



Exciting Teachers
and
Improving Student Achievement
with
Standards-Based Assessment Data
Sandy Sanford
Video Note-taking Guide

OUTCOMES 1-3

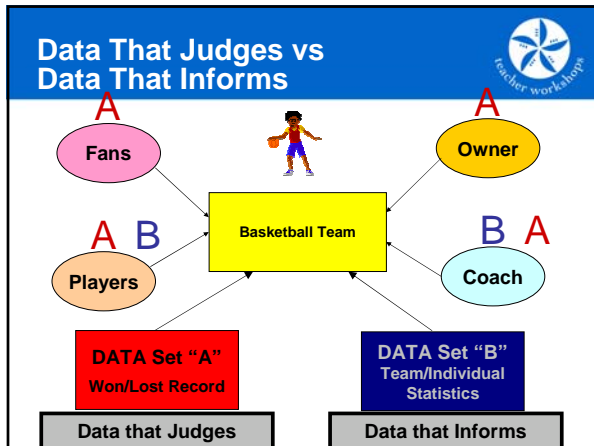


- Explain the difference between “**data that judges**” and “**data that informs**” (& Why BOTH are important)
- Explain the difference between norm-referenced tests (NRTS) and criterion referenced tests (CRTS)
- Describe the value of measurement in a standards-based environment

OBJECTIVES 4-6



- List the characteristics of teacher-friendly assessment data
- Describe the concept of wrong response analysis as it applies to standards-based, criterion-referenced measurements
- **Demonstrate the use of the “WHAT” process for informing instruction in a standards-based environment**



Criterion vs Norm-Referenced Tests, How "Standards" Affect Assessment

The block compares two types of tests using a 100 Meter Dash example. On the left, a red scroll says '100 Meter Dash'. In the center is an image of a runner. On the right, a red circle says 'It was the SAME Race'.

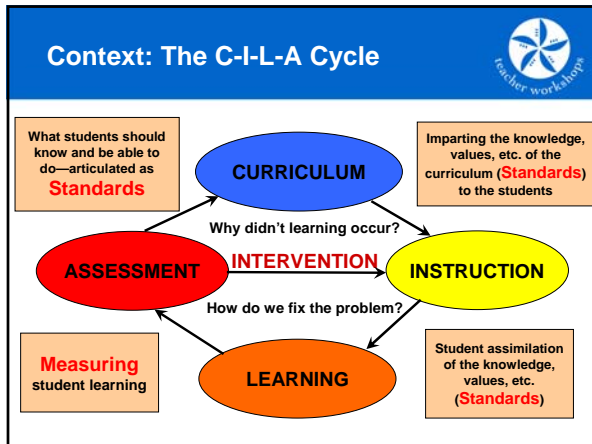
Norm-Referenced Test (NRT):

- I was last out of 100 runners
- How well did I run?

Criterion-Referenced Test (CRT):

- 10.20 second ET
- The 100 fastest runners in the USA
- How well did I run?

- ### Historical Perspective 100 Meter Dash World Records
- Donald Lippincott—10.60 seconds in 1912
 - Charles Paddock—10.40 seconds in 1921
 - Jesse Owens—10.20 seconds in 1936
 - Carl Lewis—9.86 seconds in 1991
 - Tim Montgomery—9.78 seconds in 2002 (current world record holder)
 - Wilma Rudolph—11.3/11.0 seconds in 1960*
 - Florence Griffith Joyner—10.49 seconds in 1988 (current women's world record holder)



**Etymological Perspective
Assess, Measure, Test**

- **“Assess”** and **“Measure”** have different connotations than **“Test”**
- **“Assessment”** from the Latin *assidēre* meaning “to sit by”
- **“Measure”** from the Latin *mēnsūrāre* meaning to determine the magnitude of
- **“Test”** from the Latin *testā* meaning an earthen vessel or pot used for refining or assaying to judge quality

**Testing vs Measurement,
Standards Beg for Measurement**

Both assess but difference is based on purpose

- **Testing judges**
- **Measurement informs**

Note: This is not a technical definition; it is a practical definition from a teaching perspective

Four Essential Questions



1. What are students supposed to learn?
Content Standards
2. How do we tell if students have learned or not? **Measurement**
3. How do we tell “why” students are not learning? **WHAT Process**
4. What do we do to reverse a non-learning situation? **Intervention**

First Thought Provoker



You are preparing to run in a marathon in 12 months. Which of the following activities best prepare you?

