## **TEXTBOOK REVIEW FORM**

## MATHEMATICS

## ALGEBRA II

Textbook/Series:			 
Edition	Copyright	Publisher	
Reviewed by:			
This form was based in par	rt on:		
Instructional Materials Analys Phase 3: Assessing Content A project of <b>The Charles A. Dana Cen</b> At the University of Texas a	Alignment to the Common	Core Standards for Mathematics	
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#### STANDARDS FOR MATHEMATICAL PRACTICE – MATHEMATICS – GRADE K-12 – OVERALL

Textbook/Series:				
Edition	Copyright	_ Publisher		_
OVERALL RATING:	[	Weak (1-2) Moderate (2-3) Strong (3-4)	Comments:	
<ol> <li>Make sense of problems a solving them. Summary/Justification/E</li> </ol>	-	Weak (1-2) Moderate (2-3) Strong (3-4)	<ol> <li>Reason abstractly and quantitatively. Summary/Justification/Evidence</li> </ol>	Weak (1-2)           Moderate (2-3)           Strong (3-4)
3. Construct viable argument: the reasoning of others. Summary/Justification/E	-	Weak (1-2) Moderate (2-3) Strong (3-4)	4. Model with mathematics. Summary/Justification/Evidence:	Weak (1-2) Moderate (2-3) Strong (3-4)
5. Use appropriate tools strat Summary/Justification/E	egically. vidence:	Weak (1-2) Moderate (2-3) Strong (3-4)	<ol> <li>Attend to precision.</li> <li>Summary/Justification/Evidence:</li> </ol>	Weak (1-2) Moderate (2-3) Strong (3-4)
7. Look for and make use of s Summary/Justification/E		Weak (1-2) Moderate (2-3) Strong (3-4)	8. Look for and express regularity in repeated reasoning. Summary/Justification/Evidence:	Weak (1-2)           Moderate (2-3)           Strong (3-4)

Weak: This is the lowest rating a book can receive. In general, a book that was rated as "weak" scored mostly 1s and 2s on a 4-point scale.

Moderate: This is the middle rating a book can receive. In general, a book that was rated as "moderate" scored mostly 2s and 3s on a 4-point scale.

Strong: This is the highest rating a book can receive. In general, a book that was rated as "strong" scored mostly 3s and 4s on a 4-point scale.

#### Documenting Alignment to the Standards for Mathematical Practice

Mathematically proficient students:

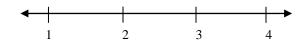
#### 1. Make sense of problems and persevere in solving them.

These students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. These students consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to obtain the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solve complex problems and identify correspondences between different approaches.

Indicate the chapter(s), sections, and/or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

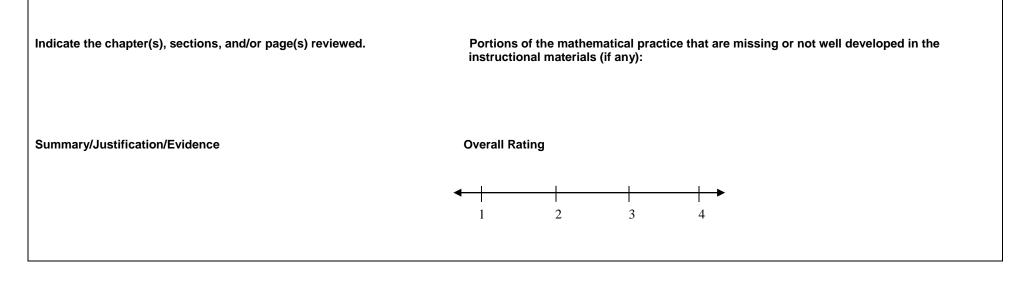


# Documenting Alignment to the Standards for Mathematical Practice

Mathematically proficient students:

#### 2. Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships. One is the ability to *decontextualize*, to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents. The second is the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.



