied in the task.
- The response provides *some information that is text-based*, but does not fulfill the requirements of the task.
- Information provided is *too general* or *too simplistic*.
- Necessary support and/or examples may be incomplete or omitted.

0 points

- The response demonstrates *no understanding* of the reading concept embodied in the task.
- The response is *inaccurate, confused, or irrelevant*.
- The student has *failed to respond to the task*.

Reading Constructed-Response Item Scoring Guide

Forms: Public Release	Item #: 11	Item Type: BCR	TB Page #: 6	AB Page #: n/a
Reporting Category: Reading				Max Score Pts: 3
Objective: 4. Evaluates Text				
Subskill: 4.1. Evaluates and extends literary text				
Descriptor: Makes predictions. (i.e., if the story/text were continued.)				

Item Stem

What do you think would have happened if the brothers had been given another chance and had not been turned into stone? Use details and examples from the passage to carefully support your answer. Write your explanation on the lines below.

Responses should be evaluated according to the guidelines outlined below for each score point.

3 points

- The response demonstrates a **thorough understanding** of the reading concept embodied in the task by using strong text-based information to predict how the brothers would have behaved if they had been given another chance to get along.
- The response presents a **complete and accurate text-based** prediction. The response may offer a positive or negative prediction as long as it is **carefully explained** and supported.
- The response is **well-supported with details** from the passage. **For example:** The brothers would probably keep fighting as they had always done. It didn't seem to matter to them that their father had warned them they would be turned into stone if they fought again. They were too emotional and quick to blame each other. **OR** If they were given another chance, they might be able to avoid fighting again. Matfao realized that fighting was wrong before the end of the story, but it was too late. He seems calmer than his brother. Maybe he would be able to convince his brother that fighting was wrong.

2 points

- The response demonstrates **partial understanding** of the story and the concept of using text-based information to predict by referring to the brothers' past behavior to predict what they would have done if they had been given another chance.
- The response uses **accurate** details or conclusions to predict but it is **not as complete or as carefully explained** as a 3 point response.
- The response provides information that is **generally text-based** but **fails to include enough specific detail** to support the prediction. **For example:** The brothers would keep on fighting because that is all they had ever done.

1 point

- The response **demonstrates incomplete understanding** of the story and the concept of using text-based information to predict.
- The response makes a prediction based on relevant details or ideas in the passage but **fails to provide an explanation**.
- The student's prediction is too **general, vague or simplistic** to fulfill the requirements of the task. **For example:** The brothers would probably keep on fighting.

Anchor Papers for Reading Constructed-Response Items

What do you think would have happened if the brothers had been given another chance and had not been turned into stone? Use details and examples from the passage to carefully support your answer. Write your answer on the lines below.

I think they would just fight again because they will never get along. They never can agree on anything at all. When ever something bad happens they blame it on each other because they think the other person did it.

Score Point 3

- >Response demonstrates a thorough understanding with a complete and accurate text-based prediction about how the brothers would have behaved.
- >Response is well-supported with details from the passage such as, "they can never agree on anything" and "When ever something bad happens they blame it on each other".

What do you think would have happened if the brothers had been given another chance and had not been turned into stone? Use details and examples from the passage to carefully support your answer. Write your answer on the lines below.

I think thay might fight again
, and thay will get turned in
to stone because most likely thay
were fiting al thar life and they
will probibly fite agen.

Score Point 2

- >Response demonstrates a partial understanding using text-based information to predict the brother's behavior based on their past behavior.
- >Response is accurate but not as complete as a 3 point response. For example: "...they might fight again...because...they were fighting all their life...".

What do you think would have happened if the brothers had been given another chance and had not been turned into stone? Use details and examples from the passage to carefully support your answer. Write your answer on the lines below.

I think that if they were not turned to stone they would still be fighting.

Score Point 1

- >Response demonstrates incomplete understanding of the story and the concept of using text-based information to predict.
- >Prediction is too general and simplistic with no explanation. For example: "...they would still be fighting."

What do you think would have happened if the brothers had been given another chance and had not been turned into stone? Use details and examples from the passage to carefully support your answer. Write your answer on the lines below.

They woudt live longer and
soon die

Score Point 0

- >Response demonstrates no understanding of the task.
- >Response is irrelevant.

Mathematics

Sample Directions for Administering the Mathematics Test

Make sure each student has his or her own test book, a No. 2 pencil, an extra eraser, scratch paper, and the following manipulative:

- Ruler

NOTE: The use of calculators in Mathematics, Session 1 is not allowed for any student, as those sections of the test measure computation skills. Only students whose IEP or Section 504 plan allows for the accommodation of calculator usage may use a calculator for other sessions of the Mathematics test. The accommodated students must be tested in a separate room so as not to give the appearance of having an advantage.