- a. Shooting free throw shots
- b. Kicking field goals
- c. Practicing penalty shots
- d. Running 100 meter dashes
- e. Long-distance running



Second Thought Provoker



Six months from now you and a friend are going to attempt to sail a 32-foot sloop-rigged boat around the world. Which activities best prepare you for your objective?

- a. Crewing on a 12-meter yacht
- b. Attending open water survival training
- c. Participating in catamaran races
- d. Entering the local speed boat competition
- e. Gaining proficiency in sailing a 32-foot sloop

Third Thought Provoker



You are teaching your students in accordance with the state Content Standards. What measures are best to use throughout the year in order to determine how well your students are doing with respect to the state Content Standards?

- a. Assessments from the text
- b. Assessments from supplemental books
- c. Standards-based assessments that are closely aligned to the content standards
- d. Measurement items you make up the night before

Activity "A"



The following report was delivered to your grade level team to help you analyze results of a standards-based assessment. You want to determine how best to design interventions to help students who are not mastering particular standards.

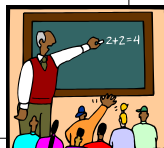
- 1. What aspects of this report are not useful to the team?
- 2. What aspects of this report are useful to the team?

Activity "A" Typical Unfriendly Report



Teacher/Team Report for Math Assessment

Johnny	73
Billy	84
Sara	92
May	82
Class Average = 82.75	



Grade Level Results for Math Assessment
110 Students Tested, Average Score 78.25

Activity A Report—Pros and Cons



Is Useful

1. **Results were forthcoming—better than nothing**
2. **Some quantitative data**
3. **Student level data for teacher**

Is Not Useful

1. **Only Summative results**
2. **No indication as to “what” the students don’t know**
3. **No reference to strands or content standards**
4. **Can’t tell how long it took to get the data to the team**
5. **No hint as to “why” students missed whatever they missed**

Results Must Be Timely




- **To effectively use assessment data to inform instruction, the data must be in the hands of teachers as quickly as possible**
- **Optimistically, this means within one to three days**
- **Ideally, this means **instantaneously****

Results Must Report “What” the Students Don’t Know




“Unless teachers, students, and parents can determine **which content standards are being mastered and which ones are not**, then standards-based reform is doomed to be little more than an attractive but meaningless bit of rhetoric.”

James Popham from *Test Better, Teach Better: The Instructional Role of Assessment*. ASCD, 2003


Content Hierarchy 

- **Content Area**—ELA, Math, H/SS, Science, etc.
- **Domain**—an optional grouping of related strands, e.g., reading and writing in ELA
- **Strand**—a grouping of related standards, e.g., “Measurement & Geometry” in Math or “Reading Comprehension” in ELA
- **Content Standard**—a specific learning requirement in a content area articulated behaviorally and in detail. Collectively, content standards define the core curriculum

Activity “B” 

The next report is typical of a report delivered for high stakes testing instruments. Considering you are in the same grade-level team as before and are attempting to accomplish the same task...

1. **What aspects of this report are not useful to the team?**
2. **What aspects of this report are useful to the team?**

Activity “B” Report
Typical High Stakes Testing Report 

<u>Grade-Level Summary</u>			
<i>Strand</i>	<i># Questions</i>	<i>% Correct</i>	
Written and Oral Lang Conventions	23	46.09%	
Writing Strategies	7	50.48%	
Students Tested=141	Entire Test	30	48.29%

<u>Classroom Summary</u>			
<i>Name</i>	<i>Overall</i>	<i>W & O Lang Conv</i>	<i>Writing Strat</i>
Johnny	20-67%	15-65%	5-71%
Mary	28-93%	21-91%	7-100%
Ted	13-43%	10-43%	3-43%
Class Avg	20-67%	15-67%	5=71%

Activity B—Pros and Cons



Is Useful

1. Results are forthcoming
2. Grade level summary results provided
3. Disaggregation by strand (a collection of related standards)
4. Classroom level data for teacher by strand
5. Student level data by strand
6. Raw scores and percentages provided for each level of data

Is Not Useful

1. Reports are usually slow in getting to teachers
2. No indication as to “what” standards the students know and don’t know
3. No hint as to “why” students missed whatever they missed

High Stakes Tests Are Not Enough



- High stakes tests (HSTs) have an important function, but teachers cannot rely on HSTs as the sole source of measurement data
- High stakes test results do not normally provide data at the level necessary (i.e., **the standards level**) to **fully** inform instruction

Activity “C”



The next report is typical of a standards-based report delivered for today’s benchmark testing instruments. Considering you are in the same grade-level team as before and are attempting to accomplish the same task...

