Wisconsin Knowledge and Concepts Examinations
Criterion-Referenced Test

WI

Guide to

Grade 3

Released Item Books
In READING and MATHEMATICS

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Guide to Grade 3 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

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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,

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 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					Scale Score Location
				Format	A or 0	B or 1	C or 2	D or 3	
1	A	4.1	3	SR	*35%	26%	19%	19%	518
2	D	2.1	1	SR	2%	5%	4%	*87%	422
3	A	2.1	1	SR	*94%	1%	2%	3%	402
4	C	2.1	1	SR	6%	8%	*80%	6%	430
5	B	1.2	1	SR	4%	*74.7%	11%	9%	437
6	A	1.2	1	SR	*67%	8%	18%	5%	459
7	D	1.1	1	SR	4%	7%	3%	*85%	424
8	A	3.1	2	SR	*86%	2%	5%	6%	437
9	D	3.1	2	SR	6%	9%	2%	*82%	428
10	C	2.1	1	SR	16%	13%	*58%	12%	460
11	D	3.1	2	SR	6%	8%	6%	*79%	429
12	B	3.1	3	SR	8%	*78%	6%	7%	439
13	A	3.1	3	SR	*80%	3%	5%	10%	441
14	B	1.1	3	SR	9%	*79%	4%	7%	446
15		3.1	3	BCR	24%	38%	30%	4%	468
16	B	1.3	2	SR	21%	*34%	27%	14%	503
17	D	2.2	2	SR	7%	4%	5%	*80%	421
18	A	2.2	2	SR	*62%	14%	12%	8%	464
19	C	3.3	3	SR	21%	6%	*52%	15%	478
20	D	4.2	4	SR	6%	6%	13%	*70%	442

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
393 and below	394–429	430–465	466 and above

Reading Objectives and Subskills

Types of Text

The grade 3 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:

Literary	Informational	Everyday
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

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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 beginning, middle, and end events.
- Identify first, next, and last events.

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.

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 #: 15	Item Type: BCR	TB Page #: 8	AB Page #: n/a
Reporting Category: Reading				Max Score Pts: 3
Objective: 3. Analyzes Text				
Subskill: 3.1. Analyzes literary text				
Descriptor: Understands and identifies story elements (character traits)				

Item Stem

Compare how Sam felt at the <u>beginning</u> of the passage with how he felt at the <u>end</u>. Explain what happened to change how he felt. Use details and examples from the passage to carefully support your answer. Write your answer 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 how Sam felt at the beginning of the story, how he felt at the end of the story, and what happened to change the way he felt.
- The response consists of an **accurate** explanation for the change in Sam's attitude (i.e. Mrs. Cabot's acquisition of various animals and her decision to let Sam be their pet-sitter) and an **insightful** understanding that Sam himself influenced Mrs. Cabot's decision to buy the animals.
- The student supports the response with **highly relevant ideas and details** from the text. The link between Mrs. Cabot's new animals and the change in Sam's feelings will be explicitly stated. For example:
  - Sam was not happy at the beginning because he wanted a pet. He convinced Mrs. Cabot to buy so many animals that she needed a pet-sitter. Sam was happy at the end because he knew that he was the right person for the job.

2 points
- The response **demonstrates a partial understanding** of the change in Sam's feelings and **fulfills most of the requirements** of the task.
- The response is accurate in its description of the change in Sam's feelings, but **does not indicate an insightful understanding** that Sam manipulated Mrs. Cabot into purchasing the animals.
- The student adequately supports the response with examples from the text. For example:
  - Sam wasn't happy at the beginning because he wanted a live pet. Sam was so happy to be Mrs. Cabot's pet-sitter at the end that he grinned like a wheelbarrow.

1 point
- The response **demonstrates an incomplete understanding** of the change in Sam's feelings and/or the reasons for that change. It does not fulfill all of the requirements of the task.
- The response comments on Sam's feelings at the beginning or the end of the passage, but **fails to make connections** between Mrs. Cabot's purchase of the animals and the change in Sam's feelings.
- The student provides **limited or vague text-based details**. For example:
  - Sam isn't happy at the beginning, but he is at the end. (no explanation for change)
  - Sam is happy at the end because he can take care of animals. (no change)

Anchor Papers for Reading
Constructed-Response Items

Compare how Sam felt at the <u>beginning</u> of the passage with how he felt at the <u>end</u>. Explain what happened to change how he felt. Use details and examples from the passage to carefully support your answer. Write your answer on the lines below.