Also required for the operational test, but not for this released item book:

- Pattern blocks, 1 set
- L-shaped Pentomino, 1

Students' test books should be closed.

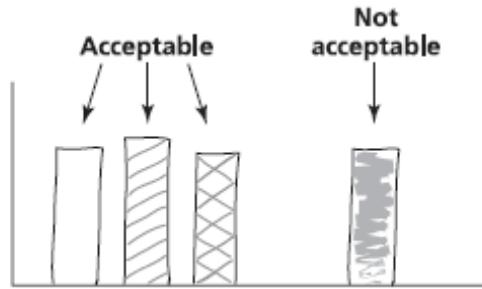
SAY Remember to use only a No. 2 pencil in this test. In Session 1, you will be answering multiple-choice questions and short answer questions. Multiple-choice questions are questions that ask you to choose the best answer. For the multiple-choice questions, you must fill in the circle completely and make your mark heavy and dark. If you want to change an answer, completely erase the mark you made before making a new mark. You must fill in only one circle for each multiple-choice question.

You may use scratch paper to work the multiple-choice questions, but remember to fill in the circle that goes with the answer you choose.

Short-answer questions are questions that ask you to write your answer instead of filling in a circle. Each short-answer question has a Step A and a Step B. Write your answers within the boxed area only, on the lines and/or in the space provided. Be sure to answer the question completely to show you clearly understand the question. Do not write outside the boxed area. The boxed area is your answer space. Only what you write in the answer space will be scored. You do not need to use the entire answer space.

For the short-answer questions, if you are asked to complete or draw a chart or figure, please do not use shading in your answer. If you need to erase, make sure you erase completely.

Demonstrate by drawing the illustration below on the board.



Now you will do **Session 1** of the **Mathematics** test. Remember to read all of the directions and information in the test book. When you come to the word “STOP” at the bottom of the page, you have finished **Session 1**. You may go back and check your answers, but do not go on to **Session 2** of the **Mathematics** test. When you have finished, sit quietly until everyone else has finished.

You will have **10 minutes** to do **Session 1**. Make sure you stop at the end of **Session 1**.

Are there any questions?

When you are sure that all students understand the directions, continue.

SAY Please open your test book to **Page 2**.

Demonstrate. Check to be sure that all students are in the correct place in their test books.

SAY You may begin.

Record the starting and stopping times for Session 1.

Record the Starting Time:	Add 10 Minutes:	Record the Stopping Time:
_____	+ 10	_____

Check to be sure that students are marking and writing their answers in the appropriate places in their test books.

At the stopping time,

SAY Stop. Put down your pencil and close your test book. This is the end of **Session 1**.

Pause to be sure that all students have closed their test books.

SAY Now, open your test book to the page labeled “Mathematics Session 2.”

In Session 2, you will be answering multiple-choice questions and short-answer questions. Multiple-choice questions are questions that ask you to choose the best answer. Remember, for the multiple-choice questions, you must fill in the circle completely and make your mark heavy and dark. If you want to change an answer, completely erase the mark you made before making a new mark. You must fill in only one circle for each multiple-choice question.

Short-answer questions are questions that ask you to write your answer instead of filling in a circle. Each short-answer question has a Step A and a Step B. Write your answers within the boxed area only, on the lines and/or in the space provided. Be sure to answer the question completely to show you clearly understand the question. Do not write outside the boxed area. The boxed area is your answer space. Only what you write in the answer space will be scored. You do not need to use the entire answer space.

Remember, for the short-answer questions, if you are asked to complete or draw a chart or figure, please do not use shading in your answer. If you need to erase, make sure you erase completely.

You will have 25 minutes to do Session 2. Remember to read all of the directions and information in this part of the test book. When you come to the word “STOP” at the bottom of the page, you have finished Session 2.

You may go back over Session 2 to check your answers, but do not go back to Session 1. When you have finished, sit quietly until everyone else has finished.

Are there any questions?

When you are sure that all students understand the directions, continue.

SAY You may begin.

Record the starting and stopping times for Session 2.

Record the Starting Time:	Add 25 Minutes:	Record the Stopping Time:
_____	+ 25	_____

SAY Stop. This is the end of Session 2. Please close your test book.

Collect all test materials. Use the information on the following pages to score the multiple-choice and constructed-response items.

