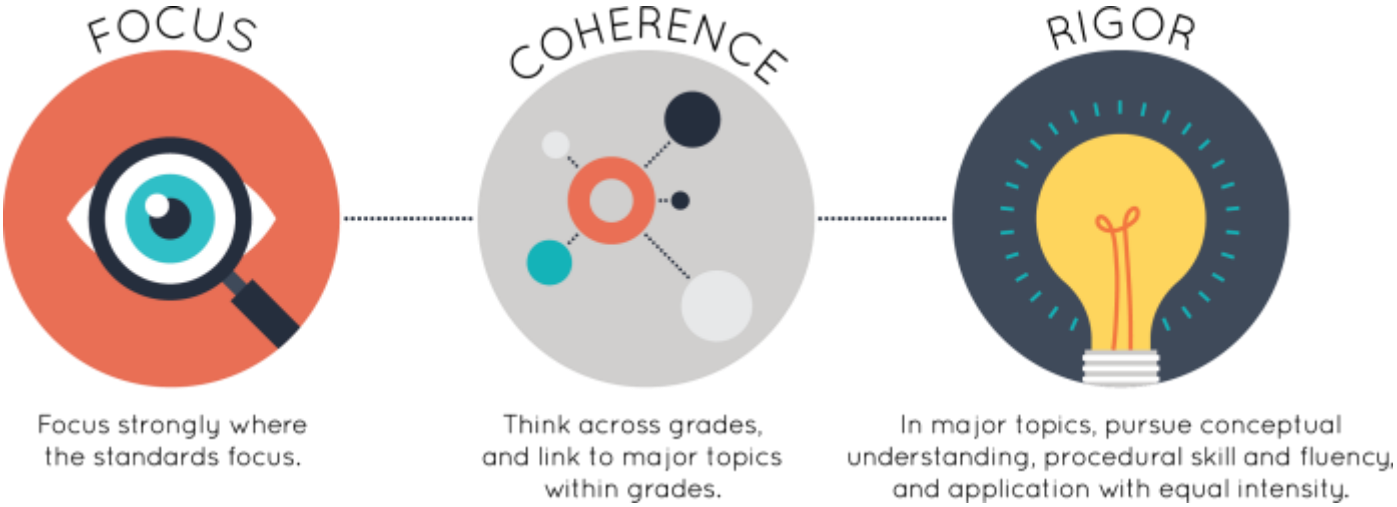
DEPARTMENT of EDUCATION
Louisiana Believes

Assessment Evaluation Review for Alignment in Mathematics Grades K – HS (AET)

BENCHMARK ASSESSMENTS

Strong mathematics instruction contains the following elements:



Title: **CASE Benchmark Assessments, Math**

Grade/Course: **3 and 5**

Publisher: **TE21, Inc.**

Copyright: **2017**

Overall Rating: **Tier I, Exemplifies quality**

Tier I, Tier II, Tier III Elements of this review:

STRONG	WEAK
1. Alignment of Test Items (Non-Negotiable)	
2. Focus on Major Work (Non-Negotiable)	
3. Focus (Non-Negotiable)	
4. Rigor and Balance (Non-Negotiable)	
5. Practice-Content Connections	
6. Calling for Variety in Item Type, Student Work	
7. Constructing Forms Without Cueing Solution Proc	
8. Quality Materials	

Each set of submitted materials was evaluated for alignment with the standards beginning with a review of the indicators for the non-negotiable criteria. If those criteria were met, a review of the other criteria ensued.

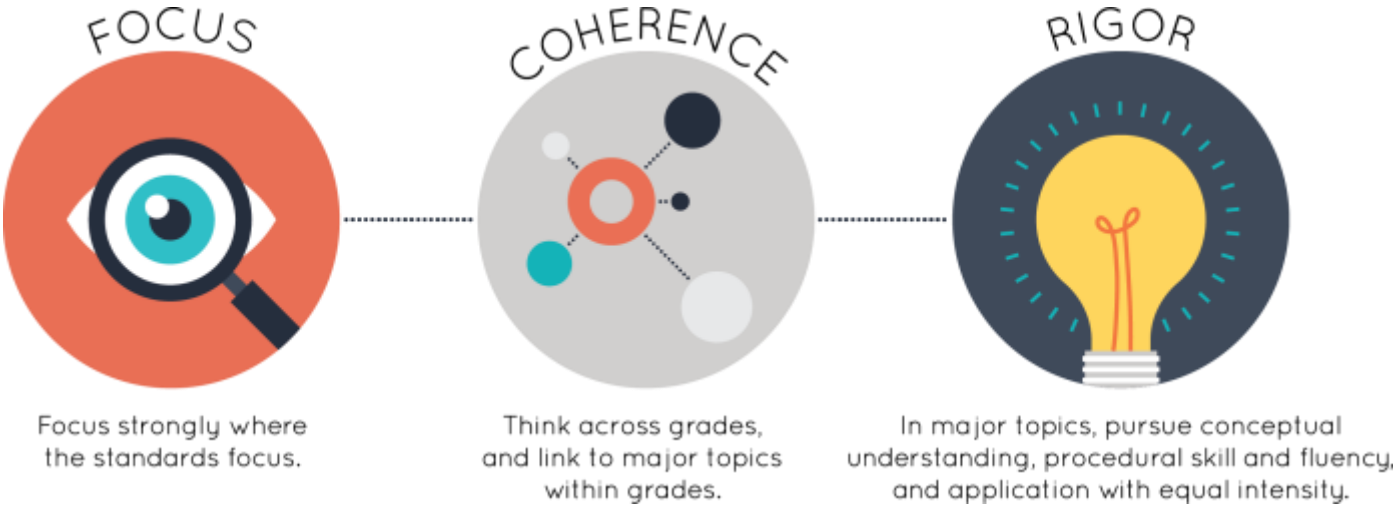
Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 8.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria, but at least one "No" for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