#### Documenting Alignment to the Standards for Mathematical Practice

Mathematically proficient students:

#### **3.** Construct viable arguments and critique the reasoning of others.

These students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. These students justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments; distinguish correct logic or reasoning from that which is flawed; and, if there is a flaw in an argument, explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until the middle or upper grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

Indicate the chapter(s), sections, and/or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence



## Documenting Alignment to the Standards for Mathematical Practice

Mathematically proficient students:

#### 4. Model with mathematics.

These students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, students might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, students might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts, and formulas and can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

Indicate the chapter(s), sections, and/or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence



## Documenting Alignment to the Standards for Mathematical Practice

Mathematically proficient students:

#### 5. Use appropriate tools strategically.

Mathematically proficient students consider available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a Web site, and use these to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

Indicate the chapter(s), sections, and/or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence



## Documenting Alignment to the Standards for Mathematical Practice

Mathematically proficient students:

#### 6. Attend to precision.

These students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. Mathematically proficient students are careful about specifying units of measure and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, and express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

Indicate the chapter(s), sections, and/or page(s) reviewed.

Portions of the mathematical practice that are missing or not well developed in the instructional materials (if any):

Summary/Justification/Evidence

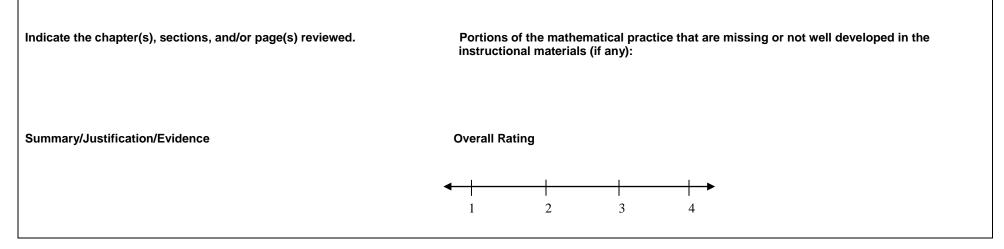


## Documenting Alignment to the Standards for Mathematical Practice

Mathematically proficient students:

#### 7. Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see  $7 \times 8$  equals the well-remembered  $7 \times 5 + 7 \times 3$ , in preparation for learning about the distributive property. In the expression  $x^2 + 9x + 14$ , older students can see the 14 as  $2 \times 7$  and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. These students also can pause and reflect for an overview and shift perspective. They can observe the complexities of mathematics, such as some algebraic expressions as single objects or as being composed of several objects. For example, they can see  $5 - 3(x - y)^2$  as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers *x* and *y*.

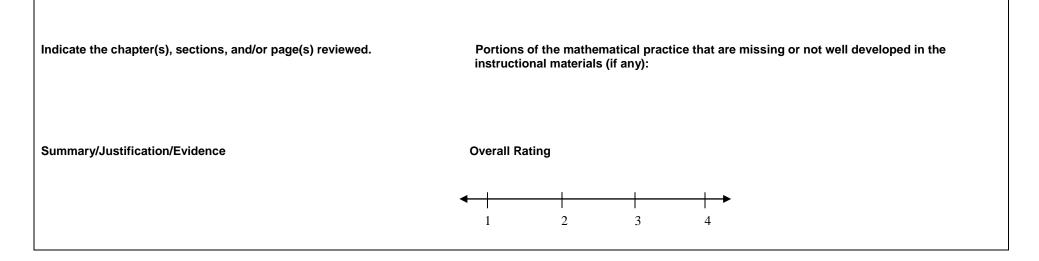


# Documenting Alignment to the Standards for Mathematical Practice

Mathematically proficient students:

#### 8. Look for and express regularity in repeated reasoning.

They notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation (y - 2)/(x - 1) = 3. Noticing the regularity in the way terms cancel when expanding (x - 1)(x + 1),  $(x - 1)(x^2 + x + 1)$ , and  $(x - 1)(x^3 + x^2 + x + 1)$  might lead them to the general formula for the sum of a geometric series. As students work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details and continually evaluate the reasonableness of their intermediate results.



#### TEXTBOOK REVIEW FORM – MATHEMATICS – OVERALL COLLEGE- AND CAREER-READY STANDARDS & OTHER CRITERIA – GRADE K

Textbook/Series:			
Edition Copyright	Publisher		
OVERALL RATING:	Weak (1-2)           Moderate (2-3)           Strong (3-4)	Important Mathematical Ideas: Summary/Justification/Evidence:	Weak (1-2) Moderate (2-3) Strong (3-4)
Skills and Procedures: Summary/Justification/Evidence:	Weak (1-2)           Moderate (2-3)           Strong (3-4)	Mathematical Relationships: Summary/Justification/Evidence	Weak (1-2) Moderate (2-3) Strong (3-4)
Content: Summary/Justification/Evidence:	Weak (1-2)           Moderate (2-3)           Strong (3-4)	Instruction: Summary/Justification/Evidence:	Weak (1-2) Moderate (2-3) Strong (3-4)
Assessment: Summary/Justification/Evidence:	Weak (1-2)           Moderate (2-3)           Strong (3-4)	Technology: Summary/Justification/Evidence:	Weak (1-2)           Moderate (2-3)           Strong (3-4)