Sam felt sad at first because he didn't have a pet. He felt happy at the end because he might be a pet-sitter. What happend to change how he felt was the landlady kept having problems like robberies, and mice in the apartment so Sam told her to buy pets that can help with mice, robberies, mowing lawn, and talking. But then she couldn't take care of all those pets so Sam offered to take care of them and be the pet-sitter.

Score Point 3
>Response demonstrates a thorough understanding of how Sam felt at the beginning of the story and how he felt at the end of the story, and what happened to change the way he felt.
>Response gives you relevant ideas and details from the text. "Sam felt sad at first because he didn't have a pet." "He felt happy at the end because he might be a pet-sitter."
>Response indicates Sam's manipulation of Mrs. Cabot to acquire the animals "Sam told her to buy pets."

Compare how Sam felt at the <u>beginning</u> of the passage with how he felt at the <u>end</u>. Explain what happened to change how he felt. Use details and examples from the passage to carefully support your answer. Write your answer on the lines below.

Sam felt sad at the beginning because Mrs. Cabot would not let him have a pet. At the end Sam felt happy because he could be the pet-sitter. He changed from being sad all the way to happy.

Score Point 2
> Reponse demonstrates a partial understanding of the change in Sam's feelings and fulfills most of the requirements of the task.
> Response does not indicate an insightful understanding that Sam manipulated Mrs. Cabot into purchasing the animals.
> Response indicates how he felt and why: "Sam felt sad... would not let him have a pet." "Sam felt happy because he could be the pet-sitter."

Compare how Sam felt at the <u>beginning</u> of the passage with how he felt at the <u>end</u>. Explain what happened to change how he felt. Use details and examples from the passage to carefully support your answer. Write your answer on the lines below.

He was angry at the beginning because he could not get a pet. But now he happy he can get a pet

Score Point 1
  > Response demonstrates an incomplete understanding or reasons for changess in Sam's feelings..
  > Response fails to make any connections between Mrs. Cabot's purchase of the animals and the change in Sam's feelings.
  > Response provides limited or vague text-based details: "He was angry at the beginning......But now he happy...."

Compare how Sam felt at the <u>beginning</u> of the passage with how he felt at the <u>end</u>. Explain what happened to change how he felt. Use details and examples from the passage to carefully support your answer. Write your answer on the lines below.

first, he was sad,
then, he was happy

Score Point 1
> Response demonstrates an incomplete understanding of the change in Sam's feelings and the reasons for that change.
> Response fails to make connections between Mrs. Cabot's purchase of the animals and the change in Sam's feelings.
> Response is very limited and vague in its text-based details. Sam is sad at the beginning and happy at the end with no explanation for the change.

Compare how Sam felt at the <u>beginning</u> of the passage with how he felt at the <u>end</u>. Explain what happened to change how he felt. Use details and examples from the passage to carefully support your answer. Write your answer on the lines below.

Sam felt sad at
the beginning

Score Point 0
  > Response demonstrates no understanding of the change in Sam's feelings
     or the reasons for that change.
  > Response fails to make any connection between Mrs. Cabot's purchase of
     the animals and the change in Sam's feelings.
  >Response is very limited "Sam felt sad" gives no reason for his feelings
     and no indication of any change.

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, and scratch paper.