Click below for complete grade-level reviews:

Grade 3 (Tier 1) Grade 5 (Tier 1)

** The criteria in Section I apply to fixed form or CAT assessments, whether summative assessments or a set of interim/benchmark assessments. Item banks also should reflect the full intent of the indicators.*

Strong mathematics instruction contains the following elements:



Title: **CASE Benchmark Assessments, Math**

Grade/Course: **3**

Publisher: **TE21, Inc.**

Copyright: **2017**

Overall Rating: **Tier I, Exemplifies quality**

Tier I, Tier II, Tier III Elements of this review:

STRONG	WEAK
1. Alignment of Test Items (Non-Negotiable)	
2. Focus on Major Work (Non-Negotiable)	
3. Focus (Non-Negotiable)	
4. Rigor and Balance (Non-Negotiable)	
5. Practice-Content Connections	
6. Calling for Variety in Item Type, Student Work	
7. Constructing Forms Without Cueing Solution Proc	
8. Quality Materials	

To evaluate each set of submitted materials for alignment with the standards, begin by reviewing the indicators listed in Column 2 for the non-negotiable criteria in Section I*. If there is a "Yes" for all indicators in Column 2 for Section I, then the materials receive a "Yes" in Column 1. If there is a "No" for any indicator in Column 2 for Section I, then the materials receive a "No" in Column 1. In Section II, review each indicator individually.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 8.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria but at least one "No" in Section II.
Tier 3 ratings receive a "No" in Column 1 in Section I.

** The criteria in Section I apply to fixed form or CAT assessments, whether summative assessments or a set of interim/benchmark assessments. Item banks also should reflect the full intent of the indicators.*

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all non-negotiable criteria in order for the review to continue.			
Non-Negotiable **1. ALIGNMENT OF TEST ITEMS**: Test items and/or sets of items elicit direct, observable evidence of the degree to which a student can independently demonstrate the targeted Standard(s) ☒ Yes ☐ No	**1a)** Items exhibit alignment to the full intent of the LSSM for that grade/course.	**Yes**	Items exhibit alignment to the full intent of the LSSM for Grade 3. For example, Standard 3.OA.B.5 requires students to apply properties of operations to multiply and divide. Problem 8 on the Benchmark Assessment requires students to demonstrate understanding of the commutative property of multiplication. Problem 23 also assesses this standard and requires students to demonstrate understanding of the distributive property by choosing which expression has the same value as the given multiplication expression. Problems 15-19 on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment also align with Standard 3.OA.B.5. These problems assess understanding of the commutative property, the associative property, and the distributive property. Together, these items meet the full intent of Standard 3.OA.B.5. Standard 3.MD.A.1 is a standard that has many expectations. The problems on the Measurement and Data Assessment assess all expectations of this standard. Problem 2 requires students to tell time to the nearest minute. Problem 3 is a word problem that provides a start time and end time, and students must determine the elapsed time, within 60 minutes. Problem 4 again provides students with a start time and end time, and students must use a number line diagram to determine the elapsed time. Problem 5 provides an end time and two elapsed times, and students must determine the start time. Problem 6 is a word problem with multiple steps. Students must determine two different elapsed times and then compare the two. Together, these items meet the full intent of Standard 3.MD.A.1. Another example is Standard 3.OA.D.8, which requires students to

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			solve two-step word problems using the four operations, represent these problems using equations with a letter to stand for the unknown quantity, and assess the reasonableness of answers using mental math and estimation strategies. On the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment, Problems 27-32 assess this standard. Problem 27 is a word problem that requires students to add and then divide. Problem 29 provides a two-step word problem and asks students to choose the equation, including a variable, that could be used to solve it. Problem 32 provides students with a word problem that asks them to determine an estimate. Together, these items meet the full intent of Standard 3.OA.D.8.
	1b) Items adhere to content limitations outlined in the LSSM and the Assessment Guides. All limitations for all grades K-HS provided in footnotes of the LSSM are also followed.	**Yes**	Items adhere to the content limitations outlined in the LSSM. All addition and subtraction problems on the assessments are within 1000 (3.NBT.A.2). For example, on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment, Problem 42 asks students to solve 213-164, and Problem 44 requires students to add 585+324. In addition, multiplication and division problems also adhere to the content limitations. All multiplication and division problems are within 100 (3.OA.A.3). For example, on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment, Problem 8 requires students to multiply 5x7 to solve the given word problem. Problem 9 requires students to divide 48 by 6 to solve the given word problem. Standard 3.NF.A.3d limits comparing fractions to those with either the same numerator or the same denominator. On the Number and Operations - Fractions/Geometry Assessment, Problem 20 requires students to compare fractions with

