TENTATIVE TENNESSEE TEXTBOOK ADOPTION SCHEDULE

SECTION I - Mathematics K-12

2013-2015

October 14, 2013	Call for reviewers: Section I-Mathematics
October 21, 2013	Preliminary notification of invitation to bid for Section I- Mathematics, intent to bid
December 9, 2013	Intent to bid due in Textbook Services Office
November 1, 2013	Call for publisher substitution of newer editions of books on contract.
December 16, 2013	Official notification of invitation to bid, Section I- Mathematics
January 24, 2014	Pre-bid conference, Section I- Mathematics- Davy Crockett building (this will be a one day conference with 2 hours devoted to process overview and 5 hours devoted to standards expectations and rubric overview)
January 31, 2014	Deadline for reviewer application submission
February 1, 2013	Deadline for submission of substitutions
February 13, 2014	Meeting of committee to select reviewers –location tba
March 3, 2014	10:00 a.m. deadline for delivery of official bids Section I- Mathematics
March 17, 2014	Meeting of State Textbook Commission, election of officers - location tba
May 3-4, 2014**	Textbook review committee orientation –standards & Section I: non-negotiable alignment criteria - location tba
May 10, 2014	Reviewer publisher hearings (this is dependent upon the number of publishers bidding in each section; May 11 may be added if a large number of publishers bid) - location tba
May 19, 2014	Deadline for: delivery of official sample textbooks, delivery of sample textbooks to textbook review committees, & delivery of sample textbooks to State Textbook Commission and district textbook collections *note: all public comment received by July 15, 2014 will be shared with publishers and considered in the revision process.
June 16-17, 2014	Textbook review committee debriefing and norming of Section I: non-negotiable alignment criteria; textbook review committee orientation – standards & Section II: additional alignment criteria and indicators of quality - location tba
July 29, 2014	Preliminary textbook adoption list (Section I- Mathematics) presented at State Board of Education meeting
August 8, 2014	Deadline for written response to reviews from Section I: non-negotiable alignment criteria to be delivered to commission members, the Office of Textbook Services, and the textbook review committee
August 23-24, 2014	Textbook review committee debriefing and norming of section ii: additional alignment criteria and indicators of quality; publishers hearings in response to Section I: non-negotiable alignment criteria; public comment - location tba
August 31, 2014	Deadline for amendments to free materials offerings
September 5, 2014	Deadline for written response to reviews from Section II: additional

	alignment criteria and indicators of quality to be delivered to commission members, the Office of Textbook Services, and the textbook review
September 22-23, 2014	Meeting of State Textbook Commission; meeting/publishers' hearings Section I- Mathematics –final response; textbook review committee final reviews - location tba
October 1, 2014	Deadline for delivery of selected official samples in final format
October 6, 2014	Meeting of State Textbook Commission : recommendation of books for Section I- Mathematics - location tba
October 24, 2014	Final textbook adoption list (Section I- Mathematics) presented at state board of education meeting
November 3, 2014	Official list of textbooks for Section I- Mathematics to local school systems
January 9, 2015	Deadline for samples for Section I- Mathematics to be delivered to local school systems
January 19 - February 28, 2015	Timeline for LEA textbook hearings for Section I- Mathematics
April 15, 2015	Deadline for filing local adoption report for Section I- Mathematics

*Note: All public comment received by July 15, 2014 will be shared with publishers and considered in the revision process.

**Dates in red are meeting dates for textbook review committees

Information about the Math Textbook Panelist Rubric and Training for Panelists

Math Textbook Panelist Rubric

The academic standards approved by the State Board of Education comprise the basis for reviews of textbooks by the state advisory panels. In addition, textbooks and instructional materials must also include the Standards for Mathematical Practice (which describe the varieties of expertise, habits of minds, and productive dispositions that educators seek to develop in all students) and the three elements required by our Tennessee state standards for mathematics: focus, coherence, and rigor. These essential components are represented in the two-stage math textbook review process of non-negotiables (Phase 1 Review) and additional criteria (Phase 2 Review).

Phase 1 Review included two criteria: focus and rigor. The first draft of the math textbook rubric was created by content experts at the Tennessee Department of Education. The first draft was reviewed by the Tennessee math leadership team comprised of Tennessee educators representing all eight CORE regions, school leaders, district leaders, instructional supervisors, teachers, and representatives of Tennessee higher education institutions. Based on the feedback from this team, and in order to ensure that the rubric was focused on the essential criteria that set high expectations for our non-negotiables, the rubric for Phase 1 Review was narrowed to include just two criteria: focus and rigor. Based on where we have been and based on what our teachers need in order to best equip our students to achieve success in mathematics, it was determined that these were the two most critical things needed for mathematics education in our state.

Phase 2 Review included the Standards for Mathematical Practice and coherence. Since educators are still adjusting and learning about the Standards for Mathematical Practice ('Practices') and how they should look in classrooms, on assessments, and in instructional resources, it was determined that the Practices would be included in the Phase 2 review. Coherence across subject matter content within a grade level (horizontal coherence) and coherence across grade levels (vertical coherence) was also included in Phase 2 review. In an effort to ensure open the bidding process up to a greater variety of instructional resources, the TDOE in consultation with the Textbook Commission, made the decision to categorize vertical coherence as an 'additional criteria' (Phase 2) as opposed to a non-negotiable criteria (Phase 1). This means that instructional resources did not have to have subject matter coherence across grade-levels in order to advance to Phase 2 Review.

*Please note that the screening instrument was developed by Tennessee Department of Education content experts and approved by the Textbook Commission. It was developed for Tennessee and does not coincide, nor was it meant to mirror or replicate, any screening instrument created by Student Achievement Partners (SAP).