*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, 2 sets

❑ Ruler

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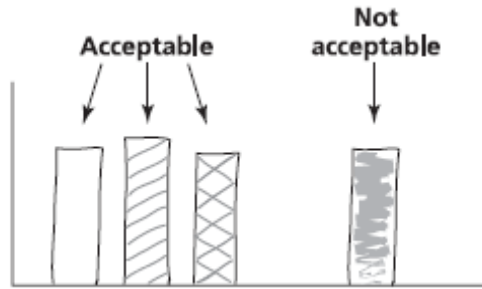
Now you will do Session 1 of the Mathematics test. Remember to read all of the directions and information in the test book. When you come to the word "STOP" at the bottom of the page, you have finished Session 1. You may go back and check your answers, but do not go on to Session 2 of the Mathematics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

You will have 15 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 15 Minutes:	Record the Stopping Time:
	+ 15	

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 20 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 20 Minutes:	Record the Stopping Time:
_____	+ 20	_____

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	Format	A or 0	B or 1	C or 2	D	Scale Score Location
					2005–06 Item Statistics — 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					
1	B	No	Fc	2	SR	1%	*93%	3%	3%	362
2	C	No	Bb	2	SR	13%	6%	*73%	7%	403
3	D	No	Fb	2	SR	20%	23%	12%	*37%	480
4	B	No	Fa	2	SR	5%	*80%	5%	2%	382
5		No	Bb	2	A-BCR	22%	76%			387
5		No	Ae	3	B-BCR	16%	13%	69%		388
6	B	No	Fb	2	SR	18%	*46%	14%	17%	457
7	C	No	Fc	3	SR	21%	20%	*52%	5%	448
8	A	No	Ba	2	SR	*76%	3%	9%	7%	320
9	B	No	Bb	2	SR	20%	*59%	8%	8%	438
10	C	No[1]	Ba	1	SR	11%	3%	*80%	5%	394
11	B	No[1]	Ba	2	SR	16%	*26%	49%	9%	487
12	B	No[1]	Db	1	SR	6%	*79%	1%	13%	388
13	C	No[1]	Ea	2	SR	2%	3%	*77%	17%	402
14	D	No[1]	Da	2	SR	4%	5%	4%	*87%	375
15		No[1]	Db	2	A-BCR	29%	69%			382
15		No[1]	Ae	3	B-BCR	13%	73%	12%		439
16	D	No[1]	Eb	2	SR	15%	5%	2%	*77%	398
17	D	No[1]	Cb	3	SR	3%	26%	4%	*66%	420
18	B	No[1]	Ca	1	SR	1%	*97%	0%	0%	310
19	D	No[1]	Cc	1	SR	1%	2%	1%	*95%	348
20	D	No[1]	Cb	3	SR	5%	34%	27%	*33%	510

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

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
391 and below	392–406	407–451	452 and above

Mathematics Objectives and Subskills

Beginning of Grade 3

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 A:	**Mathematical Processes**
	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 B:	**Number Operations and Relationships**
Subskill B.a.:	**Concepts**
	Descriptors, such as but not limited to

- Recognize and apply place-value concepts to whole numbers less than 1,000
- Read, write, and represent numbers using words, numerals, pictures (e.g., base-ten blocks), number lines, arrays, expanded forms (24=20+4) and symbolic renaming (e.g., 24=30-6).
- Compare and order whole numbers less than 1,000.
- Count by 2s, 3s, 5s, 10s, 25s and 100s.
- Count, compare and make change using a collection of coins (up to one dollar) and one-dollar bills.
- Identify a fractional part of a collection/set.

Read, write and represent fractional parts of a whole (e.g., 1/4, 1/2).

Subskill B.b.:	**Computation**

Descriptors, such as but not limited to

- Use addition and subtraction in everyday situations and solve one-step word problems.
- Solve single and double-digit addition and subtraction problems with regrouping including horizontal format in problems with and without context.
- Demonstrate the concept of multiplication as grouping or repeated addition in context with products up to 50.
- Demonstrate understanding of the concept of division as repeated subtraction, partitioning/sharing or measuring (dividend up to 30 and divisors up to 5).
- Use fractions to represent quantities when solving problems involving equal sharing or partitioning.
- Represent with shaded circles, rods, squares, pictorial representations of a whole.
- Estimate sums to tens and hundreds and differences to ten.
- Determine reasonableness of answers.