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			the same numerator. Problem 40 on the Grade 3 Benchmark Assessment asks students to compare two fractions with like denominators. In Grade 3, the Standards limit fractions to those with denominators of 2, 3, 4, 6, and 8. All fraction problems on the assessments, except one, adhere to these content limitations. On the Number and Operations - Fractions/Geometry Assessment, Problem 17 asks students to study the model, which shows a rectangle divided into twelfths. 4/12 are shaded, and students are asked to choose the number line that shows a fraction equivalent to the shaded part of the model. This goes beyond the content limitations.
	1c) Items use the number system appropriate to the grade/course. For example, in grade 3 there are some items involving fractions greater than 1; in the middle grades, arithmetic and algebra use the rational number system, not just the integers.	**Yes**	Items on the assessments use the number system appropriate to Grade 3. For example, Problem 44 on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment requires students to add numbers within 1000 (3.NBT.A.2) but greater than 100, which is a Grade 2 expectation. All addition and subtraction problems on the provided assessments use numbers greater than 100 but less than 1000, as appropriate for Grade 3. It should be noted that only 1 problem out of 19 problems aligned with Standards 3.NF.A.1 and 3.NF.A.2 on all assessments submitted involves a fraction greater than 1. Problem 7 on the Benchmark Assessment requires students to identify a fraction greater than one on a number line (3.NF.A.2).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Non-Negotiable **2. FOCUS ON MAJOR WORK:** The large majority of items in each grade/course are devoted to the major work of the grade. ☒ Yes ☐ No	**2a)** Each grade/course's item set **meets or exceeds** the following distributions for the major work of the grade. • 85% of the items in grades K–2 align exclusively to the major work of the grade. • 75% of the items in grades 3–5 align exclusively to the major work of the grade. • 65% of the items in grades 6–12 align exclusively to the major work of the grade.	**Yes**	On the Benchmark Assessment, 33 out of 45 questions, or 73%, align to the major work of the grade. For example, the Operations and Algebraic Thinking Domain is major work of Grade 3. Of the 45 questions on the Benchmark Assessment, 18 of them, or 40%, focus on standards within this domain. Problem 10 is a single-step multiplication word problem, which aligns to major Standard 3.OA.A.3. Problem 16 requires students to choose the multiplication sentence that best matches the given array, which aligns to major Standard 3.OA.A.1. The Number and Operations: Fractions Domain is also major work of Grade 3, and 8 out of the 45 questions, or 18%, focus on this domain. Problem 11 of the Benchmark Assessment shows students a figure separated into six equal parts and asks what fraction can be used to describe one of the parts. This aligns to major Standard 3.NF.A.1, which requires students to understand a fraction 1/b, with denominators 2, 3, 4, 6, and 8, as the quantity formed by 1 part when a whole is partitioned into b equal parts. Problem 27 requires students to choose the two fractions that can be represented by the point on the number line, which is aligned with major Standard 3.NF.A.3a.
Non-Negotiable **3. FOCUS:** No item assesses topics directly or indirectly before they are introduced in the LSSM. ☒ Yes ☐ No	**3a)** 100% of items address only knowledge of topics found in the LSSM in the specified grade/course.	**Yes**	While the authoring vendor has items aligned to national standards, where the expectations of the LSSM differ from those of national standards, the vendor takes that into account and revises accordingly. For example, Problem37 on the Measurement and Data Assessment aligns to national standards for Grade 3 but is aligned with LSSM 4.MD.D.8. As a result, it will not remain in the Grade 3 bank of items. All other items on the provided assessments address only content from Grade 3 Standards.
Non-Negotiable	**4a)** ***For Conceptual Understanding:***	**Yes**	In Grade 3, 24 out of 45 items on the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
4. RIGOR AND BALANCE: Each grade/course's assessments reflect the balances in the Standards and help students meet the Standards' rigorous expectations by helping students develop conceptual understanding, procedural skill and fluency, and application. ☒ Yes ☐ No	***K–High School*:** At least 20% of the items for each grade or course explicitly require students to demonstrate conceptual understanding especially where called for in specific content standards.		Benchmark Assessment, or 53%, require students to demonstrate conceptual understanding, especially where called for in specific standards. For example, Problem 4 assesses understanding of Standard 3.NF.A.1, which requires students to understand what a fraction is. The item shows a circle partitioned into four equal parts and has three parts shaded in. Students demonstrate conceptual understanding by choosing the fraction that represents the shaded part of the circle. Problem 8 assesses understanding of Standard 3.OA.B.5, which calls for students to apply the properties of operations as strategies to multiply or divide. Students must understand properties of operations to choose the equations that are true. Problem 23 assesses understanding of Standard 3.OA.B.5 in a different way. The problem asks students to choose the expression that has the same value as a given multiplication expression, thus assessing understanding of the distributive property. Problem 16 assesses Standard 3.OA.A.1, which calls for students to interpret products of whole numbers. Students must choose the multiplication sentence that best matches the given array. Problem 29 assesses understanding of Standard 3.NBT.A.1. This standard requires students to use place value understanding to round whole numbers to the nearest 10 or 100. Problem 29 requires students to round multiple numbers to the nearest 10.
	4b) *For Procedural Skill and Fluency:* ***K–High School*:** At least 20% of the items for each grade or course explicitly require students to demonstrate procedural skill and fluency, especially where called for in specific content standards.	**Yes**	In Grade 3, a sufficient number of items focus on procedural skill and/or fluency. Multiple-choice Problem 1 assesses procedural skill of Standard 3.OA.A.4, which requires students to determine the unknown whole number in a multiplication or division equation relating three whole numbers. Problem 4 in the gridded section also assesses procedural skill of this