Training for Textbook Advisory Panelists

On May 3-4, 2014, the advisory panelists attended an orientation and received training on the math textbook rubric, with a focus on Phase 1, non-negotiable criteria. The training for the state advisory panelists was created by content experts at the Tennessee Department of Education (TDOE) in consultation with Student Achievement Partners (SAP). The SAP team was trained by TDOE staff on the Tennessee math textbook rubric approved by the Textbook Commission. TDOE staff and SAP created the agenda and content of the training through a series of phone calls, emails, and in-person meetings. The

training was solely based on the Tennessee math textbook rubric, and did not deviate from it in any way. The training was conducted by the Tennessee Department of Education and SAP. The training supported our work as a state and supported our rubric in design, intent, and purpose.

On June 17, 2014, the TDOE conducted a second training for the advisory panelists on the additional criteria in Phase 2. SAP was not a part of this training.

At the conclusion of the training, advisory panelists overwhelmingly stated that this training was one of the most beneficial trainings for mathematics they have ever received. Multiple panelists personally wrote letters thanking the trainers for their work, and several requested training for other teachers in their districts. All of the panelists who had served on previous years' advisory panels to review textbooks for the previous math textbooks adoption cycle, commented that the training they received for this review process was much better than the training that had been provided previously.

Math Textbook Reviewer Process and Approval

- Applications were accepted through **February 13** (deadline was extended for applicants due to inclement weather and transition of personnel)
- Committee Review Members met on **February 14** to review all applications using a reviewer rubric created by David Williams. Committee members were
    - David Williams, Math Coordinator of Content and Resources, Tennessee Department of Education
    - Scott Eddins, Research Associate, Tennessee State Board of Education
    - Charlotte Woehler, Associate Director of Innovative Projects, Tennessee Department of Education
    - Lewis Moorer, Textbook Commission Member
    - David Sevier, Deputy Executive Director, Tennessee State Board of Education
    - Monty Wilson, Deputy Director of Content and Resources, Tennessee Department of Education
- David Williams and Monty Wilson met on **February 18** to rank applicants based on score and designate grade and subject bands for reviewers.
- Additional applications were accepted through **February 25** due to the fact more quality applicants were needed in the K-5 and higher level high school math bands
- Applicants were notified by **February 28** as to their acceptance status
- Please refer to the attached math textbook Adoption Cycle for information regarding the upcoming timeline

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Additional Notes:

Math Reviewer Work Sample Instructions

The written application has the following three components:

1. Letter of Intent
2. Practice Exercise 1: Original Curricular Resource Task
3. Practice Exercise 2: Curriculum Alignment Task

Instructions:

1. **Letter of Intent:**

   The letter should not be longer than 2 pages, typed, double-spaced. Please describe:
   - Why you are interested in being a Math Reviewer?
   - What process do you undergo when determining which resources you will utilize to support your curriculum? Which resources do you use to help make these decisions?
   - What evidence do you have of student growth from your teaching? (Please focus, in particular, on the past two years of instruction.)

2. **Practice Exercise 1: Original Curricular Resource Task**

   Create an original task or problem set as it would appear in a curricular resource appropriate for the grade level for which you are applying. (If you are applying for more than one grade/course or grade band, you need only submit for one grade or course.) Include an analysis of less than one page, typed, double-spaced, that indicates:

   - The alignment between the task or problem set and the standard(s) (AP topic(s)) for the grade level/course
   - The alignment between the task or problem set and the Standards for Mathematical Practice from the Common Core State Standards

   Your analysis will be measured against four indicators:

   1. Strength of alignment to standards/topics and practice standards
   2. Demonstration of content knowledge
   3. Ability to effectively write in content
   4. Rigor is appropriate for the grade/course and expectation of the standards/topics

3. **Practice Exercise 2: Curriculum Alignment Task**

Choose the Curriculum Alignment Exercise (on pages 3-7 below) from the grade/grade band for which you are applying. (If you are applying for more than one grade/course or grade band, you only need to submit for **one** grade band or course.) Each exercise has multiple problems please consider all the problems for the grade band. In less than one page, typed, double-spaced, give an analysis* that includes the following three components:

- The alignment between the task or problem set and the standard(s) (AP topics) for the specific grade level/course for which you are applying
- The alignment between the task or problem set and the Standards for Mathematical Practice from the Common Core State Standards
- Suggestions for modifications or improvements to the material

**Each of the three components above may include a bulleted list for your analysis.* Only applications that have completed all three components will be reviewed. For example, if you are applying to review books for the 3rd-5th grade band, you will complete an analysis of the three problems on page 4 of this packet by following the directions listed above.

Your analysis will be measured against four indicators:

1. Strength of alignment to standards/topics and practice standards
2. Demonstration of content knowledge
3. Ability to write in content
4. Quality of suggestions made to improve the material

In the table below are links to the standards and topics for grades/courses that will be reviewed and the corresponding exercise for the grade band. If you have any questions, please e-mail David Williams at David.S.Williams@tn.gov or Tammy Shelton, Tammy.L.Shelton@tn.gov.

Standards	**Curriculum Alignment Exercise for Grade Band:**
Kindergarten Grade 1 Grade 2	Kindergarten – 2nd Grade Page 3 below
Grade 3 Grade 4 Grade 5	3rd Grade – 5th Grade Page 4 below
Grade 6 Grade 7 Grade 8	6th Grade – 8th Grade Page 5 below
Algebra I Geometry Algebra II Core Math I Core Math II Core Math III	Algebra I, Geometry, Algebra II / Core Math I, Core Math II, Core Math III Page 6 below
Bridge Math Senior Finite Math Advanced Algebra and Trigonometry Pre-Calculus Statistics AP Statistics Calculus AP Calculus AB/BC	Further Courses Advanced Algebra/Trigonometry, PreCalculus, (AP) Statistics, (AP) Calculus, Bridge Math, Finite Math Page 7 below

1. Peter had some baseball cards. Mike gave Peter 6 more cards and then he had 15 in all. How many cards did Mike give Peter?