Objective C:	**Geometry**
Subskill C.a.:	**Describing figures**

Descriptors, such as but not limited to

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

Subskill C.b.:	**Spatial relationships and transformations**

Descriptors, such as but not limited to

- Identify 2-dimensional geometric shapes created by combining or decomposing other shapes e.g., square/triangles; trapezoid/rhombus, triangle; hexagon/triangles, rhombus, trapezoid.
- Apply concepts of single-motion geometry (e.g., slides, flips and turns) to match two identical shapes.

Subskill C.c.:	**Coordinate systems**

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 of letters and numbers, (e.g., (E, 3)).

Objective D:	**Measurement**

Subskill D.a.:	**Measurable attributes**

Descriptors, such as but not limited to

- Describe attributes of length, time, and temperature and identify appropriate units to measure them. Units include: inches, feet, yards, centimeters, meters, seconds, minutes, hours, days, months, years, and degrees Fahrenheit/Celsius.
- Compare attributes of length and weight by observation or when given actual measurements.

Subskill D.b.:	**Direct measurement**

Descriptors, such as but not limited to

- Read and interpret measuring instruments to determine the measurement of objects with non-standard and standard units to the nearest centimeter or 1/2 inch.
- Read thermometers to the nearest 5 degrees F/C.
- Tell time to the nearest minute using analog and digital clocks; translate time from analog to digital clocks and vice versa.
- Investigate measurements of area.

Subskill D.c.:	**Indirect measurement**

Descriptors, such as but not limited to

- Apply estimation techniques using non-standard units.

Objective E:	**Statistics and Probability**
Subskill E.a.:	**Data analysis and statistics**

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 determining what data to collect and when and how to collect it to answer questions.
- 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 E.b.:	**Probability**

Descriptors, such as but not limited to

- Determine if the occurrence of future events are more, less or equally likely to occur.
- Choose a fair and an unfair spinner.

Objective F :	**Algebraic Relationships**
Subskill F.a.:	**Patterns, relations and functions**

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, and "what's-my–rule?" patterns using addition and subtraction rules.
- Determine odd or even with a total set of 20 or less.

Subskill F.b.: **Expressions, equations and inequalities**

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 (+, -, =).

Subskill F.c.: **Properties**

Descriptors, such as but not limited to
- Use properties and or relationships of arithmetical thinking to determine and to reason about what number goes in a "box" to make a number sentence true,
  - identity property of e.g., zero (e.g., property $12 + 0 =$ "box")
    adding 1 to any number, commutative property for addition of single-digits
- 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 location. 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 <u>not</u> 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 #: 5	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

24 crayons

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

2 points   <u>Either</u> of the following tasks are accomplished:

- The student must correctly express how to solve the problem using the concepts of repeated addition, counting pictorial representations or multiplication as grouping.

(See note 1 below.)

1 point

- Student uses correct process needed to solve the problem but makes minor errors in his explanation.

- States process, I added or multiplied without showing work.

(See note 2 below.)

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

Note 1:   Examples may include but are not limited to: //////// //////// //////// = 24 **OR**
8 + 8 + 8 = 24 **OR** I made 3 groups of 8 and counted them to find the number of crayons. There were 24.

Note 2:   If an arithmetic error leads to the loss of a point in Step A, and the process is otherwise correct, award full credit for step B.

Form: Public Release	Item #: 15	Item Type: BCR	TB Page #: 10	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

30

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

2 points   Both of the following tasks are accomplished (See note 1 below.):

  - The student states the process used.

  - The student sets up the calculations correctly.
    [2+6+6+2+6+6+2= 30 **OR** (3 x 2) + (4 x 6) = 30] **OR**
    (6 x7) – 12 = 30 **OR** 5 x 6 = 30 with explanation of outlying 4 units

1 point   One of the following applies:

  - The student accomplishes either of the above tasks.

  - The student accomplishes both of the above tasks, but with a computational error. (See note 2 below.)

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

Note 1:   If the student indicates finding the result by counting square units, award 1 point only.

Note 2:   If an arithmetic error leads to loss of credit for Step A, and the process is otherwise correct, award full credit for Step B.

Anchor Papers for Mathematics
Constructed-Response Items

Item 5

Simon has 3 boxes with 8 crayons in each box.

Step A

How many crayons does Simon have?