Mathematics Item Information

Item	Answer Key	Calculator Allowed	Objective/Subskill	Depth of Knowledge Level	2005–06 Item Statistics					Scale Score Location
					SR: Percent of Students who Chose A, B, C, or D (*Indicates Correct Response). BCR: Percent of Students who Received 0, 1, or 2 Points					
					Format	A or 0	B or 1	C or 2	D	
1	A	No	Bb	2	SR	*87%	7%	3%	3%	392
2	B	No	Bb	2	SR	8%	*61%	10%	15%	452
3		No	Bb	3	A-BCR	41%	58%			451
3		No	Ae	3	B-BCR	12%	47%	39%		433
4	D	No	Fa	3	SR	19%	11%	14%	*54%	497
5	C	No	Fb	2	SR	13%	7%	*71%	8%	443
6	D	No ¹	Fa	1	SR	5%	5%	3%	*87%	420
7	C	No ¹	Ba	2	SR	8%	2%	*64%	25%	462
8	A	No ¹	Ba	2	SR	*93%	1%	2%	3%	393
9	C	No ¹	Da	2	SR	13%	12%	*64%	9%	460
10	B	No ¹	Db	2	SR	12%	*82%	4%	1%	411
11	C	No ¹	Cb	3	SR	4%	4%	*89%	2%	342
12		No ¹	Db	3	A-BCR	48%	47%			470
12		No ¹	Ad	3	B-BCR	42%	29%	26%		484
13	A	No ¹	Cb	2	SR	*65%	19%	10%	5%	457
14	B	No ¹	Ea	2	SR	6%	*78%	5%	9%	427
15	A	No ¹	Cc	2	SR	*96%	1%	1%	0%	351
16	B	No ¹	Eb	3	SR	14%	*65%	12%	8%	463
17	D	No ¹	Eb	3	SR	2%	6%	20%	*70%	488
18	B	No ¹	Db	2	SR	2%	*85%	5%	7%	394
19	D	No ¹	Ea	2	SR	12%	2%	4%	*81%	424

¹Only students whose IEP or Section 504 plan allows for the accommodation of calculator usage may use a calculator for this question.

Objective/Subskill and Depth of Knowledge Level information follows this table. SR: selected response; A-BCR: brief constructed response, part A; B-BCR: brief constructed response, part B.

Performance Category Scale Score Range

Minimal Performance	Basic	Proficient	Advanced
420 and below	421–437	438–483	484 and above

Mathematics Objectives and Subskills

Beginning of Grade 4

How to use the Framework

The mathematics assessment framework is an indication of the knowledge and skills that will be assessed on the November WKCE-CRT. *This information does not replace your local curriculum.* However, you may wish to ensure that your local curriculum includes the knowledge and skills described in the framework.

This section of the framework describes the types of content that students may encounter on the WKCE-CRT

The knowledge and skills to be assessed are organized into objectives, subskills, and descriptors as shown below. WKCE-CRT results will be reported by objectives and subskill.

- A. **Objective:** A group of cognitively related skills.
 - A.a. **Subskill:** A group of related knowledge and skills that *may include, but is not limited to*, the descriptors which follow.
 - **Descriptor:** an example of a specific knowledge or skill that may be assessed.

Objectives, Subskills, and Descriptors

Objective	Mathematical Processes
------------------	-------------------------------

A:

Students will effectively use mathematical knowledge, skills, and strategies related to reasoning, communication, connections, representation, and problem solving.

Descriptors, such as but not limited to

- Use reasoning and logic to:
 - Perceive patterns
 - Identify relationships
 - Formulate questions
 - Pose problems
 - Make conjectures
 - Justify strategies
 - Test reasonableness of results
- Communicate mathematical ideas and reasoning using the vocabulary of mathematics in a variety of ways e.g., using words, numbers, symbols, pictures, charts, tables, diagrams, graphs, and models.
- Connect mathematics to the real world, as well as within mathematics.
- Create and use representations to organize, record, and communicate mathematical ideas.
- Solve and analyze routine and non-routine problems.

Objective	Number Operations and Relationships
------------------	--

B:

Subskill	Concepts
-----------------	-----------------

B.a.:

Descriptors, such as but not limited to

- Recognize and apply place-value concepts to whole numbers less than 10,000.
- Read, write, and represent numbers using words, numerals, pictures (e.g. base ten blocks), number lines, arrays, expanded forms ($243=200+40+3$), and symbolic renaming (e.g., $243=250-7$).
- Compare and order whole numbers less than 10,000
- Count by 2s, 3s, 5s, 10s, 25s and 100s starting with any multiple and 100s starting with any number.
 - Identify and name counting patterns
- Count, compare, and make change up to \$10.00 using a collection of coins and one-dollar bills..
- Identify a fractional part of a collection/set or parts of a whole.

Read, write, order and represent unit fractions (e.g., $1/2$, $1/3$, $1/4$) and part(s) of a set.

