

# Guidelines for Using the NCTE Student Assessment



National Center for  
Teacher Effectiveness



# Testing information on NCTE website

- PowerPoint presentation
  - Introduction to student assessment
  - Test administration procedures
    - Sample assessment
    - Student assessment procedures
  - Scoring procedures
- Test forms and answer keys
- Test administration manual and ancillary materials
- Technical report and scoring guide



# Introduction to NCTE student assessment

# NCTE Student Assessment: Background

- Developed jointly by Harvard and Educational Testing Service, under the direction of Dr. Heather Hill
- Aligned with Common Core State Standards for Mathematics (CCSSM) for grades 4 and 5
- Test forms and ancillary materials (test administration manual, scoring guide, practice items, etc.) intended to be an open resource for educational (not commercial) use. Why?
  - Few instruments available to measure student knowledge and growth in upper elementary grades
  - Researchers often constrained to use scores from standardized state tests; this assessment provides an alternative

# NCTE Student Assessment: Design principles

- Designed to...
  - Be sensitive to variation in teachers' mathematical knowledge for teaching and instruction
  - Measure improvements in student learning that might result from teacher professional development
  - Reveal patterns in student achievement with respect to the CCSSM

# NCTE Student Assessment: Design principles in practice

- Designed to...
  - Represent *central ideas* in the subject matter
  - Focus on the *meaning* of facts and procedures
  - Require more complex responses than traditional multiple-choice problems
  - Be written in a “Plain English” style in order to increase accessibility to a wider range of students.

# NCTE Student Assessment: Structure of the assessment

- Four forms per grade
  - Allows more items to be tested within each classroom
- Scale scores equated across forms, vertically equated across grades
  - A score of 102 has an identical meaning regardless of grade and test form

Test Form Distribution	
Grade 4	Grade 5
F, G, H, J	K, L, M, N



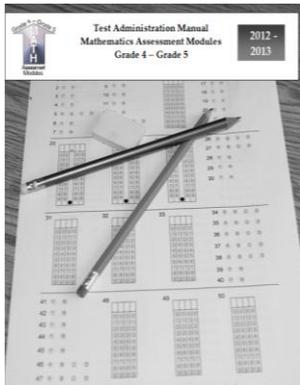
# Test administration procedures

# Before the Administration

- Create student assessment roster; confirm with school contact (and/or participating teacher, if necessary)
  - For more information on these steps, see the document “Test Administration Manual,” Appendix A
- Strongly recommended: Introduce students to “sample items” at least one week prior to the actual test administration
  - Provide teachers the sample tests, answer key and *Mathematics Sample Questions – Teacher Guide*
- Plan for any testing accommodations that may be necessary for specific students, including arrangements for additional proctors or assistants
- Ship NCTE student assessment package to each classroom
  - See next slide for details on package contents

# Testing Logistics: NCTE student assessment package

1. Test Administration Manual (TAM)



2. Student Assessment Roster
3. Student Assessments
4. “Do Not Disturb” Sign
5. Extra Assessments envelope (contains 3 unassigned assessments for students not on the roster)

6. Make-ups envelope (to store assessments for students that require a make-up test)
7. Pencils

The NCTE website includes downloadable testing materials in the “NCTE Student Assessment Toolkit”

# Responsibilities of test examiners before testing day

- Read all materials, including the Test Administration Manual
- Arrange for appropriate number of proctors and setting for test administration well ahead of time
- Have extra pencils and erasers available
- Prepare student answer sheets (if applicable)
  - See slides 12-13 for details

For more information on these steps, see the document “Test Administration Manual”, pages 4-6

# Testing Logistics:

## Preparing answer sheets

- We highly recommend using answer sheets in order to reduce data entry time and error risk
  - The answer sheets have not been formatted for scanning
  - Some users may wish to key entry directly from the test booklets
- There are two different answer sheets – one for grade 4 students and one for grade 5 students
  - Forms F, G, H, J are for Grade 4 students
  - Forms K, L, M, N are for Grade 5 students

Student Answer Sheet		Student Answer Sheet	
<b>Grade</b>	<b>Test Form Code</b>	<b>Grade</b>	<b>Test Form Code</b>
<input type="radio"/> 5	<input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> J <input type="radio"/> K <input type="radio"/> L <input type="radio"/> M <input type="radio"/> N	<input type="radio"/> 4 <input checked="" type="radio"/>	<input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> J <input type="radio"/> K <input type="radio"/> L <input type="radio"/> M <input type="radio"/> N

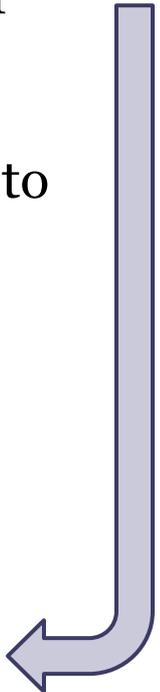
# Testing Logistics: Preparing answer sheets

- We recommend pre-slugging student information on the answer sheets to save time in administration
  - See [example below](#)
- The type of pencil used doesn't matter, but it must dark enough to be read.