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			standard.
	4c) ***For Applications*** • ***K–5:*** At least 20% of the items for each grade explicitly assess solving single- or multi-step word problems. • ***6–8:*** At least 25% of the items for each grade explicitly assess solving single- and multi-step word problems and simple models. • ***High School:*** At least 30% of the items for each high school course explicitly assess single- and multi-step word problems, simple models, and substantial modeling/application problems.	**Yes**	In Grade 3, 14 out of 45 items on the Benchmark Assessment, or 31%, require students to demonstrate application by solving single- or multi-step word problems. For example, Standard 3.OA.A.3 requires students to use multiplication and division within 100 to solve word problems. Problems 10 and 21 and Problem 3 in the gridded section contain single-step multiplication and division word problems to assess students' application of the skills. In addition, Problem 13 asks students to solve a word problem involving elapsed time (3.MD.A.1c). Problem 19 assesses Standard 3.NBT.A.3, multiplying one-digit whole numbers by multiples of 10, through a word problem. It should be noted that some problems may intend to assess application but instead assess procedural skill because the equation needed to solve the problem is given. For example, Problem 6 provides students with a two-step word problem involving addition and subtraction (3.OA.D.8). However, because the equation needed to solve the problem is given (348 - 56 + 109 = _), students do not need to understand the context provided to answer the question correctly. Thus, this problem assesses procedural skill rather than application.
SECTION II: ADDITIONAL INDICATORS OF QUALITY			
5. Practice-Content Connections. Each grade/course's assessments include items that meaningfully connect the Standards for Mathematical Content and Standards for Mathematical Practice. However, not all items need to align to a Standard for Mathematical Practice, and there is no requirement to have an equal balance among the Standards for Mathematical Practice in any set of items or test forms.		**Yes**	The Grade 3 assessments include items that meaningfully align with the Standards for Mathematical Practice. For example, on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment, Problem 10 connects to MP2 Reason abstractly and quantitatively. The problem presents a scenario with the division statement 72 ÷8. The answer choices require students to recognize

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			what the numbers in the given expression represent in the given context, with the correct answer being, "There are 72 players in all. There are 8 teams with 9 players." (3.OA.A.3) Problem 29 on the same assessment provides a 2-step word problem. The question asks which equation can be used to solve the problem (3.OA.D.8). This aligns with MP4 Model with mathematics. Problem 4 on the Measurement and Data Assessment aligns with MP5 Use appropriate tools strategically. The problem is an elapsed time problem, and it provides students with a timeline to use to determine the amount of time that passed (3.MD.A.1). Problem 31 on the same assessment aligns with MP3 Construct viable arguments and critique the reasoning of others. The problem shows a picture of how a student measured the area of a rectangle (3.MD.C.5). Students must choose the answer that correctly explains if the student was right and why. The correct answer states, "Alison is not correct because she did not use tiles of the same size."
6. Calling for Variety in Item Type and Student Work. Assessments include a variety of item types (e.g., multiple choice, multiple select, numeric response, constructed response) that require a variety in what students produce. For example, items require students to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations (including items that explicitly assess expressing and/or communicating mathematical reasoning), diagrams, mathematical models, etc.		**Yes**	The assessments provided for Grade 3 include a variety of item types that require a variety in what students produce. Most items on all assessments are multiple-choice items, such as Problem 2 on the Benchmark Assessment. This problem is a subtraction word problem (3.NBT.A.2). However, there are other types of problems included on all assessments. For example, on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment, Problem 21 requires students to enter a numeric response into a grid for the missing number in a multiplication/division fact family (3.OA.B.6). Problem 43 on the same assessment is a multiple-select item and requires students to choose two expressions that are equal to 450 (3.NBT.A.2). The Performance Task includes items that require

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			students to do a variety of things. On Part A, students must draw hash marks on the given number line to make 8 equal segments, then label each hash mark with the fraction it represents (3.NF.A.2). For Part B, students must identify the fraction, provide an equivalent fraction, and show work to support the answer (3.NF.A.3). In Part D, students must write a 1-2 sentence explanation about what fraction represents the area of each piece (3.G.A.2).
7. Constructing Forms Without Cueing Solution Processes. Item sequences do not cue the student to use a certain solution process during problem solving and assessments include problems requiring different types of solution processes within the same section.		**Yes**	Item sequences do not cue the student to use a certain solution process during problem solving. Assessments include problems requiring different types of solution processes within the same section. For example, in the gridded section of the Benchmark Assessment, Problem 1 is a word problem that requires students to find an estimate of the total number of people in attendance at a theater (3.OA.D.8). Problem 2 asks students to round 295 to the nearest ten (3.NBT.A.1). Problem 3 is a division word problem (3.OA.A.3). Problem 4 requires students to determine the missing number in a division equation. Each of these examples given requires a different solution process.
8. Quality Materials. The assessment items, answer keys, and documentation are free from mathematical errors.		**Yes**	The assessment items, answer keys, and documentation are free from mathematical errors.