Subskill Computation

B.b.:

Descriptors, such as but not limited to

- Use addition and subtraction in everyday situations and solve one-and two-step word problems
- Solve double-and triple-digit addition and subtraction problems with regrouping in horizontal and vertical format in problems with and without context.
- Demonstrate understanding of multiplication as grouping or repeated addition or arrays in problems with and without context (without context up to 5×9 ; in context products up to 100).
- Demonstrate understanding of the concept of division as repeated subtraction, partitioning/sharing or measuring (dividend up to 45 and divisors up to 5).
- Use fractions to represent quantities when solving problems involving equal sharing or partitioning including fractions less than one as well as mixed numbers.

Represent with shaded circles, rods, squares or pictorial representations of objects (for a set).

- Estimate sums to tens, hundreds, and thousands and differences of ten and hundreds.
- Determine reasonableness of answers.

Objective Geometry

C:

Subskill Describe figures

C.a.:

Descriptors, such as but not limited to;

- Identify, describe, and compare properties of 2- and 3-dimensional figures such as squares, triangles, rectangles, pentagon, hexagon, octagon, pattern block shapes, circles, cubes, pyramids, rectangular prisms, tetrahedrons, cylinders, and spheres (e.g., comparing sides, faces, corners, and edges).

Subskill Spatial relationships and transformations

C.b.:

Descriptors, such as but not limited to

- Create and identify 2-dimensional geometric shapes by combining or decomposing other shapes.
- Identify cubes and square pyramid shapes from their nets (flat patterns).
- Apply concepts of single-motion geometry (e.g., slides, flips and turns) to match two identical shapes.

Subskill Coordinate Systems

C.c.:

Descriptors, such as but not limited to

- Use simple 2-dimensional coordinate systems to find locations on maps and to represent points and simple figures with coordinates using letters and numbers, (e.g., (E, 3)).
- Identify and use relationships among figures (e.g., location, position and intersection).

Objective Measurement

D:

Subskill Measurable attributes

D.a.:

Descriptors, such as but not limited to

- Describe attributes of length, time, temperature, liquid capacity, weight/mass, and volume and identify appropriate units to measure them. Units include: inches, feet, yards, miles, meters, centimeters, millimeters, cups quarts, gallons, liters, seconds, minutes, hours, days, months, years, ounces, pounds, grams, and degrees Fahrenheit/Celsius.
- Compare attributes of length, volume, and weight by observation or when given actual measurements.
- Make measurement conversions within a system (e.g., yards to feet, feet to inches, hours to minutes, days to hours, years to months, gallons to quarts).

Subskill Direct measurement

D.b.:

Descriptors, such as but not limited to

- Read, interpret, and use measuring instruments to determine the measurement of objects with non-standard and standard units to the nearest centimeter, 1/4-inch.
- Read thermometers to the nearest 5 degrees F/C.
- Tell time to the nearest minute and translate time from analog to digital clocks and vice versa.
- Determine and compare elapsed time in multiples of 15 minutes in problem-solving situations.
- Investigate measurements of area and perimeter.

Subskill Indirect measurement

D.c.:

Descriptors, such as but not limited to

- Apply estimation techniques using non-standard units.

Objective Statistics and Probability

E:

Subskill Data analysis and statistics

E.a.:

Descriptors, such as but not limited to

- Answer and pose questions about collecting, organizing, and displaying data. Work with data in the context of real-world situations by formulating questions that lead to data collection and analysis and determining what data to collect and when and how to collect the data.
- Collect, organize, and display data in simple bar graphs and charts, including translating data from one form to the other.
- Draw reasonable conclusions based on simple interpretations of data.

- Read, use information, and draw reasonable conclusions from data in graphs, tables, charts, and Venn diagrams.

Subskill Probability

E.b.:

Descriptors, such as but not limited to

- Determine if the occurrence of future events are more, less, or equally likely to occur.
- Design a fair and an unfair spinner.
- Predict the outcomes of a simple event using words to describe probability (e.g., flipping a coin that has a 1 out of 2 chance of getting a head).
- Describe and determine the number of combinations for choosing 2 out of 3 items (e.g., red hat, blue jacket and green jacket). What are the combinations of wearing a hat and a jacket?

Objective Algebraic Relationships

F:

Subskill Patterns, relations and functions

F.a.:

Descriptors, such as but not limited to

- Recognize, extend, describe, create, and replicate a variety of patterns including attribute, number, and geometric patterns.
Such as:
 - Picture patterns
 - Patterns in tables and charts
 - “What’s-my-rule?” patterns
 - Patterns using addition and subtraction rules.

Focusing on relationships within patterns as well as extending patterns (e.g., patterns and relationships represented with pictures, tables and charts; “what’s-my-rule?” patterns using addition and subtraction rules).

- Determine odd or even.