2. Tess picked 7 flowers on Monday morning. In the afternoon she picked some more flowers. If Tess picked 15 flowers in all, how many did she pick in the afternoon?

3. George had 19 pennies. He gave some pennies to his sister. Now George has 10 pennies. How many pennies did George give to his sister?

4. Some cupcakes were on the table at a party. 10 cupcakes were eaten. 5 cupcakes were left on the table. How many cupcakes were on the table when the party began?

Curriculum Alignment Exercise for Grade Band: 3rd Grade – 5th Grade

1. Solve the following problems:

   $26 \times 10^1 = ?, \quad 26 \times 10^2 = ?, \quad 26 \times 10^3 = ?$

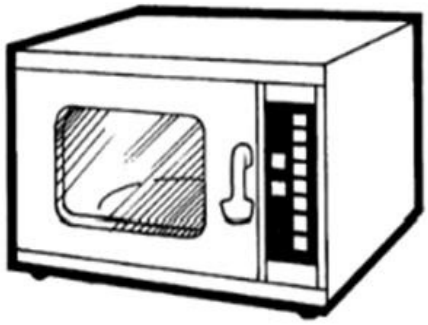
   $43 \times 10^1 = ?, \quad 43 \times 10^2 = ?, \quad 43 \times 10^3 = ?$

   $54 \times 10^1 = ?, \quad 54 \times 10^2 = ?, \quad 54 \times 10^3 = ?$

2. Choose three other two-digit numbers between 10 and 100 and multiply each of them by 10^1, 10^2, and 10^3.

3. Explain the pattern you can use to find the product when multiplying a whole number by a power of 10.

2) A microwave's temperature increases by 25 degrees every 2 minutes. What would be its temperature increase after 5 minutes?



3) Smith has a garden. He has 10 flowers in his garden. In the spring season the number of flowers is expected to increase by 110%. What would be the number of flowers in spring?

Curriculum Alignment Exercise for Grade Band:
Algebra I, Geometry, Algebra II / Core Math I, Core Math II, Core Math III

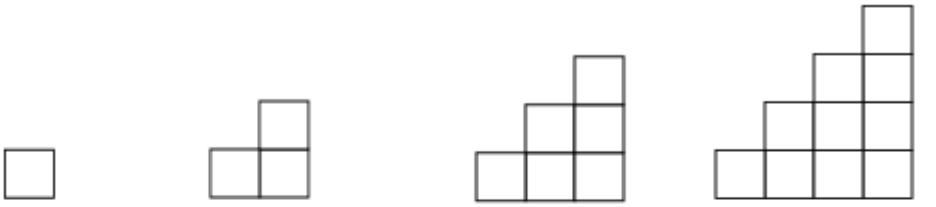


Figure 1 Figure 2 Figure 3 Figure 4

1. Assuming the pattern continues, draw the next figure in the sequence.

2. How many blocks will be in the size 10 logo?

3. Examine the sequence of figures and find a rule or formula for the number of tiles in any figure number.

In each set of 3 functions, one will be linear and one will be exponential. One of the three will be a new category of function. List the characteristics in each table that helped you to identify the linear and the exponential functions. What are some characteristics of the new function? Find an explicit and recursive equation for each.

8. Linear, exponential, or a new kind of function.

a.

x	$f(x)$
6	64
7	128
8	256
9	512
10	1024

Type and characteristics?

Explicit equation:

Recursive equation:

b.

x	$f(x)$
6	36
7	49
8	64
9	81
10	100

Type and characteristics?

Explicit equation:

Recursive equation:

c.

x	$f(x)$
6	11
7	13
8	15
9	17
10	19

Type and characteristics?

Explicit equation:

Recursive equation:

2. Use the six step procedure to sketch the graph of $f(x) = \dfrac{x^2 + 8x + 15}{x^2 - 4x - 21}$

   (a) Find the domain.

   (b) Factor and reduce, if possible.

   (c) Find any x- and y- intercepts.

   (d) Find any vertical asymptotes, and holes.

   (e) Find the horizontal asymptote (if one exists). Analyze the end behavior.

   (f) Make a sign chart, and plot additional points, as needed.

Sketch.

Math Textbook Reviewer Application Rubric - Math

Applicant Name _____

Reviewer Name _____

	Evidence		5	4	3	2	1
Letter of Intent	**Overall Fit**		Letter reflects excitement about being a part of the review committee and a passion for mathematics education Clearly specifies process for selecting curricular materials in his/her own practice Strong evidence of student growth		Letter reflects excitement about being a part of the review committee and a passion for mathematics education Specifies process for selecting curricular materials in his/her own practice Some evidence of student growth		Letter does not reflect excitement or passion about mathematics education Process for selecting curricular materials not specified No evidence of student growth
Knowledge of the Common Core Standards	**Practice Exercises 1 & 2**	**Alignment**	Task is properly aligned to both content and practice standards		Task has some alignment to content and practice standards		Task is not aligned to content or practice standards
		Content Knowledge	Task reveals deep understanding of mathematical concepts to be learned		Task reveals some understanding of mathematical concepts to be learned		Task reveals little or no understanding of mathematical concepts
		Writing in Content	Writing about mathematical content is clear and precise		Writing about mathematical content is not always clear and precise		Writing about mathematical content is difficult to read or understand
	Practice Exercise 1	**Appropriate Rigor**	Task indicates appropriate depth of rigor for selected standard		Task indicates some depth of rigor for selected standard		Task is procedural and/or does not indicate depth appropriate for the standard
	Practice Exercise 2	**Appropriate Suggestions**	Suggestions made for given exercise strengthen the understanding for the content appropriate to the standard		Suggestions made for the given exercise improve the problem for the content appropriate to the standard		No suggestions made or suggestions made do not sufficiently strengthen the exercise

Math Textbook State Advisory Panelists

District Representation: 27 Districts and representatives from all 9 Field Service Regions