FINAL EVALUATION

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 4 and a "Yes" for all additional indicators 5 – 8.

Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" for additional indicators 5 – 8.

Tier 3 ratings receive a "No" in Column 1 for at least one criteria in Section I.

Compile the results for Sections I and II to make a final decision for the material under review.

Section	Criteria	Yes/No	Final Justification/Comments
I: Non-Negotiables	1. Alignment of Test Items	**Yes**	Items assess the full intent of the Standards, stay within the content limitations, and use the number system appropriate to Grade 3.

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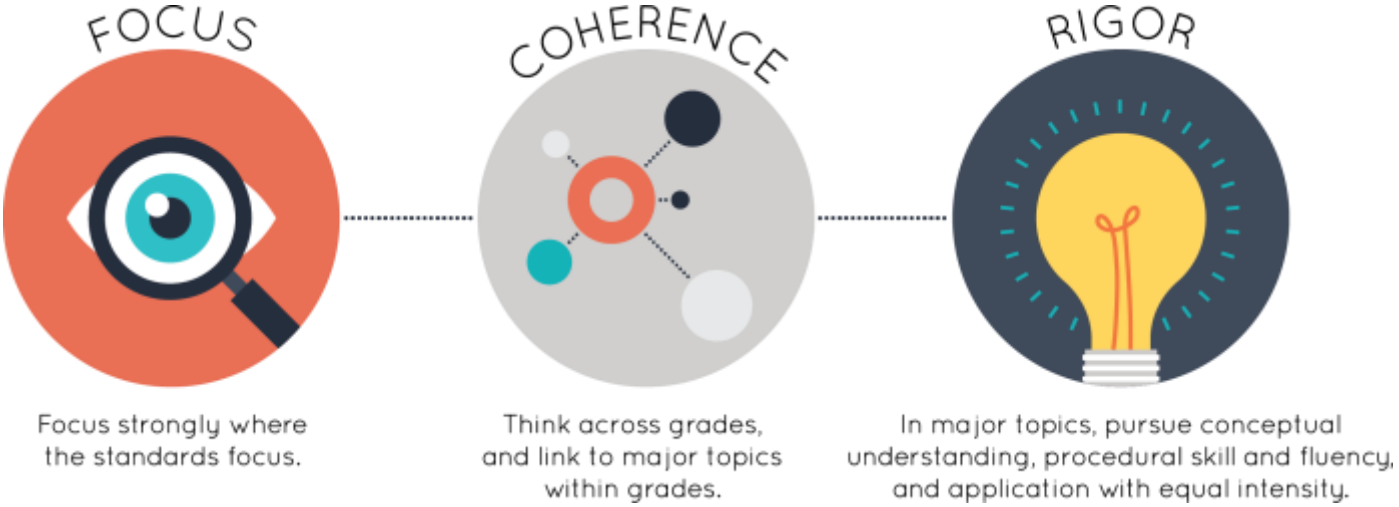
	2. Focus on Major Work	**Yes**	On the Benchmark Assessment, 73% of items align with major work of Grade 3.
	3. Focus	**Yes**	100% of items address only knowledge of topics found in the LSSM in Grade 3.
	4. Rigor and Balance	**Yes**	The Grade 3 Benchmark Assessment reflects a balance of items assessing conceptual understanding, procedural skill and fluency, and application.
II: Additional Indicators of Quality	5. Practice-Content Connections	**Yes**	The Grade 3 assessments include items that meaningfully align with the Standards for Mathematical Practice.
	6. Calling for Variety in Item Type and Student Work	**Yes**	The assessments provided for Grade 3 include a variety of item types that require a variety in what students produce.
	7. Constructing Forms Without Cueing Solution Processes	**Yes**	Item sequences do not cue the student to use a certain solution process during problem solving, and assessments include problems requiring different types of solution processes within the same section.
	8. Quality Materials	**Yes**	The assessment items, answer keys, and documentation are free from mathematical errors.
FINAL DECISION FOR THIS MATERIAL: **Tier I, Exemplifies quality**			

Strong mathematics instruction contains the following elements:



Title: **CASE Benchmark Assessments, Math**

Grade/Course: **5**

Publisher: **TE21, Inc.**

Copyright: **2017**

Overall Rating: **Tier I, Exemplifies quality**

Tier I, Tier II, Tier III Elements of this review:

STRONG	WEAK
1. Alignment of Test Items (Non-Negotiable)	
2. Focus on Major Work (Non-Negotiable)	
3. Focus (Non-Negotiable)	
4. Rigor and Balance (Non-Negotiable)	
5. Practice-Content Connections	
6. Calling for Variety in Item Type, Student Work	
7. Constructing Forms Without Cueing Solution Proc	
8. Quality Materials	

To evaluate each set of submitted materials for alignment with the standards, begin by reviewing the indicators listed in Column 2 for the non-negotiable criteria in Section I*. If there is a "Yes" for all indicators in Column 2 for Section I, then the materials receive a "Yes" in Column 1. If there is a "No" for any indicator in Column 2 for Section I, then the materials receive a "No" in Column 1. In Section II, review each indicator individually.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 8.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria but at least one "No" in Section II.
Tier 3 ratings receive a "No" in Column 1 in Section I.