Subskill Expressions, equations and inequalities

F.b.:

Descriptors, such as but not limited to

- Demonstrate an understanding that the “=” sign means “the same as” by solving open or true/false number sentences.
- Use notation to represent mathematical thinking: letter or box (variable); operation symbols (+, -, =).
- Demonstrate a basic understanding of equality and inequality using symbols (<, >, =) with simple addition and subtraction.

Subskill Properties

F.c.:

Descriptors, such as but not limited to

- Use properties and relationships of arithmetic to determine what number goes in a “box” to make a number sentence true,
 - Identity property of zero Ex: $12 + 0 =$ “box”
 - Identity property of one Ex: $5 \times 1 =$ “box”
 - Commutative property for addition of single-digits
 - Associative property
- Use simple equations in a variety of ways to demonstrate the properties above.

Mathematics Depth of Knowledge

The representative examples for the following depth of knowledge categories are intended to reflect student performance expectations with regard to the level of mental effort and amount of information integrated by the student. Items are targeted at one of four levels of cognitive demand. Each level of demand is represented by items with a range of difficulty, as indicated by the percentage of students who answered the item correctly or by scale score value. Assuming grade-appropriate vocabulary and test items, these levels are viable and useful across all grades.

Level 1: Recognizing and Recalling

Students recognize and recall basic facts, terms, concepts, and definitions of the content and processes of mathematics. For example, students may be required to do computation with whole numbers, fractions, decimals, and integers.

Level 2: Using Fundamental Concepts and Procedures

Students describe or apply basic facts, terms, rules, concepts and definitions of the content and processes of mathematics.

Level 3: Concluding and Explaining

Students demonstrate an understanding of complex ideas, draw conclusions based on this understanding, and communicate ideas and conclusions effectively.

Level 4: Evaluating, Extending, and Making Connections

Students synthesize skills and techniques from various concepts of mathematics to solve multifaceted problems, and justify conclusions using mathematical definitions, properties, and principles. For example, students may be required to support mathematical arguments with definitions, properties, and principles.

Mathematics Rubric for Constructed-Response Items

Step B of the constructed-response items is scored using a generic rubric.

- 2 points** The student demonstrates a thorough understanding of the mathematical concepts and/or procedures represented in the problem. The student uses appropriate mathematical procedures and/or concepts to explain or justify the response to Step A, and provides clear and complete explanations and interpretations containing words, calculations, or symbols, unless otherwise specified in the item stem.
- The response may contain minor flaws that do not detract from the demonstration of a thorough understanding of the problem.
- 1 point** The student demonstrates only a partial understanding of the mathematical concepts and/or procedures represented in the problem. The response lacks an essential understanding of the underlying mathematical concepts used to provide the response to Step A.
- The response contains errors related to the misinterpretation of important aspects of the problem, misuse of mathematical procedures and/or concepts, or misinterpretation of results.
- 0 points** The student provides a completely incorrect explanation or justification, or one that cannot be interpreted, or no response at all.

Mathematics Constructed-Response Item Scoring Guides

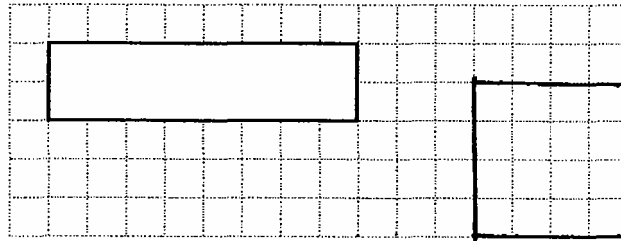
Form: Public Release	Item #: 3	Item Type: BCR	TB Page: 4	AB Page #: n/a
Objective for Step A: B. Number Operations & Relationships				Max Score Pts:
Subskill: B.b. Number Computation				Step A: 0–1
Objective for Step B: A. Mathematical Processes				Step B: 0–2

Step A: Response is limited to correct answer or range below
400

Step B: Responses <u>may</u> include, but may <u>not</u> be limited to, the Answer Cues below	
2 points	<ul style="list-style-type: none"> • Problem solving using repeated addition and/or multiplication • Examples may include but are not limited to: <p style="margin-left: 20px;">I multiplied 10×10 to get the number of seats in A. There are 100 seats. Section C also has 100 seats because it is the same size as A. To find B, I multiplied 10×20 and got 200. Then I added $100 + 100 + 200 = 400$ seats.</p> <p style="margin-left: 20px;">OR</p> $10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 = 100$ $10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 = 100$ $20 + 20 + 20 + 20 + 20 + 20 + 20 + 20 + 20 + 20 = \underline{200}$ <p style="text-align: right; margin-right: 20px;">400</p>
1 point	<p>The response contains errors related to the misinterpretation of important aspects of the problem, misuse of mathematical procedures and/or concepts, or misinterpretation of results. Errors that might be observed include:</p> <ul style="list-style-type: none"> • Giving an incomplete answer such as writing nine 10's, saying "I counted," or neglecting to include one step in the process
0 points	<p>The student provides a completely incorrect explanation or justification, or one that cannot be interpreted.</p>