Benton	Davidson	Lenoir City	Roane	Tipton
Bradley	Hamilton	Loudon	Rutherford	Williamson
Cannon	Hawkins	Marion	Sevier	Wilson
Chester	Haywood	M'boro City	Shelby	
Cleveland	Jefferson	Oak Ridge	Sullivan	
Crockett	Knox	Overton	Sumner	

Last Name	First Name	Reviewer Band
Agee	Teresa	Alg 2
Archie	Rachel	8th
Atchley	Amanda	K-2
Beckwith	Lisa	K-2
Byrd	Heather	K-2
Caldwell	Paige	Geom
Carson	Stacy	3rd-5th
Choate	Lisa	Bridge/Finite/Discrete/Stats
Doan	Kevin	7th
Edwards	Tracey	3rd-5th
Few	Rebecca	K-2
Flowers	Phillip	Bridge/Finite/Discrete/Stats
Grainger	Teresa	8th
Haire	Christine	Calc/PreCalc/AAT

Haun	Melissa	Alg 1
Hawkins	Tonya	3rd-5th
Hughes	Karen	3rd-5th
Jones	Kelly	6th
King	Shirley	7th
Mason	Martha	3rd-5th
McClendon	Christie	K-2
Miller	Lynette	6th
Montileone	Jacqueline	6th
Nelson	Timothy	3rd-5th
Nivens	Marla	8th
Russell	Keith	7th
Secrest	Jennifer	3rd-5th
Shackleford	Shalunda	Calc/PreCalc/AAT
Showers	Michael	Alg 1
Sizer	Tina	K-2
Snow	Heath	7th
Taylor	Leslie	K-2
Vaughan	Mary	Alg 1
Vogelsang	Karen	3rd-5th
Wallace	Jennifer	Alg 2
White	Marcia	K-2
Wilder	Patricia	Geom
Williams	Mary	3rd-5th

TNCore

TENNESSEE MATHEMATICS TEXTBOOK SCREENING INSTRUMENT, K-8

BEFORE YOU BEGIN

ALIGNMENT TO THE COMMON CORE STATE STANDARDS:

Evaluators of materials should understand that at the heart of the Common Core State Standards is a substantial shift in mathematics instruction that demands the following:
1) Focus strongly where the Standards focus
2) Coherence: Think across grades and link to major topics within grade
3) Rigor: In major topics, pursue conceptual understanding, procedural skill and fluency, and application with equal intensity.

Evaluators of materials must be well versed in the Standards for the grade level of the materials in question, including understanding the major work of the grade vs. the supporting and additional work, how the content fits into the progressions in the Standards, and the expectations of the Standards with respect to conceptual understanding, fluency, and application. It is recommended that evaluators refer to the Publishers' Criteria for Mathematics while using this tool (achievethecore.org/publisherscriteria).

ORGANIZATION

SECTION I: NON-NEGOTIABLE ALIGNMENT CRITERIA

All submissions must meet all of the non-negotiable criteria at each grade level to be aligned to CCSS and before passing on to Section II.

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY

Section II includes additional criteria for alignment to the standards as well as indicators of quality.

REVIEW

Evaluator: _____ Book: _____ Grade/Course: _____

Publisher: _____ Year: _____

SECTION I(1):

FOCUS:

Students and teachers using the materials as designed devote the large majority of time in each grade to the major work of the grade.

METRICS:

A. In any grade, materials are designed so teachers and students spend the large majority of their time* on the major work of the grade (see Appendix A, page 8), with the majority of major work introduced early in the year.	**Yes _____**	**No _____**
B. Topics from future grades are clearly identified as such in the materials and do not detract from focus**.	**Yes _____**	**No _____**
C. Topics from earlier grades are used to support grade-level work. Content from prior grades is clearly indicated as such.	**Yes _____**	**No _____**
D. The following topics are not introduced before the appropriate grade level:	**Yes _____**	**No_____**

Topics	Grade level introduced in CCSS
Similarity, congruence, or geometric transformations.	**8**
Probability, including chance, likely outcomes, probability models.	**7**
Statistical distributions, including center, variation, clumping, outliers, mean, median, mode, range, quartiles; and **statistical association or trends**, including two-way tables, bivariate measurement data, scatter plots, trend line, line of best fit, correlation.	**6**
Symmetry of shapes, including line/reflection symmetry, rotational symmetry.	**4**

To be aligned to the CCSSM, all four indicators of Focus must be marked Yes. Additionally, the topics in the table should not be introduced before the indicated grade level.	**Meet?** **Yes _____ No _____**

Justification/Notes

*The materials should devote at least 65% and up to approximately 85% of class time to the major work of the grade with Grades K–2 nearer the upper end of that range, i.e., 85% and grades 6-8 nearer the lower end of that range, i.e., 65%. These percentages are a guide. Reviewers should not attempt to compute percentages based on counting pages or counting lessons. Reviewers will use their professional judgment to determine how students are meant to spend their time to determine focus and provide evidence for their decision.

**Part D indicates which topics should not be present in materials before the specified grade, even if it is indicated they are from future grades.

SECTION I(2):

RIGOR:

Each grade's instructional materials reflect the balances in the Standards and helps students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application.

METRICS:

A. In the major work of the grade, the three aspects of rigor are given full attention: conceptual understanding, procedural fluency, and application.	**Yes _____**	**No _____**
B. High quality problems and questions designed to invite exploration and support conceptual understanding are included for content standards and clusters that explicitly call for it. A variety of conceptual problems enable students to connect mathematical ideas and representations, and transfer understandings to new situations.	**Yes _____**	**No _____**
C. The development of procedural fluency is robust for those standards that set explicit expectations for fluency. Sometimes problems are purely procedural, and none are based on non-mathematical tricks or mnemonics.	**Yes _____**	**No _____**
D. Students are given opportunity to apply mathematical knowledge and skills for standards that set a clear expectation for solving real-world problems. A variety of grade-level appropriate problems provide students the opportunity to apply mathematical models in a variety of contextual situations.	**Yes _____**	**No _____**

To be aligned to the CCSSM, materials for each grade must attend to each element of rigor and must represent the balance reflected in the Standards. All four indicators must be marked Yes.	**Meet? (Y/N)**

Justification/Notes

Were both non-negotiables in section I met? (Was each component marked "yes"?)	**Yes _____ No _____**

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY

Materials must meet <u>both</u> non-negotiable criteria in Section I to be aligned to the CCSS and receive state approval.