** The criteria in Section I apply to fixed form or CAT assessments, whether summative assessments or a set of interim/benchmark assessments. Item banks also should reflect the full intent of the indicators.*

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all non-negotiable criteria in order for the review to continue.			
Non-Negotiable **1. ALIGNMENT OF TEST ITEMS**: Test items and/or sets of items elicit direct, observable evidence of the degree to which a student can independently demonstrate the targeted Standard(s) ☒ Yes ☐ No	**1a)** Items exhibit alignment to the full intent of the LSSM for that grade/course.	**Yes**	Items exhibit the full intent of the LSSM for 5th Grade. For example, items aligned to 5.OA.A.2 incorporate, though not in every item, a variety of number types including whole numbers, fractions, and decimals.
	1b) Items adhere to content limitations outlined in the LSSM and the Assessment Guides. All limitations for all grades K-HS provided in footnotes of the LSSM are also followed.	**Yes**	Items on all assessments adhere to the content limitations as outlined in LSSM. For example, all items that align with Standard 5.NBT.B.7 involve operations with decimals through hundredths, as outlined in the standard. Problem 36 on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment requires students to add $3.75 + $0.60. Problem 39 on the same assessment requires students to solve a word problem by dividing 5.85 by 0.65. On the Benchmark Assessment, Problems 5 and 9 require students to solve word problems with decimals to hundredths.
	1c) Items use the number system appropriate to the grade/course. For example, in grade 3 there are some items involving fractions greater than 1; in the middle grades, arithmetic and algebra use the rational number system, not just the integers.	**Yes**	For the most part, items use the number system appropriate to Grade 5. For example, all items involving addition and subtraction of fractions on the provided assessments include fractions with unlike denominators, as appropriate for Grade 5. In Grade 5, students should be reading, writing, and comparing decimals to thousandths (5.NBT.A.3), and rounding decimals to any place (5.NBT.A.4). Of the 14 items that align with these two standards on all provided assessments, 9 of them involve decimals to thousandths, while the other 5 involve decimals to hundredths. For example, on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment, Problem 18 asks students what 503.74 is in expanded form. Problem 21 asks students what 19.207 is in expanded form. Problem 22 asks students to compare 9.328 and 9.33. Problem 1 on the Benchmark Assessment asks students to determine in

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			which number the 3 has a value that is 10 times as great as its value in 23 (5.NBT.A.1). Two of the four answer choices involve decimals, which is appropriate for Grade 5. It should be noted that all items aligned with Standard 5.OA.A.1 on the provided assessments involve whole numbers. In Grade 5, including some decimals or fractions in items aligned with this standard would be more appropriate.
Non-Negotiable **2. FOCUS ON MAJOR WORK:** The large majority of items in each grade/course are devoted to the major work of the grade. ☒ Yes ☐ No	**2a)** Each grade/course's item set **meets or exceeds** the following distributions for the major work of the grade. • 85% of the items in grades K–2 align exclusively to the major work of the grade. • 75% of the items in grades 3–5 align exclusively to the major work of the grade. • 65% of the items in grades 6–12 align exclusively to the major work of the grade.	**Yes**	On the Benchmark Assessment, 34 out of 45 questions, or 76%, align to the major work of the grade. For example, the Number and Operations in Base Ten Domain is major work of Grade 5. Of the 45 questions on the Benchmark Assessment, 15 of them, or 33%, focus on standards within this domain. Problem 5 assesses Standard 5.NBT.B.7, which requires operations with decimals to hundredths, with a word problem involving decimals to hundredths. Problem 6 assesses Standard 5.NBT.A.3, which requires reading, writing, and comparing decimals to thousandths, by asking students which expression shows 6.94 written in expanded form. Problem 18 assesses Standard 5.NBT.B.6, which requires finding whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using multiple strategies. The problem requires students to choose the area model that matches the given division expression 192÷12. The Number and Operations: Fractions Domain is also major work of Grade 5, and 14 out of the 45 questions, or 31%, focus on this domain. Problem 8 assesses Standard 5.NF.A.1, which calls for addition and subtraction of fractions with unlike denominators. The problem asks students to solve 3/5+3/4. Problem 26 assesses Standard 5.NF.B.3 and provides a word