Administration Window	
<input checked="" type="radio"/> Fall 2012	<input type="radio"/> Spring 2013

District: 01 (Leon)
School No: 0045 (Canopy Oaks)
Teacher: 004 (Judy Hickman)
Student ID: 9012

Dist.	School No.	Teacher	Student ID
01	0045	004	9012
00	0000	000	0000
11	1111	111	1111
22	2222	222	2222
33	3333	333	3333
44	4444	444	4444
55	5555	555	5555
66	6666	666	6666
77	7777	777	7777
88	8888	888	8888
99	9999	999	9999



# Responsibilities of test examiners on testing day

- Receipt of test materials
  - Confirm the correct number of test booklets and answer sheets
- Establish the test setting
  - Provide appropriate testing conditions and accommodations, if necessary
  - Post *Do Not Disturb* sign
  - Adequately separate students so they cannot see each other's answers
- Check students' work areas
  - Calculator use is not permitted
- Read the verbal instructions to students
  - Follow the script included in the TAM
- Monitor student progress
  - Remind students to handle their answer sheets with care and to record their answers with dark pencil marks
- Answer students' questions

For more information on these steps, see the document “Test Administration Manual”, pages 7-14

# Actual Administration - FAQs

- How should forms be assigned to students?
  - Students should be randomly assigned to test forms, controlling for even distribution, and ensuring that:
    - Students take a different test form each administration (ex. Johnny is randomly assigned Form F in the fall, and is randomly assigned a form that is *not* F in the spring)
    - For ease of administration, all students with read aloud accommodations (within the same school) may be given the same test form
- How much time should be allotted for test administration?
  - 10 minutes for test setup
  - 60 minutes for the student assessment (except for students with time accommodations)
  - 10 minutes for test wrap up

# Actual Administration - FAQs (continued)

- Do you stop students who aren't done at the end of the 60 minutes?
  - If a student has not finished the test, write “Did not finish” or “Had time accommodation” on the assessment roster
- What kind of assistance can you offer students who have questions?
  - Test proctors may answer students' questions concerning how to mark an answer on the answer sheet, and students may be referred back to the sample items and gridded-response directions as needed. However, help must not be given on specific test items.
- Do students use answer sheets or can they just write in the test booklet?
  - If you are using answer sheets, students should be encouraged to do their work in the test booklet and then mark their answers on the student answer sheet. Make sure students regularly transcribe their answers to the answer sheet as answers that are recorded in the test booklets will NOT be scored.

# Responsibilities of test examiners after testing

- Separate test booklets from answer sheets
  - Check students' answer sheets
    - Ensure that all circles students intended to mark are filled in completely.
    - Ensure that the identifying information
- Ensure that the student assessment roster is complete
- Assemble materials for return

For NCTE-specific testing procedures, see the document “Test Administration Manual,” page 15

# Scoring student responses

# Scoring student responses

- For more information on the following steps, see the document “NCTE Assessment Scoring Guide”
- Step 1: Enter and verify data
  - Transfer raw student responses into an Excel file. Be sure to transfer the raw response (“A” or “13.5” or “No”) rather than attempting to correct them – this decreases data entry error
  - If desired, verify data entry with a second pass

# Scoring student responses

- Step 2: Convert responses to correct/incorrect
  - Separately, in different columns of the spreadsheet
    - Preserving original data allows you to check for mis-keys later
  - *Omitted items* (no answer): Count as incorrect
  - *Multiple choice items*: Each correct answer = 1 raw point
  - *Gridded response*: Each correct answer = 1 raw point
  - *Nested sets of items*: Some items have a common stem and 3-4 specific questions. These need to be scored using a special scoring rules that yield 0, 1 or 2 points

Figure 1. (Grade 4, Form G)

For numbers 21-24, state whether or not each figure has  $\frac{2}{5}$  of its whole shaded.

21.		(Y) Yes (N) No
22.		(Y) Yes (N) No
23.		(Y) Yes (N) No
24.		(Y) Yes (N) No

Nested set

Figure 2.

Scoring Rubric

Response to this item will receive 0-2 points, based upon the following:

2 points: YNYN The student has a solid understanding of  $\frac{2}{5}$  as well as an equivalent form of  $\frac{2}{5}$ .

1 point: YNNN, YNYY, YYNN The student has only a basic understanding of  $\frac{2}{5}$ . Either the student doesn't recognize an equivalent fraction for  $\frac{2}{5}$  or doesn't understand that all 5 parts must be equal-sized in item #23.

0 points: YYYY, YNNY, NNNN, NNNY, NYNN, NYNN, NYYY, YYNY, YNYY, NYNY, NNNY, NNNY The student demonstrates inconsistent understanding of  $\frac{2}{5}$  or answers "Y" to item #25, clearly showing a misunderstanding of what  $\frac{2}{5}$  means. Figure #25 is considered a "disqualifier," and an answer of "Y" to this part of the item would cancel out any other correct responses as "guesses" on the part of the student.

Nested set scoring rules

# Scoring student responses

- Step 3: Convert total raw score to scaled score
  - Total the number of points each student gets
  - Consult the table in “NCTE Assessment Scoring Guide” to convert the raw score to scale score
  - Why?
    - Each form has a different mix of items and item difficulty
    - The scale scores were equated using Item Response Theory techniques
    - Forms are equated across grade level as well – that is, they are vertically equated

## For more information

- Download the Technical Report, which includes:
  - Description of assessment development
  - Description of pilot samples
  - Psychometric information
  - Validity
- Download the Scoring Keys, which include:
  - Correct answers for all the items
  - Scoring rules for nested sets

# Contact

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