(this report was delivered within 3 days of administration)

1. **What aspects of this report are not useful to the team?**
2. **If you could have anything you wanted in this report, what would you want?**

Activity "C" Typical Benchmark Report



Strand	# Questions	% Correct
Written and Oral Lang Conventions	23	46.09%
Writing Strategies	7	50.48%
Entire Test	30	48.29%

Results Summary by Question / Standard

Ques #	% Correct	Standard #	Standard Description
1	23.33%	1.3	Grammar: Identify and correctly...
7	63.33%	1.4	Punctuation: Use commas in...
13	30.00%	1.6	Capitalize all proper nouns, words...

Results Also Reported by Classroom and by Student

Activity C—Pros and Wish List



Is Useful	Wish List
1. Timely Delivery	1. Tell me "why" the students aren't getting it
2. Data provided at Grade, Classroom, and Student Level	2. Tell me "what" to do to fix the problem
3. Disaggregation by strand and standard	3. Tell me how thoroughly the standard was taught (pacing)
4. Classroom level data for teacher by strand and standard	4. Let me easily sort the data any way I want
5. Student level data by strand and standard	5. Save teacher time (scoring assessment, etc.)
6. Standard description provided	6. Tell me where this standard is taught in my instructional program


Teacher-Friendly Data




To be truly teacher-friendly, standards-based assessment data must:

1. Be timely
 2. Avoid summative reporting
 3. Report by item and by standard
 4. Report by grade, class, & student level
 5. **Have full sorting capability**
 6. **Show the pacing status**
 7. **Show "why" students miss an item**
 8. **Show instructional context**
- (the **RED** criteria were not already available)



The Riverside County Solution 


Develop a **bank of items** tightly aligned to the state content standards, a **process** to provide a new level of teacher-directed analysis, and **software** to support the process

WHAT
Why & How Analysis for Teachers 

“WHAT” is a process that guides grade-level and content-level teams toward understanding “why” students miss items for particular standards and “how” to remediate. Based on:

- Teacher friendly data
- Top-down processing
- Wrong response analysis
- Pacing status reporting
- Supporting software tools

} **WHAT Process**

Top-Down Processing 

1 st Phase	Analyze assessment data at the <u>Grade-level team or Content-area team</u> level
	↓
2 nd Phase	Analyze assessment data at the <u>teacher or special group</u> level
	↓
3 rd Phase	Analyze assessment data at the <u>Individual student</u> level

Activity “D” Wrong Response Analysis



- The next slide shows a WHAT compliant multiple response item that measures a state content standard for 6th grade math
- Next there are three slides that report the results of the math item in three different ways—Simple+, Frequency Distribution, & Wrong Response Rationale
 1. Which do you prefer?
 2. Why do you prefer it?

6th Grade Math Item



Last year the cost of tuition for one semester at a certain college was \$1,200. If the tuition increases by 20%, what will the new cost be?

- A. \$240
- B. \$1,220
- C. \$1,440
- D. \$2,400

The distractors are indicative of the three most likely student cognitive disconnects

6th Grade Math Item Simple+ Report



Last year the cost of tuition for one semester at a certain college was \$1,200. If the tuition increases by 20%, what will the new cost be?

- A. \$240
- B. \$1,220
- C. \$1,440 **Correct Answer, 63% got it right**
- D. \$2,400

6th Grade Math Item Frequency Distribution



Last year the cost of tuition for one semester at a certain college was \$1,200. If the tuition increases by 20%, what will the new cost be?

- A. \$240 **33%**
- B. \$1,220 **3%**
- C. \$1,440 **63% Correct Answer**
- D. \$2,400 **1%**

6th Grade Standard Item with %'s & Wrong Response Rationale



Last year the cost of tuition for one semester at a certain college was \$1,200. If the tuition increases by 20%, what will the new cost be?