Answer: _____ 24 _____ crayons

Step B

Explain how you found the number of crayons that Simon has.
Use words, numbers, and/or symbols in your answer.

_____ $3 \times 8 = 24$ crayons _____

Step A
  Score Point 1
Step B
  Score Point 2
  > Uses element of multiplication and correct numbers

Item 5

Simon has 3 boxes with 8 crayons in each box.

Step A

How many crayons does Simon have?

Answer: _____ 2 4 _____ crayons

Step B

Explain how you found the number of crayons that Simon has.
Use words, numbers, and/or symbols in your answer.

I used times to figer it out.

Step A
   Score Point 1
 Step B
   Score Point 1
   > Uses element of multiplication
   < [missing any numbers to be multiplied]

Item 5

Simon has 3 boxes with 8 crayons in each box.

Step A

How many crayons does Simon have?

Answer: _____ 24 _____ crayons

Step B

Explain how you found the number of crayons that Simon has.
Use words, numbers, and/or symbols in your answer.

I drew the picture and I
I drew the line, and it = 24

Step A
  Score Point 1
 Step B
  Score Point 0
  < [missing multiplication element and correct numbers]

Item 5

Simon has 3 boxes with 8 crayons in each box.

Step A

How many crayons does Simon have?

Answer: _____ 21 _____ crayons

Step B

Explain how you found the number of crayons that Simon has.
Use words, numbers, and/or symbols in your answer.

On my scrap peice of paper,
I did 3x8 and it equaled up
to 21 crayons. That is how
I found my answer

Step A
    Score Point 0
  Step B
    Score Point 2
    > Multiplies 8 and 3 for a correct response

Item 5

Simon has 3 boxes with 8 crayons in each box.

Step A

How many crayons does Simon have?

Answer: _____ 25 _____ crayons

Step B

Explain how you found the number of crayons that Simon has.
Use words, numbers, and/or symbols in your answer.

I used times to figger it out.

Step A
  Score Point 0
 Step B
  Score Point 1
  > Uses element of multiplication
  < [missing numbers to be multiplied]

Item 5

Simon has 3 boxes with 8 crayons in each box.

Step A

How many crayons does Simon have?

Answer: _____ 3 8 _____ crayons

Step B

Explain how you found the number of crayons that Simon has.
Use words, numbers, and/or symbols in your answer.

I guessed _____

_____

_____

_____

Step A
  Score Point 0
 Step B
  Score Point 0
  < [missing multiplication element and correct numbers]

Item 15

Look at the grid below.
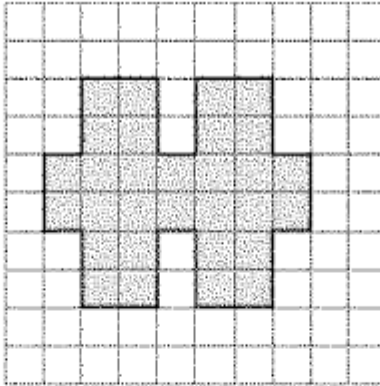
Step A

How many square units are shaded on the grid?

Answer: _____ 30 _____ square units

Step B

Explain how you found the number of square units that are shaded.
Use words and/or numbers in your answer.

I counted the middle and it had 14 squares and I added 4,4,4, and 4 and it=16 and 14+16=30.
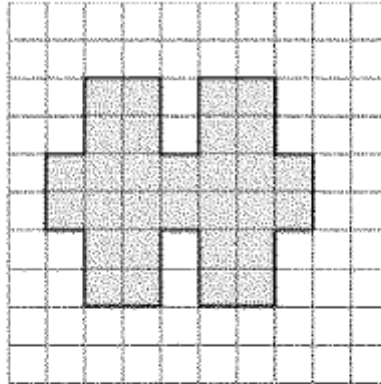
Step A
  Score Point 1
Step B
  Score Point 2
  > Response states a mathematical process (addition)
  > Response sets up a calculation to find the number of square units that are
    shaded

Item 15

Look at the grid below.

Step A

How many square units are shaded on the grid?

Answer: There are 30 _____ square units

Step B

Explain how you found the number of square units that are shaded.
Use words and/or numbers in your answer.