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			problem involving division of whole numbers leading to an answer in the form of a fraction. Standard 5.MD.C.5 is also a major standard, which requires students to relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. Problem 15 asks students to find volume with the given dimensions in a real-world context.
Non-Negotiable **3. FOCUS:** No item assesses topics directly or indirectly before they are introduced in the LSSM. ☒ Yes ☐ No	**3a)** 100% of items address only knowledge of topics found in the LSSM in the specified grade/course.	**Yes**	100% of items address only content found in the LSSM for Grade 5. All problems focused on volume on all provided assessments use whole number side lengths, which is appropriate for Grade 5. For example, Problem 16 on the Measurement and Data Assessment shows a figure and states that each cube represents 1 cubic foot. Students must determine the volume (5.MD.C.4). In Problem 19, students find the volume of a rectangular prism with side lengths of 4cm, 8cm, and 6cm (5.MD.C.5). On all assessments, all problems focused on division with fractions use unit fractions and whole numbers, as specified in Standard 5.NF.B.7. For example, on the Number and Operations - Fractions/Geometry Assessment, Problem 36 is a word problem that requires students to divide 1/2 by 5. Problem 37 requires students to interpret a model to determine the division problem that matches it, which is 1/9 ÷ 6. Problems 38-40 also involve dividing a whole number by a unit fraction or a unit fraction by a whole number. In addition, all problems on all assessments that involve the coordinate plane only deal with the first quadrant, as specified in Grade 5 Standard 5.G.A.2. Problem 28 on the Benchmark Assessment assesses this standard and asks students to identify an ordered pair in the first quadrant of a coordinate plane.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Non-Negotiable **4. RIGOR AND BALANCE:** Each grade/course's assessments reflect the balances in the Standards and help students meet the Standards' rigorous expectations by helping students develop conceptual understanding, procedural skill and fluency, and application. ☒ Yes ☐ No	**4a) *For Conceptual Understanding:*** ***K–High School*:** At least 20% of the items for each grade or course explicitly require students to demonstrate conceptual understanding especially where called for in specific content standards.	**Yes**	In Grade 5, 23 out of the 45 items on the Benchmark Assessment, or 51%, require students to demonstrate conceptual understanding, especially where called for in specific standards. For example, Standard 5.NBT.A.1 requires students to understand that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. Problems 1 and 35 align with this standard. Problem 1 asks students to choose the number where the digit 3 has a value 10 times as much as the 3 in the given number. Problem 35 asks students to choose the number where the digit 9 has a value that is 1/10 the value of the 9 in the given number. Standard 5.NBT.B.6 also calls for conceptual understanding of division of up to 4-digit dividends and 2-digit divisors. Problem 18 meets this expectation as it requires students to choose the area model that represents 192 ÷ 12. Standard 5.OA.A.2 calls for conceptual understanding as students must write simple expressions that record calculations with whole numbers, fractions, and decimals, and interpret numerical expressions without evaluating them. Problem 11 on the Benchmark Assessment asks students to choose 3 expressions that are equivalent to the phrase, "triple 6, and then add 2." Problem 20 requires students to demonstrate conceptual understanding of Standard 5.G.B.4, classify two-dimensional figures in a hierarchy based on properties. The problem asks students to choose the statement that is true from the following choices: All rectangles are squares, all squares are rhombuses, all quadrilaterals are rectangles, and all quadrilaterals are parallelograms.
	4b) *For Procedural Skill and Fluency:*	**Yes**	In Grade 5, 10 out of the 45 items on the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	***K–High School*:** At least 20% of the items for each grade or course explicitly require students to demonstrate procedural skill and fluency, especially where called for in specific content standards.		Benchmark Assessment, or 22%, require students to demonstrate procedural skill and fluency. Standard 5.NF.A.1 calls for procedural skill of adding and subtracting fractions with unlike denominators. Problem 8 asks students to solve 3/5 + 3/4. Problem 13, also aligned with 5.NF.A.1, is placed in a context; however, the context is not necessary to solve the problem. Students are asked to find the difference between 18/4 and 3/2. Therefore, this problem also assesses procedural skill. Standard 5.MD.C.5 calls for procedural skill of finding volume of rectangular prisms. Problem 36 shows a figure of two non-overlapping rectangular prisms with side lengths given. Students must find the volume of the figure by adding the volume of the non-overlapping parts.
	4c) *For Applications* • ***K–5:*** At least 20% of the items for each grade explicitly assess solving single- or multi-step word problems. • ***6–8:*** At least 25% of the items for each grade explicitly assess solving single- and multi-step word problems and simple models. • ***High School:*** At least 30% of the items for each high school course explicitly assess single- and multi-step word problems, simple models, and substantial modeling/application problems.	**Yes**	In Grade 5, 12 out of the 45 items on the Benchmark Assessment, or 27%, require students to demonstrate application by solving single- or multi-step word problems. Problem 5 is a multi-step word problem which requires students to calculate with decimals (5.NBT.B.7). Problem 14 is a single-step word problem that requires students to multiply 3/4 x 6 (5.NF.B.4). Problem 1 in the gridded section is a single-step word problem that requires students to divide 460 by 12. It should be noted that some of the word problems include models and/or equations, which makes them weak examples of application. For example, Problems 29 and 30 are single-step word problems that involve multiplying or dividing a unit fraction by a whole number. Models are given for both items that show the calculations, and students could use the models to find the answer rather than applying their skills to understand the context. In addition, Standard 5.NF.A.2, solve word problems involving addition and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			subtraction of fractions, specifically calls for application. On the Benchmark Assessment, Problems 12, 13, and 22 assess this standard. While they are placed in a context, they context is not needed to solve the problems, and they, therefore, assess procedural skill rather than application, as required by the standard.
SECTION II: ADDITIONAL INDICATORS OF QUALITY			
5. Practice-Content Connections. Each grade/course's assessments include items that meaningfully connect the Standards for Mathematical Content and Standards for Mathematical Practice. However, not all items need to align to a Standard for Mathematical Practice, and there is no requirement to have an equal balance among the Standards for Mathematical Practice in any set of items or test forms.		**Yes**	The Grade 5 assessments include items that meaningfully align with the Standards for Mathematical Practice. For example, on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment, Problem 17 aligns with MP7 Look for and make use of structure. The problem asks how much the place value of a number would increase when multiplied by the given power of 10 (5.NBT.A.2). Problem 27 on the same assessment, a multiplication word problem (5.NBT.B.5), aligns with MP4 Model with mathematics. Problem 32 shows the first step of long division for 7,982÷26. The 3 in the quotient is given, and students are asked to identify the value of the digit 3 represented in the quotient (5.NBT.B.6). This aligns with MP2 Reason abstractly and quantitatively. On the Number and Operations - Fractions/Geometry Assessment, Problem 15 connects to MP3 Construct viable arguments and critique the reasoning of others. The problem shows one student's work in adding 2/3 + 2/6 (5.NF.A.2b). The question asks, "Does Jaylin find the correct answer, and why?" The correct response states, "No. He added a number to ⅔, and ⅔ is greater than ½, so he should have an answer that is greater than ½." On the Performance Task, Part A aligns with MP3 as well. The problem asks students to explain why a student's reasoning about volume is correct or