- A. \$240 **33%--Computed 20% but did not add it to original cost**
- B. \$1,220 **3%--Simply added 20 to original**
- C. \$1,440 **63%--Correct Answer**
- D. \$2,400 **1%--Doubled original tuition**

Wrong Response Rationale Report



- Gives Maximum Information
- Shows the percentage correct
- Shows the distribution of incorrect choices
- Provides rationale for incorrect responses
- Provides hints as to the nature of the specific cognitive disconnect that caused students to choose a specific incorrect response

First Grade Field Test Item



STEM: Mark the choice with the contraction that means are not.

- A. alright 8%
- B. can't 8%
- C. aren't 50%
- D. arenot 34%

High School ELA Item



The trees along this city street,
Save for the traffic and the trains,
Would make a sound as thin and sweet
As trees in country lanes.

STEM: In stanza one, what are the following words examples of?

“Trees,” “street,” “traffic,” and “trains”

- A. **assonance**
- B. **consonance**
- C. **onomatopoeia**
- D. **alliteration**

Rationale



- Rationale A: **Student confused repetition of vowel sounds with repetition of consonant sounds**
- Rationale B: **Correct answer**
- Rationale C: **Either student did not know how to proceed with the question or they guessed without considering the question**
- Rationale D: **Student confused repetition of initial consonants with repetition of consonants present in other areas of the word. Not clear on the distinction between alliteration and consonance**

WHAT Pacing Status Colors



- Color Code
 - **RED = Standard should have been mastered**
 - **Yellow = Standard has been introduced and practiced**
 - **Green = Standard has only been introduced**
 - **Blue = Standard is unexposed**

Supporting Software



- Warehouses and analyzes all types of assessment and demographic data
- Provides the delivery mechanism for the assessments (for both teachers “on call” and benchmark “preplanned” versions)
 - Scannable mode
 - On line mode
- Generates reports in any format for all possible levels

Activity E WHAT Process Demonstration



- We'll walk through the same process a grade-level or content-level team would use to analyze data from a recently administered standards-based, WHAT-compliant benchmark assessment
- Use the provided handouts to follow along and participate as I guide the process with the Powerpoint
- Our analysis will be abbreviated, but will hit the essentials
- In an actual WHAT process analysis, the team would inspect each standard
- After the team analysis (Phase I), the teachers would work through their class-level data (Phase II) and then target individual students (Phase III) as required

INSPECT						
WHAT By-Standard Report						
21X District 21X Middle School						
Schulcooke						
Number of Students: 506						
INSPECT 07						
DCR: X0400004.000000						
Test Date: May 2004						
Number of Questions						
English-Language Arts	Number of Questions	Answered	Correct	Incorrect	Blank	Omit
Reading	24	100.00 %	59.46 %	40.54 %	0.00 %	0.00 %
Library Fluency and Analysis	5	100.00 %	66.00 %	34.00 %	0.00 %	0.00 %
Reading Comprehension (Focus on Informational)	6	100.00 %	75.00 %	25.00 %	0.00 %	0.00 %
Materials	5	100.00 %	30.77 %	69.23 %	0.00 %	0.00 %
Word Analysis, Fluency, and Systematic Vocabulary	5	100.00 %	30.77 %	69.23 %	0.00 %	0.00 %
Development	8	100.00 %	40.00 %	60.00 %	0.00 %	0.00 %
Writing	3	100.00 %	66.67 %	33.33 %	0.00 %	0.00 %
Writing Strategies and Writing Applications	3	100.00 %	66.67 %	33.33 %	0.00 %	0.00 %
Written and Oral English-Language Conventions	5	100.00 %	60.00 %	40.00 %	0.00 %	0.00 %