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The Charles A. Dana Center

Students will:

#### **NUMBER AND QUANTITY**

Perform arithmetic operations with complex numbers.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.			
1. Know there is a complex number i such that $i2 = -1$ , and every complex number has the form a + bi with a and b real. [N-CN1]	Important Mathematical Ideas			
	Skills and Procedures			
	Mathematical Relationships			
	Summary/Justification/Evidence			
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed			
	in the instructional materials (if any):			
	Overall Rating			

Students will:

### **NUMBER AND QUANTITY**

Perform arithmetic operations with complex numbers.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.			
<ol> <li>Use the relation i2 = -1 and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers. [N-CN2]</li> </ol>	Important Mathematical Ideas			
	Skills and Procedures			
	Mathematical Relationships     Image: Constraint of the second seco			
	Summary/Justification/Evidence			
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):			
	Overall Rating			

Students will:

#### **NUMBER AND QUANTITY**

Use complex numbers in polynomial identities and equations. (Polynomials with real coefficients.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.				
3. Solve quadratic equations with real coefficients that have complex solutions. [N-CN7]	Important Mathematical Ideas 1 2 3 4	*			
	Skills and Procedures	*			
	Mathematical Relationships 1 2 3 4	►			
	Summary/Justification/Evidence				
Indicate the chapter(s), sections, and/or page(s) reviewed.					
	Portions of the domain, cluster, and standard that are missing or not well develop in the instructional materials (if any):	Ded			
	Overall Rating 1 2 3 4	*			

Students will:

### **NUMBER AND QUANTITY**

Use complex numbers in polynomial identities and equations. (Polynomials with real coefficients.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.				
4. (+) Extend polynomial identities to the complex numbers. [N-CN8]	Important Mathematical Ideas				
Example: Rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$ .	1 2 3 4				
	Skills and Procedures				
	1 2 3 4				
	Mathematical Relationships				
	1 2 3 4				
	Summary/Justification/Evidence				
ndicate the chapter(s), sections, and/or page(s) reviewed.					
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):				
	Overall Rating				

Students will:

### **NUMBER AND QUANTITY**

Use complex numbers in polynomial identities and equations. (Polynomials with real coefficients.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.		
5. (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials. [N-CN9]	Important Mathematical Ideas		
	Skills and Procedures 1 2 3 4		
	Mathematical Relationships 1 2 3 4		
	Summary/Justification/Evidence		
Indicate the chapter(s), sections, and/or page(s) reviewed.			
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):		
	Overall Rating		

Students will:

#### ALGEBRA

Interpret the structure of expressions. (Polynomial and rational.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.				
<ol> <li>Interpret expressions that represent a quantity in terms of its context.* [A-SSE1]</li> </ol>	Important Mathematical Ideas				
	Skills and Procedures				
	Mathematical Relationships				
	Summary/Justification/Evidence				
Indicate the chapter(s), sections, and/or page(s) reviewed.					
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):				
	Overall Rating				

Students will:

#### ALGEBRA

Interpret the structure of expressions. (Polynomial and rational.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.				
a. Interpret parts of an expression such as terms, factors, and coefficients. [A-SSE1a]	Important Mathematical Ideas				
	Skills and Procedures				
	Mathematical Relationships     Image: Constraint of the second seco				
	Summary/Justification/Evidence				
Indicate the chapter(s), sections, and/or page(s) reviewed.					
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):				
	Overall Rating				

Students will:

#### ALGEBRA

Interpret the structure of expressions. (Polynomial and rational.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.			
<ul> <li>b. Interpret complicated expressions by viewing one or more of their parts as a single entity. [A-SSE1b]</li> <li>Example: Interpret P(1+r)n as the product of P and a factor not</li> </ul>	Important Mathematical Ideas 1 2 3 4			
depending on P.	Skills and Procedures			
	Mathematical Relationships			
	Summary/Justification/Evidence			
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):			
	Overall Rating			

Students will:

#### ALGEBRA

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.				
ldeas	1	2	3	4
←	1	2	3	<b>↓</b> 4
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/Evidence				
, cluster, and star erials (if any):	andard th	that are miss	sing or not we	∍II develope
		2	3	
	•	<b>←</b>  1	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	↓ ↓ ↓     1 2 3