Section II includes additional criteria for alignment to the Standards as well as indicators of quality. Instructional materials evaluated against the criteria in Section II will be rated on the following scale:

- **2 –** (meets criteria): A score of 2 means that the materials meet the full intention of the criterion in all grades.
- **1 –** (partially meets criteria): A score of 1 means that the materials meet the full intention of the criterion for some grades or meets the criterion in many aspects but not the full intent of the criterion.
- **0 –** (does not meet criteria): A score of 0 means that the materials do not meet many aspects of the criterion.

Section II(3). ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE	SCORE	JUSTIFICATION/NOTES
A. Materials connect the math practices to the content standards in meaningful and intentional ways, preferentially for the major work of the grade. The development of the practices is well-grounded in content and not in isolation.	2 1 0	
B. Materials include teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Problems and activities present opportunities for students to make use of and exhibit the practices as they work on content.	2 1 0	
C. Particular attention is given to:		
i. **MP3** – Construct viable arguments and critique the reasoning of others: Students are encouraged to create and test mathematical arguments, make generalizations and provide justifications, particularly in standards that explicitly call for it, in a manner of reasoning appropriate to the grade level.	2 1 0	
ii. **MP4** – Model with mathematics: Students should be given opportunities to apply mathematics learned in novel situations, with an appropriate tradeoff between the complexity and novelty of the problem and the newness of the content they are asked to use. Modeling problems should draw heavily from major work of the grade level or securely-held content, integrated across multiple domains/clusters where appropriate.	2 1 0	

Section II(4). COHERENCE	SCORE	JUSTIFICATION/NOTES
A. Connections are made within a grade between clusters and domains, where these connections are appropriate and natural, as set forth by the Standards (e.g., area models to multiplication in grade 3).	2 1 0	
B. For materials in a series, grade level progressions reflect the progressions as seen in the Standards*, including the development of the practices. These progression connections are clearly indicated in the materials. Any discrepancies in content progressions enhance the required learning in each grade and are clearly aimed at helping students meet the Standards as written.	2 1 0	

*These progressions follow the progressions documents found on www.achievethecore.org.

- Progression on Counting and Cardinality and Operations and Algebraic Thinking (K-5)
- Progression on Number and Operations in Base Ten (K-5)
- Progression on Number and Operations—Fractions (3-5)
- Progression on Measurement and Data (measurement part) (K-5)
- Progression on Measurement and Data (data part) (K-5)
- Progression on Geometry (K-6)
- Progression on Ratios and Proportional Relationships (6-7)
- Progression on Expressions and Equations (6-8)
- Progression on Statistics and Probability (6-8)

II(5). USABILITY	SCORE	JUSTIFICATION/NOTES
A. Materials support teachers in ways such as the following: planning (including ideas for pacing), introducing lessons, assessment types, vocabulary.	2 1 0	
B. Materials are clear and easy to read for students, teachers, parents. The design and graphics do not distract from the mathematics.	2 1 0	
C. Materials include supports for all learners, e.g., EL, students who are below grade level, advanced students.	2 1 0	

Please note any concerns with sensitivity below:

Appendix A, K-8: Major Work of the Grade Clusters; Supporting and Additional Clusters

Grade	Major Clusters	Supporting or Additional Clusters
K	**K.CC.A** Know number names and the count sequence. **K.CC.B** Count to tell the number of objects. **K.CC.C** Compare numbers. **K.OA.A** Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **K.NBT.A** Work with numbers 11–19 to gain foundations for place value.	**K.MD.A** Describe and compare measureable attributes. **K.MD.B** Classify objects and count the number of objects in categories. **K.G.A** Identify and describe shapes. **K.G.B** Analyze, compare, create, and compose shapes.
1	**1.OA.A** Represent and solve problems involving addition and subtraction. **1.OA.B** Understand and apply properties of operations and the relationship between addition and subtraction. **1.OA.C** Add and subtract within 20. **1.OA.D** Work with addition and subtraction equations. **1.NBT.A** Extending the counting sequence. **1.NBT.B** Understand place value. **1.NBT.C** Use place value understanding and properties of operations to add and subtract. **1.MD.A** Measure lengths indirectly and by iterating length units.	**1.MD.B** Tell and write time. **1.MD.C** Represent and interpret data. **1.G.A** Reason with shapes and their attributes.
2	**2.OA.A** Represent and solve problems involving addition and subtraction. **2.OA.B** Add and subtract within 20. **2.NBT.A** Understand place value. **2.NBT.B** Use place value understanding and properties of operations to add and subtract. **2.MD.A** Measure and estimate lengths in standard units. **2.MD.B** Relate addition and subtraction to length.	**2.OA.C** Work with equal groups of objects to gain foundations for multiplication. **2.MD.C** Work with time and money. **2.MD.D** Represent and interpret data. **1.G.A** Reason with shapes and their attributes.
3	**3.OA.A** Represent and solve problems involving multiplication and division. **3.OA.B** Understand properties of multiplication and the relationship between multiplication and division. **3.OA.C** Multiply and divide within 100. **3.OA.D** Solve problems involving the four operations, and identify	**3.NBT.A** Use place value understanding and properties of operations to perform multi-digit arithmetic. **3.MD.B** Represent and interpret data. **3.MD.D** Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. **3.G.A** Reason with shapes and their attributes.