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			incorrect (5.MD.C.5).
6. Calling for Variety in Item Type and Student Work. Assessments include a variety of item types (e.g., multiple choice, multiple select, numeric response, constructed response) that require a variety in what students produce. For example, items require students to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations (including items that explicitly assess expressing and/or communicating mathematical reasoning), diagrams, mathematical models, etc.		**Yes**	The assessments provided for Grade 5 include a variety of item types that require a variety in what students produce. Most items on all assessments are multiple choice items, such as Problem 1 on the Measurement and Data Assessment. This problem is asking students to determine how many gallons are in 12 quarts (5.MD.A.1). However, there are other types of problems included on all assessments. For example, on the Operations and Algebraic Thinking/Number and Operations in Base Ten Assessment, Problem 2 requires students to find the value of a given expression (5.OA.A.1) and enter the numeric answer into a grid. Problem 13 on the same assessment is a multiple-select item and requires students to choose two statements that correctly compare the value of the digit 4 in two numbers (5.NBT.A.1). On the Performance Task, students answer constructed response questions. In Part A, they are asked to tell whether or not someone found the correct volume of two boxes (5.MD.C.5) and explain the answer in sentences. Part D asks students to find the total volume of two given boxes (5.MD.C.5) and show work to support the answer.
7. Constructing Forms Without Cueing Solution Processes. Item sequences do not cue the student to use a certain solution process during problem solving and assessments include problems requiring different types of solution processes within the same section.		**Yes**	Item sequences do not cue the student to use a certain solution process during problem solving. Assessments include problems requiring different types of solution processes within the same section. For example, in the gridded section of the Benchmark Assessment, Problem 1 is a word problem requiring students to multiply 460 by 12 (5.NBT.B.5). Problem 2 asks students to find the quotient of 7,518÷14 (5.NBT.B.6). Problem 3 asks students what 582.476 rounded to the nearest hundredth (5.NBT.A.4). Problem 4 asks students to multiply 2,048x375 (5.NBT.B.5).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Problem 5 is a word problem requiring the answer written as a fraction (5.NF.B.7).
8. Quality Materials. The assessment items, answer keys, and documentation are free from mathematical errors.		**Yes**	The assessment items, answer keys, and documentation are free from mathematical errors.

FINAL EVALUATION

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 4 and a "Yes" for all additional indicators 5 – 8.

Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" for additional indicators 5 – 8.

Tier 3 ratings receive a "No" in Column 1 for at least one criteria in Section I.

Compile the results for Sections I and II to make a final decision for the material under review.

Section	Criteria	Yes/No	Final Justification/Comments
I: Non-Negotiables	1. Alignment of Test Items	**Yes**	Items do exhibit alignment to the full intent of all standards assessed, and items do adhere to the content limitations of the LSSM and use numbers appropriate to Grade 5.
	2. Focus on Major Work	**Yes**	On the Benchmark Assessment, 34 out of 45 questions, or 76%, align to the major work of Grade 5.
	3. Focus	**Yes**	100% of items address only content found in the LSSM for Grade 5.
	4. Rigor and Balance	**Yes**	The Grade 5 Benchmark Assessment reflects a balance of items assessing conceptual understanding, procedural skill and fluency, and application.
II: Additional Indicators of Quality	5. Practice-Content Connections	**Yes**	The Grade 5 assessments include items that meaningfully align with the Standards for Mathematical Practice.
	6. Calling for Variety in Item Type and Student Work	**Yes**	The assessments provided for Grade 5 include a variety of item types that require a variety in what students produce.
	7. Constructing Forms Without Cueing Solution Processes	**Yes**	Item sequences do not cue the student to use a certain solution process during problem solving, and assessments include problems requiring different types of solution processes within the same section.
	8. Quality Materials	**Yes**	The assessment items, answer keys, and documentation are free from mathematical errors.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
FINAL DECISION FOR THIS MATERIAL: **Tier I, Exemplifies quality**			

Appendix I.

Publisher Response

The publisher had no response.

Appendix II.

Public Comments

There were no public comments submitted.