Students will:

#### ALGEBRA

Write expressions in equivalent forms to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
8. Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems.* [A-SSE4]	Important Mathematical Ideas 1 2 3 4
Example: Calculate mortgage payments.	Skills and Procedures
	Mathematical Relationships
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating
	1 2 5 4

Students will:

### ALGEBRA

Perform arithmetic operations on polynomials. (Beyond quadratic.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
9. Understand that polynomials form a system analogous to the integers; namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. [A-APR1]	Important Mathematical Ideas
	Skills and Procedures 1 2 3 4
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

### ALGEBRA

Understand the relationship between zeros and factors of polynomials.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
10. Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a, the remainder on division by $x - a$ is $p(a)$ , so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$ . [A-APR3]	Important Mathematical Ideas
	Skills and Procedures
	Mathematical Relationships     Image: Constraint of the second seco
	Summary/Justification/Evidence
ndicate the chapter(s), sections, and/or page(s) reviewed.	
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

### ALGEBRA

Understand the relationship between zeros and factors of polynomials.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
11. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. [A-APR3]	Important Mathematical Ideas 1 2 3 4
	Skills and Procedures
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating         Image: Constraint of the second

Students will:

### ALGEBRA

Use polynomial identities to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
<ul> <li>12. Prove polynomial identities and use them to describe numerical relationships. [A-APR4]</li> <li>Example: The polynomial identity (x2 + y2)2 = (x2 - y2)2 + (2xy)2</li> </ul>	Important Mathematical Ideas 1 2 3 4
can be used to generate Pythagorean triples.	Skills and Procedures 1 2 3 4
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

### ALGEBRA

Use polynomial identities to solve problems.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
<ul> <li>13. (+) Know and apply the Binomial Theorem for the expansion of (x + y)n in powers of x and y for a positive integer n, where x and y are any numbers, with coefficients determined, for example, by Pascal's Triangle. (The Binomial Theorem can be proved by mathematical induction or by a combinatorial argument.) [A-APR5]</li> <li>Indicate the chapter(s), sections, and/or page(s) reviewed.</li> </ul>	Important Mathematical Ideas
	Skills and Procedures 1 2 3 4
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

### ALGEBRA

Rewrite rational expressions. (Linear and quadratic denominators.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
<ul> <li>14. Rewrite simple rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or for the more complicated examples, a computer algebra system. [A-APR6]</li> <li>Indicate the chapter(s), sections, and/or page(s) reviewed.</li> </ul>	Important Mathematical Ideas
	Skills and Procedures
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

### ALGEBRA

Rewrite rational expressions. (Linear and quadratic denominators.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
15. (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and	Important Mathematical Ideas
divide rational expressions. [A-APR7]	Skills and Procedures
	Mathematical Relationships
	Summary/Justification/Evidence
ndicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well develope in the instructional materials (if any):
	Overall Rating
	1 2 3 4

Students will:

## ALGEBRA

Create equations that describe numbers or relationships. (Equations using all available types of expressions, including simple root functions.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
<ol> <li>Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. [A-CED1]</li> </ol>	Important Mathematical Ideas 1 2 3 4
	Skills and Procedures 1 2 3 4
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

## ALGEBRA

Create equations that describe numbers or relationships. (Equations using all available types of expressions	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
17. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. [A-CED2]	Important Mathematical Ideas
	Skills and Procedures 1 2 3 4
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed
	in the instructional materials (if any):
	Overall Rating

Students will:

## ALGEBRA

Create equations that describe numbers or relationships. (Equations using all available types of expressions	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
<ol> <li>Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. [A-CED3]</li> </ol>	Important Mathematical Ideas
Example: Represent inequalities describing nutritional and cost constraints on combinations of different foods.	Skills and Procedures
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

### ALGEBRA

Create equations that describe numbers or relationships. (Equations using all available types of expressions, including simple root functions.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
<ul><li>19. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. [A-CED4]</li><li>Example: Rearrange Ohm's law V = IR to highlight resistance R.</li></ul>	Important Mathematical Ideas
	Skills and Procedures 1 2 3 4
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