	and explain patterns in arithmetic. **3.NF.A** Develop understanding of fractions as numbers. **3.MD.A** Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. **3.MD.C** Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	
4	**4.OA.A** Use the four operations with whole numbers to solve problems. **4.NBT.A** Generalize place value understanding for multi-digit whole numbers. **4.NBT.B** Use place value understanding and properties of operations to perform multi-digit arithmetic. **4.NF.A** Extend understanding of fraction equivalence and ordering. **4.NF.B** Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. **4.NF.C** Understand decimal notation for fractions and compare decimal fractions.	**4.OA.B** Gain familiarity with factors and multiples. **4.OA.C** Generate and analyze patterns. **4.MD.A** Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. **4.MD.B** Represent and interpret data. **4.MD.C** Geometric measurement: understand concepts of angle and measure angles **4.G.A** Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
5	**5.NBT.A** Understand the place value system. **5.NBT.B** Perform operations with multi-digit whole numbers and with decimals to hundredths. **5.NF.A** Use equivalent fractions as a strategy to add and subtract fractions. **5.NF.B** Apply and extend previous understandings of multiplication and division to multiply and divide fractions. **5.MD.C** Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	**5.OA.A** Write and interpret numerical expressions. **5.OA.B** Analyze patterns and relationships. **5.MD.A** Convert like measurement units within a given measurement system. **5.MD.B** Represent and interpret data. **5.G.A** Graph points on the coordinate plane to solve real-world and mathematical problems. **5.G.B** Classify two-dimensional figures into categories based on their properties.
6	**6.RP.A** Understand ratio concepts and use ratio reasoning to solve problems. **6.NS.A** Apply and extend previous understandings of multiplication and division to divide fractions by fractions. **6.NS.C** Apply and extend previous understandings of numbers to the system of rational numbers. **6.EE.A** Apply and extend previous understandings of arithmetic to algebraic expressions. **6.EE.B** Reason about and solve one-variable equations and	**6.NS.B** Compute fluently with multi-digit numbers and find common factors and multiples. **6.G.A** Solve real-world and mathematical problems involving area, surface area, and volume. **6.SP.A** Develop understanding of statistical variability. **6.SP.B** Summarize and describe distributions.

	inequalities. **6.EE.C** Represent and analyze quantitative relationships between dependent and independent variables.	
7	**7.RP.A** Analyze proportional relationships and use them to solve real-world and mathematical problems. **7.NS.A** Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. **7.EE.A** Use properties of operations to generate equivalent expressions. **7.EE.B** Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	**7.G.A** Draw, construct, and describe geometrical figures and describe the relationships between them. **7.G.B** Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. **7.SP.A** Use random sampling to draw inferences about a population. **7.SP.B** Draw informal comparative inferences about two populations. **7.SP.C** Investigate chance processes and develop, use, and evaluate probability models.
8	**8.EE.A** Work with radicals and integer exponents. **8.EE.B** Understand the connection between proportional relationships, lines, and linear equations. **8.EE.C** Analyze and solve linear equations and pairs of simultaneous linear equations. **8.F.A** Define, evaluate, and compare functions. **8.F.B** Use functions to model relationships between quantities. **8.G.A** Understand congruence and similarity using physical models, transparencies, or geometry software. **8.G.B** Understand and apply the Pythagorean Theorem.	**8.NS.A** Know that there are numbers that are not rational, and approximate them by rational numbers. **8.G.C** Solve real-world and mathematical problems involving volume of cylinders, cones and spheres. **8.SP.A** Investigate patterns of association in bivariate data.

TENNESSEE MATHEMATICS TEXTBOOK SCREENING INSTRUMENT, HIGH SCHOOL CCSS

BEFORE YOU BEGIN

ALIGNMENT TO THE COMMON CORE STATE STANDARDS:

Evaluators of materials should understand that at the heart of the Common Core State Standards is a substantial shift in mathematics instruction that demands the following:
1) Focus strongly where the Standards focus
2) Coherence: Think across grades and link to major topics within grade
3) Rigor: In major topics, pursue conceptual understanding, procedural skill and fluency, and application with equal intensity.

Evaluators of materials must be well versed in the Standards for the grade level of the materials in question, including understanding the major work of the grade vs. the supporting and additional work, how the content fits into the progressions in the Standards, and the expectations of the Standards with respect to conceptual understanding, fluency, and application. It is recommended that evaluators refer to the Publishers' Criteria for Mathematics while using this tool (achievethecore.org/publisherscriteria).

ORGANIZATION

SECTION I: NON-NEGOTIABLE ALIGNMENT CRITERIA

All submissions must meet all of the non-negotiable criteria at each grade level to be aligned to CCSS and before passing on to Section II.

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY

Section II includes additional criteria for alignment to the standards as well as indicators of quality.

REVIEW

Evaluator: _____ Book: _____ Grade/Course: _____

Publisher: _____ Year: _____

SECTION I(1):
FOCUS:
Students and teachers using the materials as designed devote the majority of time in each grade to the Widely Applicable Prerequisites*.

METRICS:

A. In any single course, materials are designed so teachers and students spend at least 50% of their time** on the Widely Applicable Prerequisites* (see Appendix B, page).	**Yes _____**	**No _____**
B. Topics from future courses are clearly identified as such in the materials and do not detract from focus.	**Yes _____**	**No _____**
C. Topics from earlier grades/courses are used to support course-level work. Content from prior grades/courses is clearly indicated as such.	**Yes _____**	**No _____**

To be aligned to the CCSSM, all three indicators of Focus must be marked Yes.	**Meet?** **Yes _____ No _____**

Justification/Notes

*Informed by postsecondary survey data in Conley et al. (2011), "Reaching the Goal: The Applicability and Importance of the Common Core State Standards to College and Career Readiness," http://www.epiconline.org/publications/documents/ReachingtheGoal-FullReport.pdf.
**This percentage is a guide. Reviewers should not attempt to compute percentages based on counting pages or counting lessons. Reviewers will use their professional judgment to determine how students are meant to spend their time to determine focus and provide evidence for their decision.