Form: Public Release	Item #: 12	Item Type: BCR	TB Page: 9	AB Page #: n/a
Objective for Step A: D. Measurement				Max Score Pts:
Subskill: D.b. Direct Measurement				Step A: 0-1
Objective for Step B: A. Mathematical Processes				Step B: 0-2

Step A: Response is limited to correct answer or range below



Step B: Responses may include, but may not be limited to, the Answer Cues below

2 points

- Student response includes an explanation of how both shapes represent the same square units.
- Example:

The square covers the same space as the rectangle because they both cover 16 squares.

OR

Both cover the same number of squares.

OR

$8 + 8 = 4 + 4 + 4 + 4$ **OR** $2 \times 8 = 4 \times 4$

1 point

- Student response includes an incomplete but correct response.
- Student makes reference to the area of one shape only. Example: The square covers 16 squares.

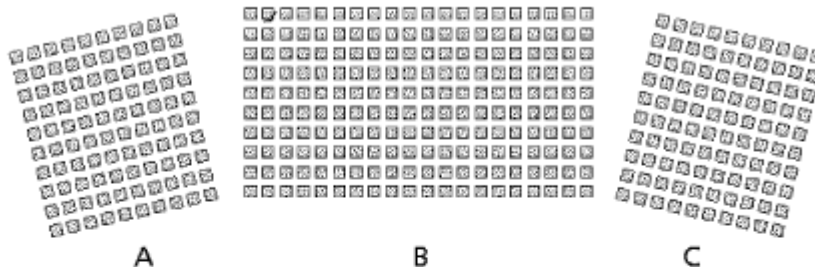
0 points

The student provides a completely incorrect explanation or justification, or one that cannot be interpreted.

Anchor Papers for Mathematics Constructed-Response Items

Item 3

A theater has 3 sections of seats. Section A and section C each have 10 rows of seats. Each row has 10 seats. Section B has 10 rows of seats, but each row has twice as many seats as section A.



Step A

How many seats does the theater have?

Answer: 400 seats

Step B

Use what you know about multiplication to explain how you found the number of seats in the theater.

Use words, numbers, and/or symbols in your answer.

Since $10 \times 10 = 100$ and section A and C are the same it is just $100 + 100$, but B is $10 \times 20 = 200$. So all I had to do is $200 + 200$ to get the answer 400.

Step A

Score Point 1

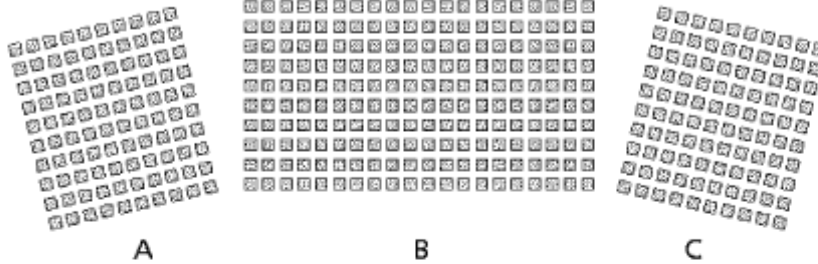
Step B

Score Point 2

> Thorough understanding: accounts for number of seats in each section, and adds to get the total

Item 3

A theater has 3 sections of seats. Section A and section C each have 10 rows of seats. Each row has 10 seats. Section B has 10 rows of seats, but each row has twice as many seats as section A.



Step A

How many seats does the theater have?

Answer: 400 seats

Step B

Use what you know about multiplication to explain how you found the number of seats in the theater.

Use words, numbers, and/or symbols in your answer.

I counted the rows and seats.

Step A

Score Point 1

Step B

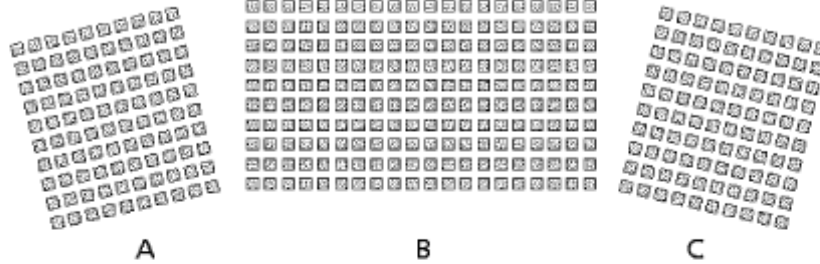
Score Point 1

> Acceptable method: "I counted"

< [incomplete answer: doesn't explain what is counted]

Item 3

A theater has 3 sections of seats. Section A and section C each have 10 rows of seats. Each row has 10 seats. Section B has 10 rows of seats, but each row has twice as many seats as section A.