## ALGEBRA

#### Reasoning With Equations and Inequalities

Understand solving equations as a process of reasoning and explain the reasoning. (Simple rational and radical.)	Summary and documentation of how the domain, cluster, and Cite examples from the materials.	standard are met.
20. Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. [A-REI2]	Important Mathematical Ideas 1 2	3 4
	Skills and Procedures	3 4
	Mathematical Relationships 1 2	3 4
	Summary/Justification/Evidence	
Indicate the chapter(s), sections, and/or page(s) reviewed.		
	Portions of the domain, cluster, and standard that are missing in the instructional materials (if any):	or not well developed
	Overall Rating	3 4

Students will:

## ALGEBRA

#### Reasoning With Equations and Inequalities

Represent and solve equations and inequalities graphically. (Combine polynomial, rational, radical, absolute value, and exponential functions.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
21. Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$ ; find the solutions approximately, e.g., using technology to	Important Mathematical Ideas 1 2 3 4
graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.* [A-REI11]	Skills and Procedures
	Mathematical Relationships     Image: Constraint of the second seco
	Summary/Justification/Evidence
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
Indicate the chapter(s), sections, and/or page(s) reviewed.	
	Overall Rating

Students will:

#### **FUNCTIONS**

Interpreting Functions

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
Important Mathematical Ideas 1 2 3 4
Skills and Procedures
Mathematical Relationships     Image: Constraint of the second seco
Summary/Justification/Evidence
Portions of the domain, cluster, and standard that are missing or not well develope
in the instructional materials (if any):

Students will:

#### **FUNCTIONS**

Interpreting Functions

Interpret functions that arise in applications in terms of the context. (Emphasize selection of appropriate models.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
<ul> <li>23. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.* [F-IF5] Example: If the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.</li> <li>Indicate the chapter(s), sections, and/or page(s) reviewed.</li> </ul>	Important Mathematical Ideas
	Skills and Procedures
	Mathematical Relationships
	Summary/Justification/Evidence
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

## **FUNCTIONS**

Interpret functions that arise in applications in terms of the context. (Emphasize selection of appropriate models.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
24. Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.* [F-IF6]	Important Mathematical Ideas
	Skills and Procedures 1 2 3 4
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
	Portions of the domain, cluster, and standard that are missing or not well developed
Indicate the chapter(s), sections, and/or page(s) reviewed.	in the instructional materials (if any):
	Overall Rating

Students will:

## **FUNCTIONS**

Analyze functions using different representations. (Focus on using key features to guide selection of appropriate type of model function.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
25. Graph functions expressed symbolically, and show key features of the graph, by hand in simple cases and using technology for more complicated cases.* [F-IF7]	Important Mathematical Ideas 1 2 3 4
	Skills and Procedures
	Mathematical Relationships 1 2 3 4
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

## **FUNCTIONS**

Analyze functions using different representations. (Focus on using key features to guide selection of appropriate type of model function.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
a. Graph square root, cube root, and piecewise-defined functions, including	Important Mathematical Ideas
step functions and absolute value functions. [F-IF7b]	1 2 3 4
	Skills and Procedures
	1 2 3 4
	Mathematical Relationships
	1 2 3 4
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	
	Portions of the domain, cluster, and standard that are missing or not well develope in the instructional materials (if any):
	Overall Rating

Students will:

## **FUNCTIONS**

Analyze functions using different representations. (Focus on using key features to guide selection of appropriate type of model function.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
b. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. [F-IF7c]	Important Mathematical Ideas
	Skills and Procedures 1 2 3 4
	Mathematical Relationships
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	
	Portions of the domain, cluster, and standard that are missing or not well develope in the instructional materials (if any):
	Overall Rating
	1 2 3 4

Students will:

## **FUNCTIONS**

Analyze functions using different representations. (Focus on using key features to guide selection of appropriate type of model function.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
c. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. [F-IF7e]	Important Mathematical Ideas 1 2 3 4
	Skills and Procedures
	Mathematical Relationships 1 2 3 4
Indicate the chapter(s), sections, and/or page(s) reviewed.	Summary/Justification/Evidence
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating
	1 2 3 4

Students will:

## **FUNCTIONS**

Analyze functions using different representations. (Focus on using key features to guide selection of appropriate type of model function.)	Summary and documentation of how Cite examples from the materials.	w the	e domain, clu	ster, and sta	andard are n	net.
26. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. [F-IF8]	Important Mathematical Ideas	•	1	2	3	<b>↓</b> → 4
	Skills and Procedures	•	1	2	3	<b>↓</b> → 4
	Mathematical Relationships		 1	2	3	<b>↓</b> → 4
	Summary/Justification/Evidence					
Indicate the chapter(s), sections, and/or page(s) reviewed.						
	Portions of the domain, cluster, and in the instructional materials (if any)		ndard that are	e missing or	not well dev	veloped
	Overall Rating	•	1	2	3	<b>↓</b> → 4