Pacing Guide Color Legend			
Mastered	Practiced	Introduced	Unexposed

Standard	Number	Domain	Description	Questions Answered	Correct	Incorrect	Blank	Omit
1.1	R		Identify allusions, analogies, metaphors, and similes in prose and poetry.	6, 17	100.00 %	7.69 %	92.31 %	0.00 %
			Results for question 6	100.00 %	3.85 %	96.15 %	0.00 %	0.00 %
			Results for question 17	100.00 %	11.54 %	88.46 %	0.00 %	0.00 %
1.7	W		Revise writing to improve organization and word choice after checking the logic of the ideas and the precision of the vocabulary.	21	100.00 %	7.69 %	92.31 %	0.00 %
1.2	R		Use knowledge of Greek, Latin, and Anglo-Saxon roots and affixes to understand content area vocabulary.	1, 9	100.00 %	21.15 %	78.85 %	0.00 %
1.3	LC		Identify all parts of speech and types and structure of sentences.	20	100.00 %	30.77 %	69.23 %	0.00 %
3.4	R		Identify and analyze recurring themes across works (e.g., the value of bravery, health, and heroism; the effects of loneliness).	10	100.00 %	34.62 %	65.38 %	0.00 %
1.5	LC		Identify hyphens, dashes, brackets, and semicolons and use them correctly.	19	100.00 %	38.46 %	61.54 %	0.00 %
2.1	R		Understand and analyze the differences in structure and purpose between various categories of informational materials (e.g., textbooks, newspapers, instructional manuals, signs).	5	100.00 %	50.00 %	50.00 %	0.00 %

BACK

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Standard	Number	Domain	Description	Questions Answered	Correct	Incorrect	Blank	Omit
3.3	R		Analyze characterization as delineated through a character's thoughts, words, actions, patterns, and actions; the narrator's observations, and the thoughts, words, and actions of other characters.	11	100.00 %	50.00 %	50.00 %	0.00 %
2.5	R		Understand and explain the use of a simple mechanical device by following technical directions.	14	100.00 %	57.69 %	42.31 %	0.00 %
1.7	LC		Spell derivatives correctly by applying the spelling of bases and affixes.	24	100.00 %	65.38 %	34.62 %	0.00 %
2.2	R		Locate information by using a variety of consumer, workplace, and public documents.	2	100.00 %	75.00 %	25.00 %	0.00 %
3.1	R		Analyze the expressed purposes and characteristics of different forms of prose (e.g., short story, novel, novella, essay).	7	100.00 %	80.77 %	19.23 %	0.00 %
3.5	R		Analyze a range of responses to a literary work and determine the extent to which the literary elements in the work shaped those responses.	12	100.00 %	80.77 %	19.23 %	0.00 %
2.3	R		Analyze text that uses the cause-and-effect organizational pattern.	3	100.00 %	84.62 %	15.38 %	0.00 %
1.4	LC		Demonstrate the mechanics of writing (e.g., quotation marks, commas, and dependent clauses) and appropriate English usage (e.g., pronoun reference).	16	100.00 %	84.62 %	15.38 %	0.00 %
1.2	LC		Identify and use infinitives and participles and make clear references between pronouns and antecedents.	18	100.00 %	84.62 %	15.38 %	0.00 %
1.3	W		Use strategies of note-taking, outlining, and summarizing to impose structure on composition drafts.	23	100.00 %	84.62 %	15.38 %	0.00 %
2.6	R		Assess the adequacy, accuracy, and appropriateness of the author's evidence to support claims and assertions, noting instances of bias and ideation.	4	100.00 %	88.46 %	11.54 %	0.00 %
3.5	R		Contrast points of view (e.g., first and third person, limited and omniscient, subjective and objective) in narrative text and explain how they affect the overall theme of the work.	8	100.00 %	88.46 %	11.54 %	0.00 %
1.2	W		Support all statements and claims with anecdotes, descriptions, facts and statistics, and specific examples.	22	100.00 %	88.46 %	11.54 %	0.00 %
1.3	R		Clarify word meanings through the use of definition, example, restatement, or contrast.	13	100.00 %	96.15 %	3.85 %	0.00 %
2.4	R		Identify and trace the development of an author's argument, point of view, or perspective in text.	15	100.00 %	96.15 %	3.85 %	0.00 %