I did it by counting the blocks
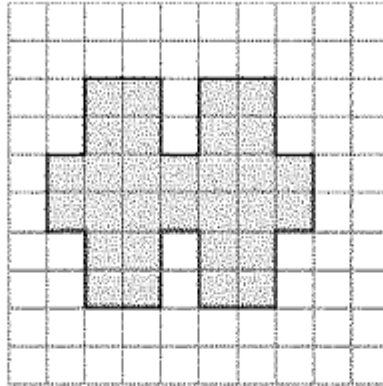or you can count by twos.

Step A
   Score Point 1
Step B
   Score Point 1
   > Response states a mathematical process (counting); specifying that blocks
      were counted by "twos" is irrelevant
   < [response does not set up a calculation to find the number of square units
   that are shaded]

Item 15

Look at the grid below.

Step A

How many square units are shaded on the grid?

Answer: 30 square units

Step B

Explain how you found the number of square units that are shaded.
Use words and/or numbers in your answer.

I have did it in rows.

Step A
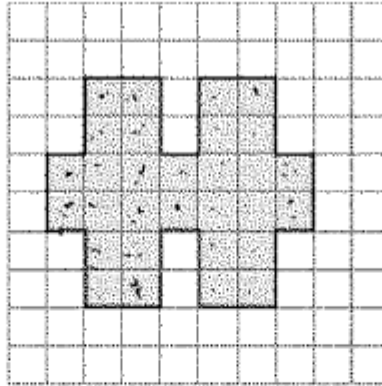 Score Point 1
 Step B
 Score Point 0
 < [response does not state a mathematical process]
 < [response does not set up a calculation to find the number of square
units that are shaded]

Item 15

Look at the grid below.

Step A

How many square units are shaded on the grid?

Answer: 3 _____ square units

Step B

Explain how you found the number of square units that are shaded.
Use words and/or numbers in your answer.

I did 15 + 15 and got
30 that is how I got my
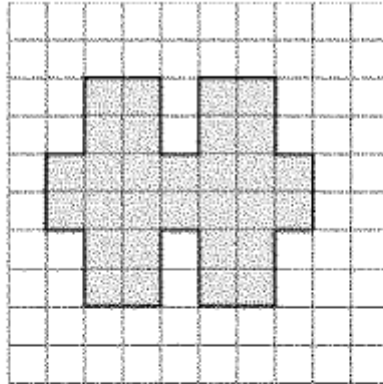answer

Step A
   Score Point 0
 Step B
   Score Point 2
   > Response states a mathematical process (addition)
   > Response sets up a calculation to find the number of square units that are shaded

Item 15

Look at the grid below.

Step A

How many square units are shaded on the grid?

Answer: ___six's___ square units

Step B

Explain how you found the number of square units that are shaded.
Use words and/or numbers in your answer.

Count by two's and Count the squares.

Step A
   Score Point 0
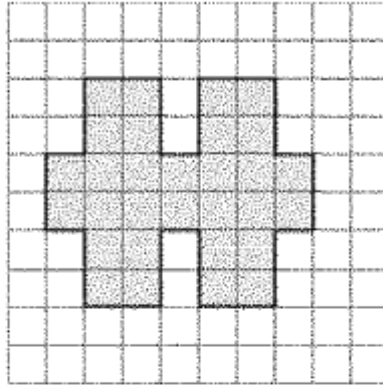 Step B
   Score Point 1
   > Response states a mathematical process (counting); specifying that squares
        were counted by "two's" is irrelevant
   < [response does not set up a calculation to find the number of square units that are shaded]

Item 15

Look at the grid below.

Step A

How many square units are shaded on the grid?

Answer: _____ 4 _____ square units

Step B

Explain how you found the number of square units that are shaded.
Use words and/or numbers in your answer.

Look for a grope of squares,

Step A
Score Point 0
Step B
Score Point 0
< [response does not state a mathematical process]
< [response does not set up a calculation to find the number of square units that are shaded]

Guide to Grade 3 Released Item Books
In READING and MATHEMATICS

Wisconsin Department of Public Instruction
Elizabeth Burmaster, State Superintendent