SECTION I(2):

RIGOR:

Each course's instructional materials reflect the balances in the Standards and helps students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application.

METRICS:

A. For the widely applicable prerequisites, the three aspects of rigor are given full attention: conceptual understanding, procedural fluency, and application.	**Yes _____**	**No _____**
B. High quality problems and questions designed to invite exploration and support conceptual understanding and are included for content standards and clusters that explicitly call for it. A variety of conceptual problems enable students to connect mathematical ideas and representations, and transfer understandings to new situations.	**Yes _____**	**No _____**
C. Materials support the development of fluency, including opportunities to practice algebraic manipulation and computation, appropriately apply tools, and use technology. Sometimes problems are purely procedural, none are based on non-mathematical tricks or mnemonics.	**Yes _____**	**No _____**
D. Students are given opportunity to apply mathematical knowledge and skills for standards that set a clear expectation for modeling. A variety of grade-level appropriate problems provide students the opportunity to apply mathematical models in a variety of contextual situations using knowledge and skills articulated in the standards prior to or during the current course.	**Yes _____**	**No _____**

To be aligned to the CCSSM, materials for each grade must attend to each element of rigor and must represent the balance reflected in the Standards. All four indicators must be marked Yes.	**Meet?** **Yes _____ No _____**

Justification/Notes

Were both non-negotiables in section I met? (Was each component marked "yes"?)	**Yes _____ No _____**

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY

Materials must meet both non-negotiable criteria in Section I to be aligned to the CCSS and receive state approval.

Section II includes additional criteria for alignment to the Standards as well as indicators of quality. Instructional materials evaluated against the criteria in Section II will be rated on the following scale:

- **2 –** (meets criteria): A score of 2 means that the materials meet the full intention of the criterion in all grades.
- **1 –** (partially meets criteria): A score of 1 means that the materials meet the full intention of the criterion for some grades or meets the criterion in many aspects but not the full intent of the criterion.
- **0 –** (does not meet criteria): A score of 0 means that the materials do not meet many aspects of the criterion.

Section II(3). ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE	SCORE	JUSTIFICATION/NOTES
A. Materials connect the math practices to the content standards in meaningful and intentional ways, preferentially for Widely Applicable Prerequisites. The development of the practices is well-grounded in content and not in isolation.	2 1 0	
B. Materials include teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Problems and activities present opportunities for students to make use of and exhibit the practices as they work on content.	2 1 0	
C. Particular attention is given to:		
i. **MP3** – Construct viable arguments and critique the reasoning of others: Students are encouraged to create and test mathematical arguments, make generalizations and provide justifications, particularly in standards that explicitly call for it, in a manner of reasoning appropriate to the grade level.	2 1 0	

2 **MP4 –** Model with mathematics: Students should be given opportunities to apply mathematics learned in novel situations, with an appropriate tradeoff between the complexity and novelty of the problem and the newness of the content they are asked to use. Modeling problems should draw heavily from major work of the grade level or securely-held content, integrated across multiple domains/clusters where appropriate. Standards with explicit expectations for modeling are indicated with a star (★).	2 1 0	
Section II(4). COHERENCE	**SCORE**	**JUSTIFICATION/NOTES**
A. Connections are made within a course between clusters and domains, where these connections are appropriate and natural, as set forth by the Standards.	2 1 0	
2 For materials in a series, content progressions reflect the progressions as seen in the Standards*, including the development of the practices. These progression connections are clearly indicated in the materials. Any discrepancies in content progressions enhance the required learning in each course and are clearly aimed at helping students meet the Standards as written.	2 1 0	

*These progressions follow the progressions documents found on www.achievethecore.org.

High School Progression on Algebra
High School Progression on Functions
High School Progression on Modeling
High School Progression on Statistics and Probability

II(5). USABILITY	SCORE	JUSTIFICATION/NOTES
A. Materials support teachers in ways such as the following: planning (including ideas for pacing), introducing lessons, assessment types, vocabulary.	2 1 0	
B. Materials are clear and easy to read for students, teachers, parents. The design and graphics do not distract from the mathematics.	2 1 0	
C. Materials include supports for all learners, e.g., EL, students who are below grade level, advanced students.	2 1 0	

Please note any concerns with sensitivity below:

Appendix B, High School: Widely Applicable Prerequisites for College and Career Readiness

Number and Quantity	• N-RN, Real Numbers: Both clusters in this domain contain widely applicable prerequisites. • N-Q, Quantities: Every standard in this domain is a widely applicable prerequisite*. Note, this domain is especially important in the high school content standards overall as a widely applicable prerequisite.
Algebra	• Every domain in this category contains widely applicable prerequisites*. • Note, the A-SSE domain is especially important in the high school content standards overall as a widely applicable prerequisite.
Functions	• F-IF, Interpreting Functions: Every cluster in this domain contains widely applicable prerequisites*. • Additionally, standards F-BF.1 and F-LE.1 are relatively important within this category as widely applicable prerequisites.
Geometry	• The following standards and clusters are relatively important within this category as widely applicable prerequisites: G-CO.1, G-CO.9, G-CO.10, G-SRT.B, G-SRT.C • Note, the above standards in turn have learning prerequisites within the Geometry category, including: G-CO.A, G-CO.B, G-SRT.A.
Statistics and Probability	• The following standards are relatively important within this category as widely applicable prerequisites: S-ID.2, S-ID.7, S-IC.1 • Note, the above standards in turn have learning prerequisites within 6-8.SP.
Applying Key Takeways from 6-8**	Solving problems at a level of sophistication appropriate to high school by: • Applying ratios and proportional relationships. • Applying percentages and unit conversions, e.g., in the context of complicated measurement problems involving quantities with derived or compound units (such as mg/mL, kg/m3,acre-feet, etc.). • Applying basic function concepts, e.g., by interpreting the features of a graph in the context of an applied problem. • Applying concepts and skills of geometric measurement e.g., when analyzing a diagram or schematic. • Applying concepts and skills of basic statistics and probability (see 6-8.SP). • Performing rational number arithmetic fluently.