Step A

How many seats does the theater have?

Answer: 400 seats

Step B

Use what you know about multiplication to explain how you found the number of seats in the theater.

Use words, numbers, and/or symbols in your answer.

cl just added 400 + 400 cl got
my answer

Step A

Score Point 1

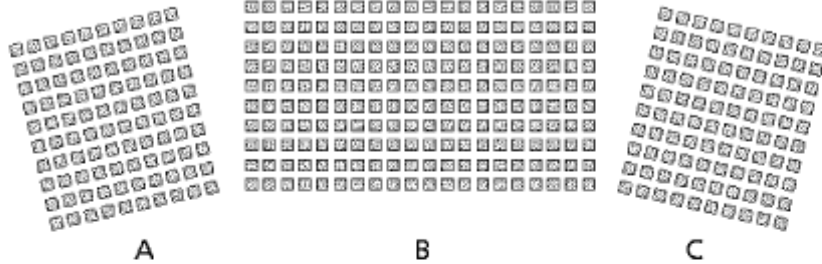
Step B

Score Point 0

< [incorrect explanation]

Item 3

A theater has 3 sections of seats. Section A and section C each have 10 rows of seats. Each row has 10 seats. Section B has 10 rows of seats, but each row has twice as many seats as section A.



Step A

How many seats does the theater have?

Answer: 4000 seats

Step B

Use what you know about multiplication to explain how you found the number of seats in the theater.

Use words, numbers, and/or symbols in your answer.

I know $10 \times 10 = 100$ and
 $100 + 100 = 200$ so I added
 $100 + 100 + 200 = 400$

Step A

Score Point 0

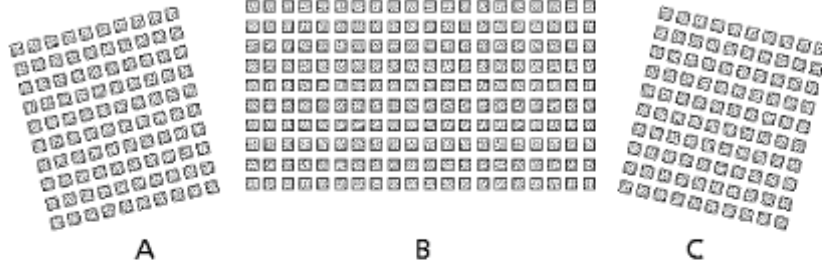
Step B

Score Point 2

> Thorough understanding: uses addition and multiplication and adds correctly

Item 3

A theater has 3 sections of seats. Section A and section C each have 10 rows of seats. Each row has 10 seats. Section B has 10 rows of seats, but each row has twice as many seats as section A.



Step A

How many seats does the theater have?

Answer: 100 seats

Step B

Use what you know about multiplication to explain how you found the number of seats in the theater.

Use words, numbers, and/or symbols in your answer.

I just did 10×10 and got
100 seats. 100 is my
best answer

Step A

Score Point 0

Step B

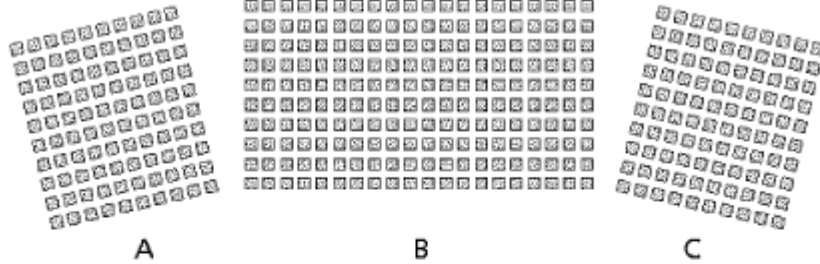
Score Point 1

> Correct method: multiplication

< [partial understanding: calculated one section only]

Item 3

A theater has 3 sections of seats. Section A and section C each have 10 rows of seats. Each row has 10 seats. Section B has 10 rows of seats, but each row has twice as many seats as section A.



Step A

How many seats does the theater have?

Answer: 160 seats

Step B

Use what you know about multiplication to explain how you found the number of seats in the theater.