Students will:

## **FUNCTIONS**

Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.			
Important Mathematical Ideas			
Skills and Procedures			
Mathematical Relationships 1 2 3 4			
Summary/Justification/Evidence			
Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):	ł		
Overall Rating 1 2 3 4			
	Cite examples from the materials. Important Mathematical Ideas 1 2 3 4 Skills and Procedures 1 2 3 4 Mathematical Relationships 1 2 3 4 Mathematical Relationships 1 2 3 4 Summary/Justification/Evidence Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any): Overall Rating		

Students will:

## **FUNCTIONS**

## **Building Functions**

Build a function that models a relationship between two quantities. (Include all types of functions studied.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
<ul><li>28. Combine standard function types using arithmetic operations. [F-BF1b]</li><li>Example: Build a function that models the temperature of a cooling body by adding a constant function to a decaying</li></ul>	Important Mathematical Ideas
exponential, and relate these functions to the model.	Skills and Procedures
	Mathematical Relationships
Indicate the chapter(s), sections, and/or page(s) reviewed.	Summary/Justification/Evidence
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

## **FUNCTIONS**

## **Building Functions**

Build new functions from existing functions. (Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types.)	Summary and documentation of how Cite examples from the materials.	v the	domain, clu	ster, and sta	andard are m	iet.
29. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$ , k $f(x)$ , $f(kx)$ , and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an	Important Mathematical Ideas		1	2	3	<b>↓</b> → 4
explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. [F-BF3]	Skills and Procedures	<b>↓ _ ↓</b> 1	1	2	3	<b>↓</b> → 4
	Mathematical Relationships	<b></b>   ]	1	2	3	<b>↓</b> → 4
Indicate the chapter(s), sections, and/or page(s) reviewed.	Summary/Justification/Evidence					
	Portions of the domain, cluster, and in the instructional materials (if any):		dard that are	e missing or	not well dev	reloped
	Overall Rating	<b>↓ ↓</b>	1	2	3	<b>+</b> → 4

Students will:

## FUNCTIONS

## **Building Functions**

Build new functions from existing functions. (Include simple radical, rational, and exponential functions; emphasize common effect of each transformation across function types.)	Summary and documentation of h Cite examples from the materials.	ow the domair	n, cluster, an	d standard a	re met.
<ul> <li>30. Solve an equation of the form f(x) = c for a simple function f that has an inverse, and write an expression for the inverse. [F-BF4a] Example: f(x) = 2x3 or f(x) = (x+1)/(x-1) for x ≠ 1.</li> </ul>	Important Mathematical Ideas	<b>←</b>  1	2	3	4
	Skills and Procedures	<b>←</b>  1	2	3	4
	Mathematical Relationships	<b>←</b>  1	2	3	4
	Summary/Justification/Evidence				
Indicate the chapter(s), sections, and/or page(s) reviewed.					
	Portions of the domain, cluster, ar in the instructional materials (if an		at are missin	ig or not well	l developed
	Overall Rating	< + 1	2	3	4

Students will:

## FUNCTIONS

## Linear, Quadratic, and Exponential Models\*

Construct and compare linear, quadratic, and exponential models and solve problems. (Logarithms as solutions for exponentials.)	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.				
31. For exponential models, express as a logarithm the solution to abct = d where a, c, and d are numbers, and the base b is 2, 10, or e; evaluate the logarithm using technology. [F-LE4]	Important Mathematical Ideas 1 2 3 4				
	Skills and Procedures 1 2 3 4				
	Mathematical Relationships 1 2 3 4				
	Summary/Justification/Evidence				
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well developed				
	in the instructional materials (if any):				
	Overall Rating				

Students will:

# **STATISTICS AND PROBABILITY**

Interpreting Categorical and Quantitative Data

Summarize, represent, and interpret data on a single count or measurement variable.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
32. Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use	Important Mathematical Ideas 1 2 3 4
calculators, spreadsheets, and tables to estimate areas under the normal curve. [S-ID4]	Skills and Procedures 1 2 3 4
	Mathematical Relationships 1 2 3 4
Indicate the chapter(s), sections, and/or page(s) reviewed.	Summary/Justification/Evidence
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating 1 2 3 4