BACK

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INSPECT						
WHAT By-Standard Report						
21X District 21X Middle School						
Schulcooke						
Number of Students: 26						
INSPECT 07						
DCR: X0400004.000000						
Test Date: May 2004						
Number of Questions						
English-Language Arts	Number of Questions	Answered	Correct	Incorrect	Blank	Omit
Reading	24	100.00 %	59.46 %	40.54 %	0.00 %	0.00 %
Library Fluency and Analysis	5	100.00 %	66.00 %	34.00 %	0.00 %	0.00 %
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Word Analysis, Fluency, and Systematic Vocabulary	5	100.00 %	30.77 %	69.23 %	0.00 %	0.00 %
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Pacing Guide Color Legend			
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1.1	R		Identify allusions, analogies, metaphors, and similes in prose and poetry.	6, 17	100.00 %	7.69 %	92.31 %	0.00 %
1.7	W		Revise writing to improve organization and word choice after checking the logic of the ideas and the precision of the vocabulary.	21	100.00 %	7.69 %	92.31 %	0.00 %
1.2	R		Use knowledge of Greek, Latin, and Anglo-Saxon roots and affixes to understand content area vocabulary.	1, 9	100.00 %	21.15 %	78.85 %	0.00 %
			Results for question 1	100.00 %	25.00 %	75.00 %	0.00 %	0.00 %
			Results for question 9	100.00 %	19.23 %	80.77 %	0.00 %	0.00 %
1.3	LC		Identify all parts of speech and types and structure of sentences.	20	100.00 %	30.77 %	69.23 %	0.00 %
3.4	R		Identify and analyze recurring themes across works (e.g., the value of bravery, health, and heroism; the effects of loneliness).	10	100.00 %	34.62 %	65.38 %	0.00 %
1.5	LC		Identify hyphens, dashes, brackets, and semicolons and use them correctly.	19	100.00 %	38.46 %	61.54 %	0.00 %
2.1	R		Understand and analyze the differences in structure and purpose between various categories of informational materials (e.g., textbooks, newspapers, instructional manuals, signs).	5	100.00 %	50.00 %	50.00 %	0.00 %

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ITEM DETAIL: Word Analysis 1.1
6

What type of speech is used in the following quote?

A poem should be palpable and mute as a globed fruit
- Archibald MacLeish

% Responding	Answer	Rationale
4%	A. Simile	Correct answer
15%	B. Analogy	Student may not comprehend that the quote does not contain a developed comparison as required for an analogy.
4%	C. Metaphor	Student may not comprehend that the quote uses "as" rather than a direct comparison as would be required for metaphor.
77%	D. Hyperbole	Student may not comprehend that the quote does not contain exaggeration as would be required for hyperbole.

WHERE FOUND: [Instructional Materials](#)

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ITEM DETAIL: Word Analysis 1.1
17

What literary device is used in the following quote?

All the world's a stage.
- William Shakespeare

% Responding	Answer	Rationale
19%	A. Simile	Student may not comprehend that the quote does not contain a comparison using "like" or "as".
61%	B. Analogy	Student may not comprehend that the quote does not contain a developed comparison as required for an analogy.
12%	C. Metaphor	Correct Answer
8%	D. Hyperbole	Student may not comprehend that the quote does not contain exaggeration as would be required for hyperbole.

WHERE FOUND: [Instructional Materials](#)

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ITEM DETAIL: Word Analysis 1.2
1

What is the ANTONYM of the word insult?

% Responding	Answer	Rationale
27%	A. hurt	Student may have confused the definition of ANTONYM with the definition of SYNONYM.
40%	B. compliment	Correct answer
20%	C. comment	Student may have generalized rather than determining the ANTONYM or opposite, because an insult is a type of comment.
13%	D. help	Student may have chosen this response because it is the opposite of the word <i>hinder</i> which is similar to <i>insult</i> .

WHERE FOUND: [Instructional Materials](#)

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ITEM DETAIL: Word Analysis 1.2
9


From your knowledge of Greek roots and affixes, **bibliophile** is most likely to mean:

% Responding	Answer	Rationale
50%	A. library	Student may have chosen this response because <i>biblio</i> means book and they may have connected this to the word <i>library</i> , but did not consider the affix <i>phile</i> , meaning to love.
12%	B. nonreader	Student may have chosen this response because <i>reader</i> is related to <i>biblio</i> , meaning book, but they may have thought that the affix <i>phile</i> has a negative connotation.
19%	C. book lover	Correct answer
19%	D. compiler of notes	Student likely did not know the meaning of the root or affix.

WHERE FOUND: [Instructional Materials](#)

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Want to know more about WHAT?
Contact us in Riverside County, CA



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We'll be happy to talk to you about WHAT—contact any of us.