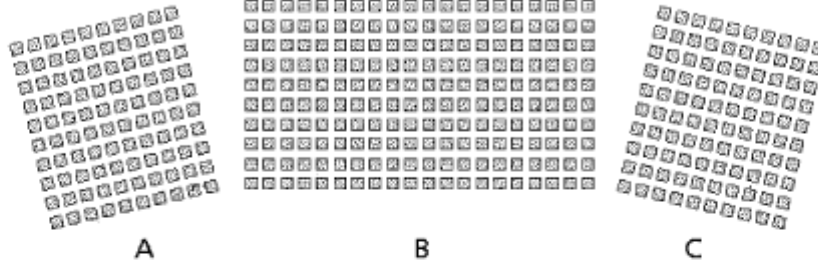
Use words, numbers, and/or symbols in your answer.

BECAUSE I NO

Step A
Score Point 0
Step B
Score Point 0
< [incorrect justification]

Item 3

A theater has 3 sections of seats. Section A and section C each have 10 rows of seats. Each row has 10 seats. Section B has 10 rows of seats, but each row has twice as many seats as section A.



Step A

How many seats does the theater have?

Answer: 90 seats

Step B

Use what you know about multiplication to explain how you found the number of seats in the theater.

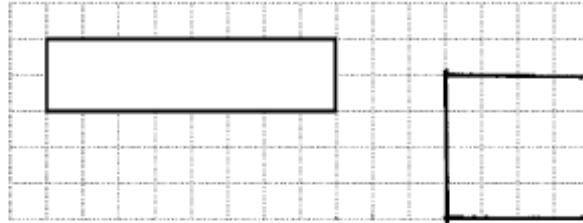
Use words, numbers, and/or symbols in your answer.

I do not understand the problem.

Step A
Score Point 0
Step B
Score Point A
< [equivalent to condition code response: "I don't know"]

Item 12

Look at the rectangle on the grid below.



Step A

On the same grid, draw a square that covers the same amount of space as the rectangle shown. Use a heavy dark line to draw the square.

Step B

Use what you know about measurement to explain why the square you drew covers the same amount of space as the rectangle.

Use words, numbers, and/or symbols in your answer.

The area of the rectangle was 16 so I
made a square that's area was 16 too.

Step A

Score Point 1

Step B

Score Point 2

> Addresses both shapes and that each covers the same area

Item 12

Look at the rectangle on the grid below.



Step A

On the same grid, draw a square that covers the same amount of space as the rectangle shown. Use a heavy dark line to draw the square.

Step B

Use what you know about measurement to explain why the square you drew covers the same amount of space as the rectangle.

Use words, numbers, and/or symbols in your answer.

I know that $4 \times 4 = 16$.

Step A

Score Point 1

Step B

Score Point 1

> Correctly addresses the area of only one shape (square)

Item 12

Look at the rectangle on the grid below.



Step A

On the same grid, draw a square that covers the same amount of space as the rectangle shown. Use a heavy dark line to draw the square.

Step B

Use what you know about measurement to explain why the square you drew covers the same amount of space as the rectangle.

Use words, numbers, and/or symbols in your answer.

base x height

Step A

Score Point 1

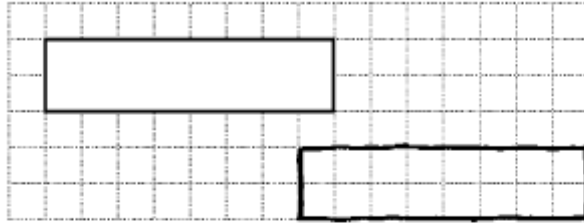
Step B

Score Point 0

< [addresses neither shape (only tells how to get area)]

Item 12

Look at the rectangle on the grid below.



Step A

On the same grid, draw a square that covers the same amount of space as the rectangle shown. Use a heavy dark line to draw the square.

Step B

Use what you know about measurement to explain why the square you drew covers the same amount of space as the rectangle.

Use words, numbers, and/or symbols in your answer.

I just counted the numbers in side but first
I saw there were 2 in the middle, and then
counted across there was 8 so $2 \times 8 = 16$
so I know that there had to be 16

Step A

Score Point 0

Step B

Score Point 1

> Correctly addresses the area of only one shape (rectangle)

Item 12

Look at the rectangle on the grid below.



Step A

On the same grid, draw a square that covers the same amount of space as the rectangle shown. Use a heavy dark line to draw the square.

Step B

Use what you know about measurement to explain why the square you drew covers the same amount of space as the rectangle.

Use words, numbers, and/or symbols in your answer.

I made ² inside the rectangle

Step A

Score Point 0

Step B

Score Point 0

< [not a meaningful response]

Guide to Grade 4 Released Item Books
In READING and MATHEMATICS

Wisconsin Department of Public Instruction
Elizabeth Burmaster, State Superintendent