Students will:

# **STATISTICS AND PROBABILITY**

Understand and evaluate random processes underlying statistical experiments.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.
33. Understand statistics as a process for making inferences about population parameters based on a random sample from that population. [S-IC1]	Important Mathematical Ideas
	Skills and Procedures
	Mathematical Relationships
	Summary/Justification/Evidence
Indicate the chapter(s), sections, and/or page(s) reviewed.	
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):
	Overall Rating

Students will:

# **STATISTICS AND PROBABILITY**

Understand and evaluate random processes underlying statistical experiments.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.					
generating process, e.g., using simulation. [S-IC2] Example: A model says a spinning coin falls heads up with probability	Important Mathematical Ideas 1 2 3 4					
0.5. Would a result of 5 tails in a row cause you to question the model? Indicate the chapter(s), sections, and/or page(s) reviewed.	Skills and Procedures					
	Mathematical Relationships					
	Summary/Justification/Evidence					
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):					
	Overall Rating					

Students will:

# **STATISTICS AND PROBABILITY**

Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.						
35. Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. [S-IC3]	Important Mathematical Ideas 1 2 3	<b>↓</b> → 4					
	Skills and Procedures 1 2 3	<b>↓</b> → 4					
	Mathematical Relationships 1 2 3	<b>↓</b> → 4					
	Summary/Justification/Evidence						
Indicate the chapter(s), sections, and/or page(s) reviewed.							
	Portions of the domain, cluster, and standard that are missing or not well dev in the instructional materials (if any):	veropeu					
	Overall Rating 1 2 3	<b>↓</b> → 4					

Students will:

# **STATISTICS AND PROBABILITY**

<ul> <li>Make inferences and justify conclusions from sample surveys</li> <li>36. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling. [S-IC4]</li> </ul>	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.					
	Important Mathematical Ideas 1 2 3 4					
	Skills and Procedures					
	Mathematical Relationships					
	Summary/Justification/Evidence					
ndicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, and standard that are missing or not well develope in the instructional materials (if any):					
	Overall Rating					

Students will:

# **STATISTICS AND PROBABILITY**

Make inferences and justify conclusions from sample surveys	Summary and documentation of h Cite examples from the materials.	Summary and documentation of how the domain, cluster, and standard are met. Site examples from the materials.					
37. Use data from a randomized experiment to compare two treatments; use	Important Mathematical Ideas	<					
simulations to decide if differences between parameters are significant. [S-IC5]		1	2	3	4		
	Skills and Procedures	<b>↓</b>	2				
		1	2	3	4		
	Mathematical Relationships	<b>▲</b>   1	2	3	4		
	Summary/Justification/Evidence						
Indicate the chapter(s), sections, and/or page(s) reviewed.	Portions of the domain, cluster, ar in the instructional materials (if ar		at are missir	ng or not wel	l develope		
	Overall Rating						
		1	2	3	4		

Students will:

# **STATISTICS AND PROBABILITY**

Make inferences and justify conclusions from sample surveys	Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.					
38. Evaluate reports based on data. [S-IC6]	Important Mathematical Ideas					
	Skills and Procedures					
	Mathematical Relationships 1 2 3 4					
	Summary/Justification/Evidence					
ndicate the chapter(s), sections, and/or page(s) reviewed.						
	Portions of the domain, cluster, and standard that are missing or not well develope in the instructional materials (if any):					
	Overall Rating					

Students will:

# **STATISTICS AND PROBABILITY**

### Using Probability to Make Decisions

Use probability to evaluate outcomes of decisions. (Include more complex situations.)	ex Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.						
<ol> <li>(+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator). [S-MD6]</li> </ol>	Important Mathematical Ideas						
	Skills and Procedures						
	Mathematical Relationships 1 2 3 4						
	Summary/Justification/Evidence						
ndicate the chapter(s), sections, and/or page(s) reviewed.							
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):						
	Overall Rating						

Students will:

## **STATISTICS AND PROBABILITY**

## Using Probability to Make Decisions

Use probability to evaluate outcomes of decisions. (Include more complex situations.)	Ex Summary and documentation of how the domain, cluster, and standard are met. Cite examples from the materials.							
<ul><li>40. (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game). [S-MD7]</li></ul>	Important Mathematical Ideas	•						
	Skills and Procedures	•						
	Mathematical Relationships 1 2 3 4	•						
	Summary/Justification/Evidence							
Indicate the chapter(s), sections, and/or page(s) reviewed.								
	Portions of the domain, cluster, and standard that are missing or not well developed in the instructional materials (if any):							
	Overall Rating	*						

#### Documenting Alignment to Additional Criteria and Indicators

#### Content

Criter	ia and Indicators	Summary and documentation or met. Cite examples from the ma			al criteria	and indica	itors are
1.	Content is designed for students of varied abilities and understanding.	Overall Rating	←	1	2	3	<b>↓</b> ► 4
2.	Content is free of bias and/or controversial information.	Overall Rating	<	1	2	3	<b>↓</b> →→
3.	Content includes strategies for vocabulary instruction and graphic organizers.	Overall Rating	4	<u> </u>	2	3	↓►
4.	Content includes assignments that encourage integration of other content areas to support a math concept/skill.	Overall Rating	•	<u> </u>	2	3	<b>↓</b> 4
ndicat	e the chapter(s), sections, and/or page(s) reviewed.	Summary/Justification/Evidence:					

#### Documenting Alignment to Additional Criteria and Indicators

Technology

		Summary and documentation of how the additional criteria and indicators ar met. Cite examples from the materials.					tors are
1.	Technology support and suggestions for appropriate use of multimedia resources are provided.	Overall Rating	•	1	2	3	<b>→</b>
2.	Technology is integrated with student activities so that students collect, organize, analyze, and present data.	Overall Rating	←	1	2	3	<b>→</b>
3.	Textbook and supplemental Contents are available online and/or on CD-ROM.	Overall Rating	•	1	2	3	<b>↓ →</b> 4
Indic	ate the chapter(s), sections, and/or page(s) reviewed.	Summary/Justification/Evidence:					

#### Documenting Alignment to Additional Criteria and Indicators

#### Assessment

		Summary and documentation of met. Cite examples from the ma			al criteria :	and indica	tors are
1.	Some assessments are designed to measure student understanding above the knowledge level.	Overall Rating	<	1	2	3	<b>↓</b> → 4
2.	Guidance is provided to teacher regarding how assessment information can be used to inform instruction.	Overall Rating	•	1	2	3	<b>↓</b> → 4
3.	Rubrics are provided for grading some assignments.	Overall Rating	•	1	2	3	<b>↓</b> → 4
4.	Some opportunities are provided for students to check their own understanding.	Overall Rating	•	1	2	3	<b>↓</b> →→
Indicate t	he chapter(s), sections, and/or page(s) reviewed.	Summary/Justification/Evidence:					

#### Documenting Alignment to Additional Criteria and Indicators

### Assessment (Continued)

Criteria and Indicators		Summary and documentation met. Cite examples from the			al criteri	a and ind	icators ar	e
5.	Assessment activities examine the extent to which students can apply information to situations that require reasoning and creative thinking.	Overall Rating	•	1	2	3	<b>↓</b> → 4	
6.	Multiple means of assessments are used, informal as well as formal.	Overall Rating	•	1	2	3	4	
7.	Conceptual understanding and procedural knowledge are frequently assessed through tasks that ask students to apply information about a given concept in novel situations.	Overall Rating	•	1	2	3	4	
Indicate t	he chapter(s), sections, and/or page(s) reviewed.	Summary/Justification/Evidenc	:e:					

#### Documenting Alignment to Additional Criteria and Indicators

Instruction

Criteria and Indicators		Summary and documentation of how the additional criteria and indicators are met. Cite examples from the materials.						
1.	Teacher guide provides suggestions for how to demonstrate/model skills or use of knowledge.	Overall Rating	•	1	2	3		•
2.	Teacher guide offers alternative instructional strategies for advanced learners, struggling learners, ELL and Sp. Ed.	Overall Rating	←	1	2	3	4	•
3.	Teacher guide suggests multiple opportunities for students to demonstrate understanding.	Overall Rating	<	1	2	3	<b>↓</b> 4	•
4.	Teacher guide provides opportunities for guided practice and scaffolded support.	Overall Rating	←	1	2	3	4	•
5.	Teacher guide includes suggestions to diagnose student errors, explanations of how these errors may be corrected, and how to further develop student ideas.	Overall Rating	•	1	2	3	<b> </b> 4	•
ndicate	e the chapter(s), sections, and/or page(s) reviewed.	Summary/Justification/Evidence:						