*Plus (+) standards are not included in these courses.

**See CCSSM, p. 84: "...some of the highest priority content for college and career readiness comes from Grades 6-8. This body of material includes powerfully useful proficiencies such s applying ratio reasoning in real-world and mathematical problems, computing fluently with positive and negative fractionsand decimals, and solving real-world and mathematical problems involving angle measure, area, surface area, and volume."

TNCore

TENNESSEE MATHEMATICS TEXTBOOK SCREENING INSTRUMENT, FURTHER COURSES

BEFORE YOU BEGIN
ALIGNMENT TO THE TENNESSEE STANDARDS: Evaluators of materials should understand the expectations of the standards within each course, including the courses that are taken before the further courses. Additionally, evaluators should be familiar with the Standards for Mathematical Practice from the CCSSM.
ORGANIZATION
SECTION I: NON-NEGOTIABLE ALIGNMENT CRITERIA All submissions must meet all of the non-negotiable criteria at each grade level to be aligned to TN Standards and before passing on to Section II. SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY Section II includes additional criteria for alignment to the standards as well as indicators of quality.
REVIEW
Evaluator: _____ Book: _____ Grade/Course: _____ Publisher: _____ Year: _____

SECTION I(1):
ALIGNMENT:
100% of the content standards are present in the materials for each course.

METRICS:

A. In any single course, 100% of the content standards are present in the materials for that course.	**Yes _____**	**No _____**
B. Topics from earlier courses are used to support course-level work. Content from prior courses is clearly indicated as such.	**Yes _____**	**No _____**

To be aligned to the TN standards, both indicators of Alignment must be marked Yes.	**Meet?** **Yes _____ No _____**

Justification/Notes

SECTION I(2):

RIGOR:

Each grade's instructional materials reflect the expectations of rigor by helping students develop conceptual understanding, procedural skill and fluency, and application.

METRICS:

A. High quality problems and questions designed to invite exploration and support conceptual understanding and are included for content standards and clusters that explicitly call for it. A variety of conceptual problems enable students to connect mathematical ideas and representations, and transfer understandings to new situations.	**Yes _____**	**No _____**
B. Materials support the development of fluency, including opportunities to practice algebraic manipulation and computation, appropriately apply tools, and use technology. Sometimes problems are purely procedural, none are based on non-mathematical tricks or mnemonics.	**Yes _____**	**No _____**
C. Students are given opportunity to apply mathematical knowledge and skills for standards that set a clear expectation for modeling. A variety of grade-level appropriate problems provide students the opportunity to apply mathematical models in a variety of contextual situations using knowledge and skills articulated in the standards prior to or during the current course.	**Yes _____**	**No _____**

To be aligned to the TN Standards, materials for each grade must attend to each element of rigor and must represent the balance reflected in the Standards. All four indicators must be marked Yes.	**Meet?** **Yes _____ No _____**

Justification/Notes

Were both non-negotiables in section I met? (Was each component marked “yes”?)	Yes _____ No _____

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY

Materials must meet both non-negotiable criteria in Section I to be aligned to the TN Standards and receive state approval.

Section II includes additional criteria for alignment to the Standards as well as indicators of quality. Instructional materials evaluated against the criteria in Section II will be rated on the following scale:

- **2 –** (meets criteria): A score of 2 means that the materials meet the full intention of the criterion in all grades.
- **1 –** (partially meets criteria): A score of 1 means that the materials meet the full intention of the criterion for some grades or meets the criterion in many aspects but not the full intent of the criterion.
- **0 –** (does not meet criteria): A score of 0 means that the materials do not meet many aspects of the criterion.

Section II(3). ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE	SCORE	JUSTIFICATION/NOTES
A. Materials connect the math practices to the content standards in meaningful and intentional ways. The development of the practices is well-grounded in content and not in isolation.	2 1 0	
B. Materials include teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Problems and activities present opportunities for students to make use of and exhibit the practices as they work on content.	2 1 0	
C. Particular attention is given to:		
i. **MP3** – Construct viable arguments and critique the reasoning of others: Students are encouraged to create and test mathematical arguments, make generalizations and provide justifications, particularly in standards that explicitly call for it, in a manner of reasoning appropriate to the course.	2 1 0	
ii. **MP4** – Model with mathematics: Students should be given opportunities to apply mathematics learned in novel situations, with an appropriate tradeoff between the complexity and novelty of the problem and the newness of the content they are asked to use. Modeling problems should draw heavily from major work of the grade level or securely-held content, integrated across multiple domains/clusters where appropriate. Standards with explicit expectations for modeling are indicated with a star (★).	2 1 0	

Section II(4). COHERENCE	SCORE	JUSTIFICATION/NOTES
A. Connections are made within a course between clusters and domains, where these connections are appropriate and natural.	2 1 0	
B. Materials are vertically coherent with previous courses and these connections are made clear in the materials. Materials include attention to the development of the math practices appropriate to the level of the course.	2 1 0	

II(5). USABILITY	SCORE	JUSTIFICATION/NOTES
A. Materials support teachers in ways such as the following: planning (including ideas for pacing), introducing lessons, assessment types, vocabulary.	2 1 0	
B. Materials are clear and easy to read for students, teachers, parents. The design and graphics do not distract from the mathematics.	2 1 0	
C. Materials include supports for all learners, e.g., EL, students who are below grade level, advanced students.	2 1 0	

Please note any concerns with sensitivity below: