Instructional Materials Evaluation - Student Standards Review

Louisiana educators engaged in a professional review of the state's academic standards for English language arts (ELA) and mathematics to ensure they continue to maintain strong expectations for teaching and learning aligned with college and workplace demands. The new ELA and math standards will be effective beginning with the 2016-2017 school year. As part of the Louisiana Department of Education's support for a seamless transition to these new standards, the LDOE identified the major changes of the standards and their potential impact upon criteria used to review instructional materials.

Title: **Discovery Education Math Techbook Algebra 1, Geometry, and Algebra 2** Grade: **9-11**

Publisher: **Discovery Education** Copyright: **2015**

Overall Rating: **Tier III, Not representing quality**

This Mathematics review has been examined for the following major shifts in alignment resulting from the Louisiana Student Standards Review:

- Include standards for money in grades K, 1, and 3 to ensure connections that provide smooth transitions from one grade to the next
- Provide developmentally appropriate content for all grades or courses while maintaining high expectations:
  - Additive area is moved to grade 4 from grade 3
  - The Statistics - Conditional Probability and the Rules of Probability (S-CP) domain is moved from Algebra II to Geometry
  - The standards provide extra clarity around the distinction between Algebra I and II

The following two indicators may be impacted:

- Focus on Major Work (Non-Negotiable)
- Consistent, Coherent Content (Non-Negotiable)

This review remains a Tier 3 rating. As a result of these changes, the following chart identifies the potential impact on specific elements in the current review. The LDOE recommends that district curriculum staff, principals, and teachers take these findings into consideration when using these instructional materials.

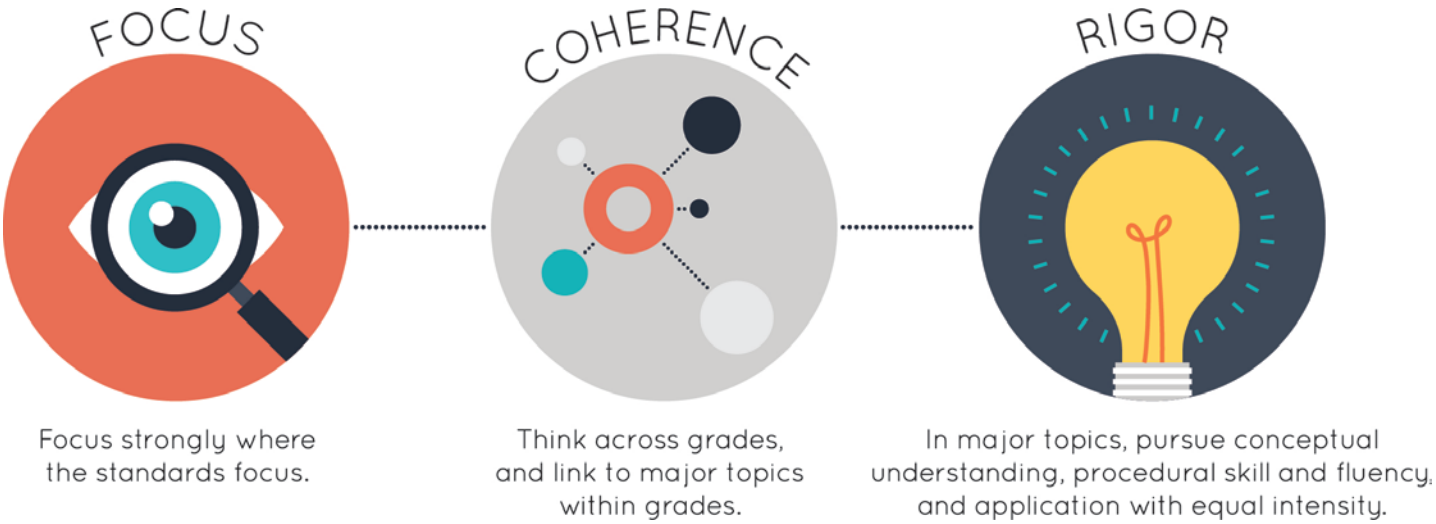
Criteria	Currently in the Rubric	Next Steps for Educators
Focus on Major Work (Non-Negotiable)	This program currently is reviewed as "No" for this criterion because the materials were not found to consistently devote the majority of class time to the major work of the grade and spend minimal time outside the appropriate grade level. Assessment items cover materials from other courses.	Since these materials received a "No" for this indicator, the current weakness will likely remain and should be addressed by adjusting or supplementing with stronger programs.
Consistent, Coherent Content (Non-Negotiable)	This program currently is reviewed as "Yes" for this criterion because meaningful connections are made between supporting content and major work of the grades. Materials make natural and important connections across domains as well as across clusters within domains.	Make sure to review instructional materials focused on new supporting content (e.g., money in Grades K and 1) to ensure it supports the major work of the grade/course.

DEPARTMENT of EDUCATION
Louisiana Believes

Instructional Materials Evaluation Review for Alignment in Mathematics Grades K – 12 (IMET)

FULL CURRICULUM
Instructional Materials

Strong mathematics instruction contains the following elements:



Title: **Discovery Education Math Techbook Algebra 1, Geometry, and Algebra 2** Grade/Course: **9-11**

Publisher: **Discovery Education** Copyright: **2015**

Overall Rating: **Tier III, Not representing quality**

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

STRONG	WEAK
2. Consistent, Coherent Content (Non-Negotiable)	1. Focus on Major Work (Non-Negotiable)
4. Focus Coh. via Practice Std (Non-Negotiable)	3. Rigor and Balance (Non-Negotiable) *
	* Strong at Grade 10

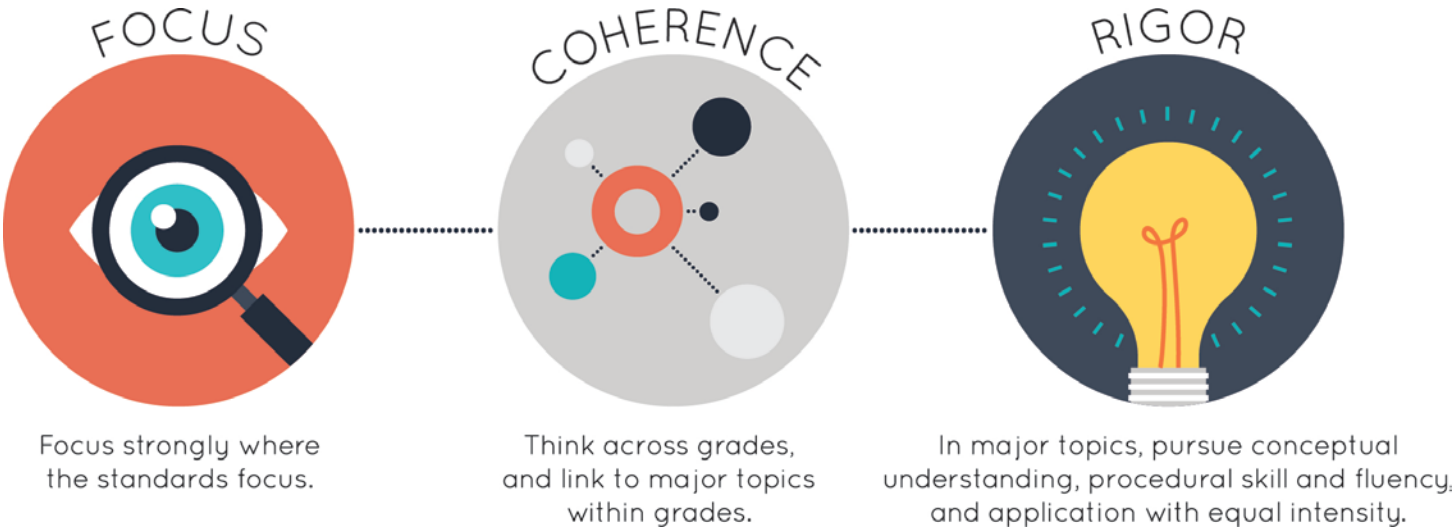
Each set of submitted materials was evaluated for alignment with the standards beginning with a review of the indicators for the non-negotiable criteria. If those criteria were met, a review of the other criteria ensued.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 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 9 (Tier 3) Grade 10 (Tier 3) Grade 11 (Tier 3)

Strong mathematics instruction contains the following elements:



Title: **Discovery Education Math Techbook Algebra 1** Grade/Course: **9**

Publisher: **Discovery Education** Copyright: **2015**

Overall Rating: **Tier III, Not representing quality**

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

STRONG	WEAK
2. Consistent, Coherent Content (Non-Negotiable)	1. Focus on Major Work (Non-Negotiable)
4. Focus Coh. via Practice Std (Non-Negotiable)	3. Rigor and Balance (Non-Negotiable)

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.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.			
Non-Negotiable **1. FOCUS ON MAJOR WORK[1]:** Students and teachers using the materials as designed devote the large majority[2] of time to the major work of the grade/course. ☐ Yes ☒ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The materials devote a large majority of the class time to the major work of the grade. The Discovery Education Algebra 1 curriculum is divided into 26 concepts. According to the publisher, 25 out of 26 concepts were major work of the grade. When delving further into the curriculum, it was found that 23 out of 26 (88%) concepts align to major content. Specifically, concepts 6.1, 6.3, and 7.3 do not align to major work for Algebra 1. Both 6.1 and 6.3 align to S-ID. Concept 7.3 aligns to N-Q.RN and A-SSE.3c.
	REQUIRED **1b)** In any one grade/course, aligned materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In aligned materials there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.[3]	**No**	There are unit assessment items that are aligned to standards from later courses. For instance, item #4 on Unit 4 assessment is asking students to find parallel and perpendicular lines through a given point given an equation of a line. This is a concept not introduced in the standards until Geometry and is aligned to the standard, G-GPE.B.5.
Non-Negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional materials are coherent and consistent with the content in the Standards.	**REQUIRED** **2a)** Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year.[4]	**Yes**	Meaningful connections are made between supporting content and major work for Algebra 1. Concept 3.1 requires students to use the definition of a function (F-IF.A.1) and function notation (F-IF.A.2) to compare functions in varying formats (F-IF.C.9). Another place where connections are made is in Concept 5.2 where students are asked to reason about units (A-NQ.3) while reasoning about constraints inherent in equations and inequalities (A-CED.3). Another example is in Concept 8.1, students write functions that describe relationships

[1] For more on the major work of the grade, see Focus by Grade Level.
[2] 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%.
[3] Refer also to criterion #2 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[4] Refer also to criterion #3 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
☒ Yes ☐ No			between two quantities (BF.1) at the same time they interpret the average rate of change over a specified interval (IF.6). Lastly, Concept 10.1 requires students to solve quadratic equations (HSA-REI-B.4b) and to use the graph of the quadratic to analyze key features (HSF-IF.C.8a).
	REQUIRED **2b)** Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important. [5]	**Yes**	Materials make natural and important connections between may of the mathematical topics covered in Algebra 1. These connections are meaningful and are made across domains as well as across clusters within domains. For example, Unit 1 connects different domains by connecting the Seeing Structure in Expressions (A-SSE) domain with the Creating Equations domain (A-CED). Concept 4.1, connects clusters in the Interpreting Functions domain by having students analyze the graphs of functions (F-IF.7a) to interpret graphs in terms of a context (F-IF.B).
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials 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.[6] ☐ Yes ☒ No	**REQUIRED** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	Important mathematical ideas are developed conceptually, where appropriate. Each lesson begins with a "Discover" section. Here, students progress through an introduction, different investigations, a summary, and an extension to build conceptual understanding of the topic. In Concept 2.1, students work to justify the solutions of equations given that the previous step was shown to be true (A-REI.1). Another example is in Concept 5.1 where students are solving equations and inequalities. Students are required to prove (A-REI.C.5) and explain (A-REI.D.11) the topic. Lastly, Concept 9.1: Perform Operations on Polynomials emphasizes conceptual standards that require students to interpret (A-SSE.A.1a and A-SSE.A.1b) and understand (A-APR.A.1) the given topic.

[5] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[6] Refer also to criterion #4 in the K–8 Publishers' Criteria and #2 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
	REQUIRED **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**No**	Relatively little emphasis is placed on procedural skill and fluency, where appropriate for the standards. Procedural skill is found in context of application type problems but not repeated in a manner in which students can gain fluency with the skill, as indicated by the standards. In the practice sets of Concept 5.1, students are given limited opportunity to graph solutions to linear inequalities (A-REI.D.12) in the sort of repeated way that encourages procedural skill. Similarly, little emphasis is placed on the procedural aspects of A-CED.4, where students should work to rearrange formulas with speed and accuracy.
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time working with engaging applications, without losing focus on the major work of each grade/course including ample practice with single-step and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade/course, afford opportunities for practice, and engage students in problem solving. The problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit.	**Yes**	Applications are attended to consistently throughout the curriculum. In addition to each model lesson beginning with a real-world problem, each section also has a distinct part called "Apply" which is focused on how math from the section might be used to solve a real-world application, often with a rich problem-solving context. For example, in Concept 5.1, students are asked to research local costs of pizzas, plates, and napkins from two different sources in order to create equations and graphs to determine how much pizza and the cost necessary to reach the predetermined goal using modeling standard A-CED.A.3. Another example can be found in the next Concept, 5.2. Students are asked to solve a complex problem aligned to A-CED.A.3 involving calculating and then evaluating the economic costs and environmental benefits of a local utility expanding solar power. A final example can be found in Concept 5.1 where students apply their knowledge of the topic to determine how much money they would have to save each month for college tuition using application standards HSF-IF.B.4, HSF-IF.B.5, and, HSF-BF.A.1.
	REQUIRED **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**No**	Each lesson is set up similarly to include conceptual and application problems. Students are given a foundation needed to gain a solid understanding of

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
			the concepts. However, the three aspects of rigor are not found in a separate manner throughout. Standards emphasizing procedural skill are seldom treated on their own. Instead, these standards are often treated as aspects of real-life application. For example, in Concept 5.1, students are asked to graph solutions of linear inequalities (A-REI.D.12) or rearrange formulas (A-CED.A.4), but these fluencies are never practiced on their own. (i.e., they are always part of an application problem). The three components of rigor are treated together throughout, but seldom, if at all, treated separately, where deemed appropriate by the standards.
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards.[7] ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the major work of the grade/course; practices strengthen the focus on major work instead of detracting from it, in both teacher and student materials.	**Yes**	In the teacher edition, under the Progressions and Standards domain, the mathematical practices for each concept are given. In addition, the mathematical practices are discussed for each concept. For instance, MP.4 and MP.1 are evident in how the program covers standards in the CED cluster. MP.4 and MP.1 are especially evident in the "Apply" sections that accompany each unit. For example, students are asked to write equations within modeling contexts where part of the work involves deciding what information is important (see the "How should a vendor stock an ice cream cart?" in Concept 2.1. Students will validate a claim and provide justification for their conclusions (MP.3) in Concept 6.1. Concept 7.3 also have students look closely to discern patterns in exponents to establish the relationship between rational exponents and radicals (MP.7).

[7] Refer also to criterion #8 in the K–8 Publishers' Criteria and #6 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013)

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY			
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☐ Yes ☐ No	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	5c) Materials base content progressions on the progressions in the Standards. [8]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	5d) Materials include learning objectives that are visibly shaped by CCSSM cluster headings and/or standards.[9]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	5e) Materials preserve the focus, coherence, and rigor of the Standards even when targeting specific objectives. [11]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include	**6a)** Careful Attention to Each Practice Standard: Materials attend to the full meaning of each practice standard.[10] Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard.[11] There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

[8] Refer also to criterion #5 in the K–8 Publishers' Criteria and #3 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[9] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[10] Refer also to criterion #9 in the K–8 Publishers' Criteria and #7 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[11] Refer also to criterion #7 in the K–8 Publishers' Criteria and #5 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
additional content/skills to teach which are not included in the Standards. ☐ Yes ☐ No	development. Alignments to practice standards are accurate.		
	6b) Materials Support the Standards' Emphasis on Mathematical Reasoning: Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems. [12]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6c) Materials explicitly attend to the specialized language of mathematics.[12]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. [13] ☐ Yes ☐ No	**7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7b) There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of students responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7c) Support for English Language Learners and other special populations is thoughtful and helps those	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

[12] Refer also to criterion #10 in the K–8 Publishers' Criteria and #8 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[13] Refer also to pages 18-20 in the K – 8 Publishers' Criteria and pages 16-18 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
	students meet the same standards as all other students. The language in which problems are posed is carefully considered.		
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7f) Materials support the uses of technology as called for in the Standards.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

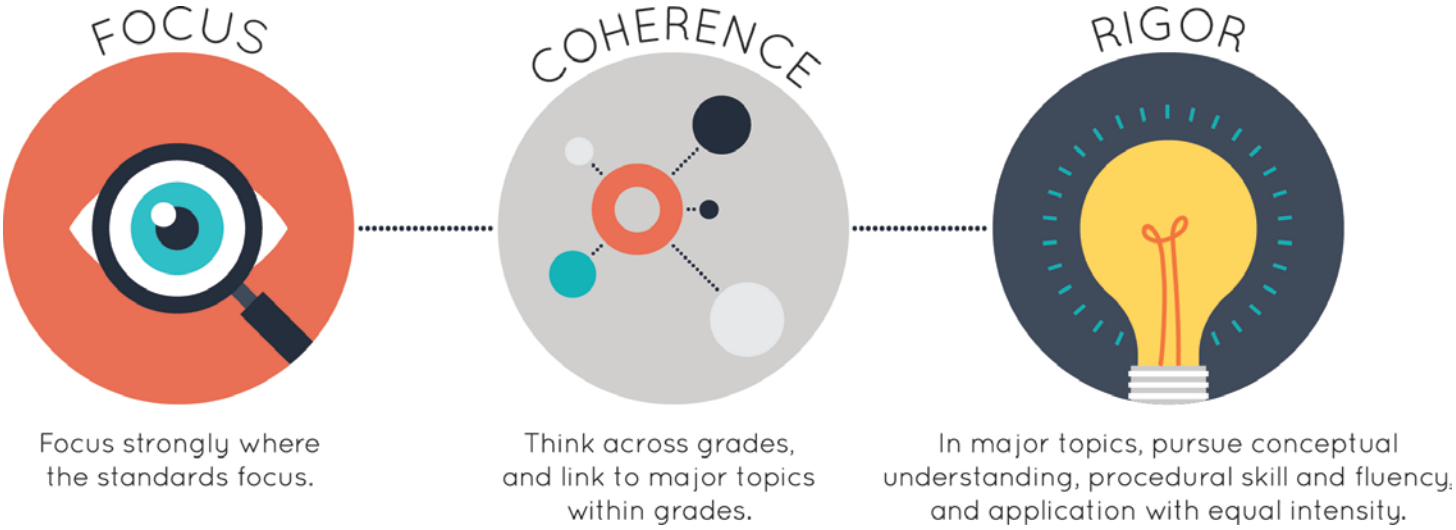
FINAL EVALUATION
Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

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. Focus on Major Work	**No**	Although 88% of the material was found to be major work of Algebra 1, there is material that shouldn't be introduced until later courses as well as assessment items aligned to standards that aren't introduced until later mathematics courses.
	2. Consistent, Coherent Content	**Yes**	Meaningful connections are made between supporting content and major work for Algebra 1. Materials make natural and important connections across domains as well as across clusters within domains.
	3. Rigor and Balance	**No**	While the materials develop conceptual concepts and provide application, procedural skill is not evident across the standards that require procedural skill and fluency. In addition, the three aspects of

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
			rigor are not always treated separately as called for by the standards.
	4. Focus and Coherence via Practice Standards	**Yes**	Practice standards are given throughout the course in the teacher guide as well as the student edition.
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6. Alignment Criteria for Standards for Mathematical Practice	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7. Indicators of Quality	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
FINAL DECISION FOR THIS MATERIAL: **Tier III, Not representing quality**			

Strong mathematics instruction contains the following elements:



Title: **Discovery Education Math Techbook Geometry** Grade/Course: **10**

Publisher: **Discovery Education** Copyright: **2015**

Overall Rating: **Tier III, Not representing quality**

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

STRONG	WEAK
2. Consistent, Coherent Content (Non-Negotiable)	1. Focus on Major Work (Non-Negotiable)
3. Rigor and Balance (Non-Negotiable)	
4. Focus Coh. via Practice Std (Non-Negotiable)	

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.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.			
Non-Negotiable **1. FOCUS ON MAJOR WORK[14]:** Students and teachers using the materials as designed devote the large majority[15] of time to the major work of the grade/course. ☐ Yes ☒ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The Discovery Education Geometry curriculum is divided into 22 concepts. According to information supplied by the publisher, 50% (11 out of 22) are major work of the grade. However, G-CO.A, G-CO.B, and G- SRT.A were also identified as clusters that support the learning of the other listed major work for Geometry. These standards are addressed in the following Concepts: 2.1, 2.2, 4.1, 5.1, 5.2, and 5.3. The inclusion of these standards actually raises the percentage of concepts focused on major work to 64% (14 out of 22) bringing the amount of class time devoted to the major work of the grade closer to the required 65%.
	REQUIRED **1b)** In any one grade/course, aligned materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In aligned materials there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.[16]	**No**	Some time is spent on standards outside of Geometry, including standards that should be introduced in courses taken after Geometry. For example, Concept 6.1: Investigate Right Triangle Trigonometry Session 5 states the following in the teacher edition: "In Investigation 4, students use an interactive to explore how trigonometry can be used to determine the area of a triangle. As a result of their exploration, students will derive the triangle area formula Area= 1/2 absinC". This topic correlates to G-SRT.D.9. The assessment for Concept 6 assess this in question number 5. Such a standard is outside of the high school geometry curriculum.
Non-Negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional	**REQUIRED** **2a)** Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year.[17]	**Yes**	Meaningful connections are made between supporting content and major work for Geometry, where such connections are natural and important. For instance, in Concept 1.2, students find the distance of a line (CO.1) using coordinates to find the perimeter of polygons using the distance

[14] For more on the major work of the grade, see Focus by Grade Level.
[15] 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%.
[16] Refer also to criterion #2 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[17] Refer also to criterion #3 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
materials are coherent and consistent with the content in the Standards. ☒ Yes ☐ No			formula (GPE.7). Another example is in Concept 1.3, students make geometric constructions (CO.12) while they prove theorems about geometric figures in the coordinate plane (GPE.4). Or, in Concept 4.2, students make constructions about geometric figures (CO.12, 13) while they are proving theorems about lines and angles (CO.9).
	REQUIRED **2b)** Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important. [18]	**Yes**	Materials make natural and important connections between may of the mathematical topics covered in Geometry. These connections are meaningful and are made across domains as well as across clusters within domains. For example, Unit 3: Intersecting lines connects different domains by connecting the congruence domain (CO) with the expression geometric properties with equations domain (GPE). Another instance is in Concept 5.2 where students work to prove theorems about triangles (CO.10) while they work to prove theorems involving similarity (SRT.B). An example of clusters in a domain being connected is in Concept 4.2. Students make constructions about geometric figures (CO.12, 13) while they are proving theorems about lines and angles (CO.9).
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials 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.[19]	**REQUIRED** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	Important mathematical ideas are developed conceptually, where appropriate. Each lesson begins with a "Discover" section. Here, students progress through an introduction, different investigations, a summary, and an extension to build conceptual understanding of the topic. For instance, in Concept 2.2, students use dynamic geometry software to explore rigid motions and transform figures (G-CO.B). Another example is in Concept 5.1 where students explore dilations through high-quality conceptual problems (in this case, the lesson and problems center around photo-editing software). Lastly, Concept 7.1 investigates circles and parts of

[18] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[19] Refer also to criterion #4 in the K–8 Publishers' Criteria and #2 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
☒ Yes ☐ No			circles where students are required to prove properties about chords, radii, and tangents (G-C.A.2)
	REQUIRED **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**Yes**	Students are given ample opportunity to attain the skills required by the standards. For instance, in Concept 3.1, per G-CO.12, students practice constructions using a variety of methods (including paper folding and dynamic geometry software). Also, students focus on the aspects of G-CO.5. in Concept 2.1, where students draw the transformed figure using geometry software. Concept 9.1 construct and explore polygons and focuses on standards G-C.A.3 and G-CO.D.13.
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time working with engaging applications, without losing focus on the major work of each grade/course including ample practice with single-step and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade/course, afford opportunities for practice, and engage students in problem solving. The problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit.	**Yes**	Applications are attended to consistently throughout the curriculum. In addition to each model lesson beginning with a real-world problem, each section also has a distinct part called "Apply" which is focused on how math from the section might be used to solve a real-world application, often with a rich problem-solving context. For example, in Concept 3.1, students explore constructions in the context of making origami figures. Or, in Concept 6.1, students investigate right triangle trigonometry by designing a ramp using application standard G-SRT.C.8. A last example can be found in Concept 10.2 where students delve into the G-MG standards with a problem asking students to figure the cost of printing a figure from a 3-D printer.
	REQUIRED **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together, yet they are not always treated separately. For example, in Concept 3.1, students focus on the fluency aspects of making formal geometric constructions, making these constructions devoid of any context. Yet, they also make these constructions within the context of a number of real-life geometric

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
			applications. Another example of when they are treated separately is in Concept 6.1. The standard G-SRT.C.8 focuses on application and when looking at the practice problems from this concept, they are mostly real-life application problems.
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards.[20] ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the major work of the grade/course; practices strengthen the focus on major work instead of detracting from it, in both teacher and student materials.	**Yes**	In the teacher edition, under the Progressions and Standards domain, the mathematical practices for each concept are given. In addition, the mathematical practices are discussed for each concept. For instance, MP.4 and MP.1 are evident in how the program covers standards in the MG cluster. MP.4 and MP.1 are especially evident in the "Apply" sections that accompany each unit. For example, students are asked to develop solutions in complex modeling contexts where information about units must be derived or where information about the context must be developed in an iterative way (see, for example, the "Apply" sections of Unit 10). In Concept 9.2, students are using MP.5 by using technological tools to construct parallelograms.
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY			
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards.	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

[20] Refer also to criterion #8 in the K–8 Publishers' Criteria and #6 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013)

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
☐ Yes ☐ No	**5c)** Materials base content progressions on the progressions in the Standards. [21]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	5d) Materials include learning objectives that are visibly shaped by CCSSM cluster headings and/or standards.[22]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	5e) Materials preserve the focus, coherence, and rigor of the Standards even when targeting specific objectives. [11]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☐ Yes ☐ No	**6a)** Careful Attention to Each Practice Standard: Materials attend to the full meaning of each practice standard.[23] Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard.[24] There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Alignments to practice standards are accurate.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6b) Materials Support the Standards' Emphasis on Mathematical Reasoning: Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems. [25]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6c) Materials explicitly attend to the specialized language	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

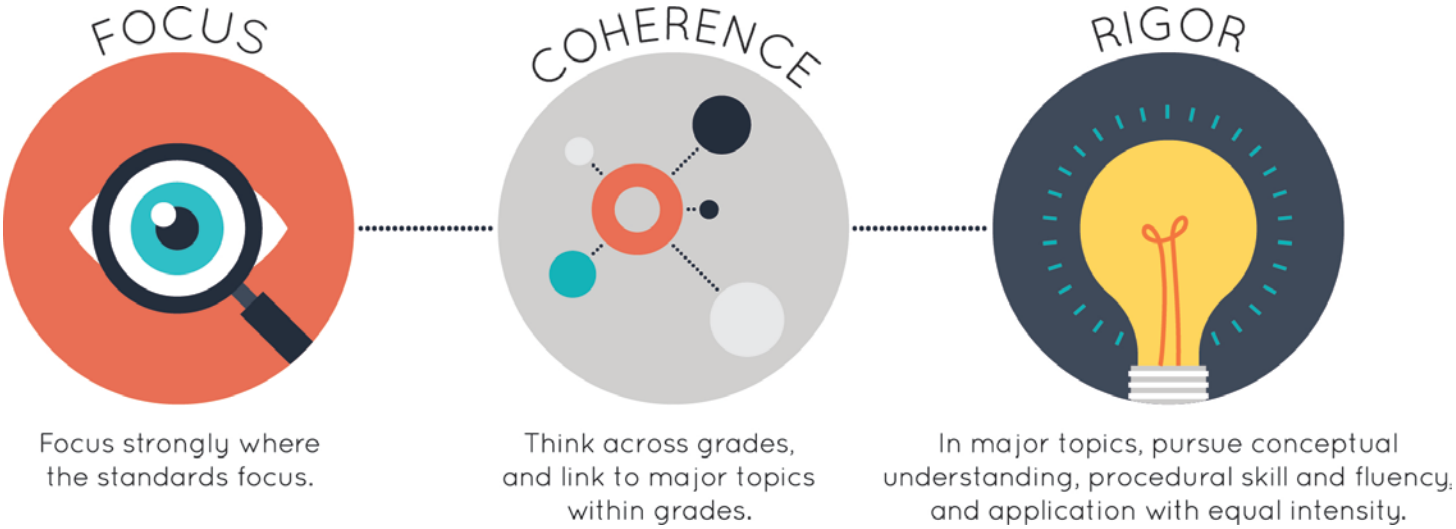
[21] Refer also to criterion #5 in the K–8 Publishers' Criteria and #3 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[22] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[23] Refer also to criterion #9 in the K–8 Publishers' Criteria and #7 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[24] Refer also to criterion #7 in the K–8 Publishers' Criteria and #5 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[25] Refer also to criterion #10 in the K–8 Publishers' Criteria and #8 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
	of mathematics.[12]		
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. [26] ☐ Yes ☐ No	**7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7b) There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of students responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7f) Materials support the uses of technology as called for in the Standards.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

[26] Refer also to pages 18-20 in the K – 8 Publishers' Criteria and pages 16-18 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
FINAL EVALUATION ***Tier 1 ratings*** receive a "Yes" in Column 1 for Criteria 1 – 7. ***Tier 2 ratings*** receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria. ***Tier 3 ratings*** receive a "No" in Column 1 for at least one of the non-negotiable criteria.			
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. Focus on Major Work	**No**	Less than 65% of the materials in Geometry is spent on major work. There are assessment items that are not introduced until later courses.
	2. Consistent, Coherent Content	**Yes**	Meaningful connections are made between supporting content and major work for Geometry. Materials make natural and important connections across domains as well as across clusters within domains.
	3. Rigor and Balance	**Yes**	All three aspects (Conceptual, Fluency, and Application) are present and meaningful to the coursework in Geometry.
	4. Focus and Coherence via Practice Standards	**Yes**	Practice standards are given throughout the course in the teacher guide as well as the student edition.
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6. Alignment Criteria for Standards for Mathematical Practice	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7. Indicators of Quality	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
FINAL DECISION FOR THIS MATERIAL: **Tier III, Not representing quality**			

Strong mathematics instruction contains the following elements:



Title: **Discovery Education Math Techbook Algebra 2** Grade/Course: **11**

Publisher: **Discovery Education** Copyright: **2015**

Overall Rating: **Tier III, Not representing quality**

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

STRONG	WEAK
2. Consistent, Coherent Content (Non-Negotiable)	1. Focus on Major Work (Non-Negotiable)
4. Focus Coh. via Practice Std (Non-Negotiable)	3. Rigor and Balance (Non-Negotiable)

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.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.			
Non-Negotiable **1. FOCUS ON MAJOR WORK[27]:** Students and teachers using the materials as designed devote the large majority[28] of time to the major work of the grade/course. ☐ Yes ☒ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**No**	Materials do not devote a large majority of class time to the major work of the grade. The Discovery Education curriculum is divided into 29 concepts. According to the publisher, 24 out of 29 (83%) concepts were major work of the grade. When delving further into the curriculum and looking at the "standards" section within each concept, it was found that 16 out of 29 (55%) concepts align to major content. Specifically, Concepts 1.2, 2.3, 3.2, 4.1, 4.2, 4.3, 5.1, 8.1, 9.2, 9.3, 10.1, 10.2, and 11.1 do not align to major work for Algebra II. For example, Lesson 1.2 is on inverse functions which covers standard, F-BF.B.4. The publisher indicated this lesson covered Major Work of Algebra II; however, the standards in this lesson actually represent Supporting or Additional Content of Algebra II.
	REQUIRED **1b)** In any one grade/course, aligned materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In aligned materials there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.[29]	**No**	Aligned materials spend minimal time on content outside of Algebra II. Content from previous courses (e.g., Algebra I) is found within the materials, but this content is primarily used to scaffold instruction. Despite this, there are assessment items that cover topics beyond Algebra II. For example, the Unit 8 assessment has many items, which cover graphing of Rational Functions (F-IF.7d) which is a standard taught beyond Algebra II. It should also be noted that according to the provided Algebra II Progressions and Standards for Concept 10.2: Apply the Rules of Probability, the lesson focuses on three standards (HSS.CPB.8, HSS.MD.6, and HSS.MD.B.7) that are not a part of the Algebra II curriculum.

[27] For more on the major work of the grade, see Focus by Grade Level.
[28] 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%.
[29] Refer also to criterion #2 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
Non-Negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional materials are coherent and consistent with the content in the Standards. ☒ Yes ☐ No	**REQUIRED** **2a)** Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year.[30]	**Yes**	Meaningful connections are made between supporting content and major work for Algebra II. For example, in Concept 6.3, students work to create and solve equations in one variable (A-CED.1) in the context of modeling real-life problems involving polynomial functions, including those where finding the zeros of polynomials is required (A-APR.3). Similarly, rewriting rational expressions (supporting content, A-APR.6) is introduced in Concept 7.1 as part of a larger discussion of rewriting expressions based on their structure (A-SSE.2, major content). Lastly, Concept 11.2 requires students to use an interactive simulation (S-IC.A.2) to determine the margin of error (S-IC.B.4).
	REQUIRED **2b)** Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important. [31]	**Yes**	Materials connect content across clusters and domains, where these connections are important for Algebra II. For example, Concept 9.2 connects two domains. As part of a unit on trigonometric functions (F-TF), students are asked to focus on the characteristics of the graphs of these functions (F-IF.7e). Concept 5.2 extend their understanding of linear and quadratic equations (A-REI.C.7) and will extend their understanding of solving linear system by graphing to encompass simple polynomial, rational, absolute value, exponential, and logarithmic functions (A-REI.D.11).
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding,	**REQUIRED** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	Important mathematical ideas are developed conceptually, where appropriate. Each lesson begins with a "Discover" section. Here, students progress through an introduction, different investigations, a summary, and an extension to build conceptual understanding of the topic. Concept 3.2 Sessions 1 and 2 features conceptual standard N-CN.A.1. Students complete tables, look for patterns, and rewrite expressions for imaginary numbers. In the problem set, students are asked questions that

[30] Refer also to criterion #3 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[31] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
procedural skill and fluency, and application.[32] ☐ Yes ☒ No			develop conceptual understanding of this (see 3.2 practice, coach mode, question 3). Another example of conceptual understanding is in Concept 6.1. The standard A-SSE.A.2 is developed conceptually with students. Students are asked to take expressions like x^2 - 16 and use that idea to make a conjecture about factoring x^4 - 16. Lastly, Concept 9.1 has students use pipe cleaners and other tools in order to understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle (F-TF.A.1). Students also are asked to make connections between circumference and radian measure. It should be noted there is a gap in the conceptual presentation of materials. For example, in Concept 3.1, students are introduced to rational exponents and their properties (see RN.1). However, this topic is not developed in a conceptual way (i.e. asking students how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values). Rather, the materials primarily focus on rewriting exponential expressions within the context of application problems.
	REQUIRED **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**No**	Relatively little emphasis is placed on procedural skill and fluency, where appropriate for the standards. Concept 1.2 covers inverse functions (F-BF.B.4). Looking through the investigations, check understanding, and practice for inverse functions, there is very little procedural skill practice. There are questions regarding inverse as it applies to the real world as well as other questions involving domain and graphing; however, there is very little practice finding inverses of functions. Similarly, this can be found with standard N-RN.A.2, a major standard of Algebra II. When looking at the standards document provided by the publisher, this standard should be found in Concept 3.1. When looking through the

[32] Refer also to criterion #4 in the K–8 Publishers' Criteria and #2 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
			materials, there is little evidence of this standard with 2 or 3 questions total throughout the practice, check understanding, and investigations. There is little to no practice with this procedural skill in Algebra II.
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time working with engaging applications, without losing focus on the major work of each grade/course including ample practice with single-step and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade/course, afford opportunities for practice, and engage students in problem solving. The problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit.	**Yes**	Applications are attended to consistently throughout the curriculum. In addition to each model lesson beginning with a real-world problem, each section also has a distinct part called "Apply" which is focused on how math from the section might be used to solve a real-world application, often with a rich problem-solving context. First, Concept 1.1: Explore Recursive Functions asks students to apply their knowledge of the topic to determine how many digits a phone number must have so that every person on the planet can have a different phone number using the application standards HSF-BF.A.1, HSF-BF.A.1a, and HSF-BF.A.2. Another example can be found in 6.1 where students choose and produce equivalent forms of expressions within a modeling context (SSE.3). Here, for example, students develop and test a game based on equivalent polynomial expressions. The students do the same thing in Concept 6.2. Students develop a board game that involves polynomial factors, intercepts, graphs, and other key elements.
	REQUIRED **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**No**	Each lesson is set up similarly to include conceptual and application problems. Students are given a foundation needed to gain a solid understanding of the concepts using these components of rigor. The three aspects of rigor are generally treated together, but are seldom treated separately, particularly when it comes to procedural understanding. Procedural standards (N-RN.2, for example), are treated as part of application problems. The same is true with inverse functions (F-BF.B.4). This is consistent throughout the instruction whether it be the Discover, Practice, Apply section of the Concepts.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards.[33] ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the major work of the grade/course; practices strengthen the focus on major work instead of detracting from it, in both teacher and student materials.	**Yes**	In the teacher edition, under the Progressions and Standards domain, the mathematical practices for each concept are given. In addition, the mathematical practices are discussed for each concept. There is an emphasis on MP.4 and MP.1 found in regular real-life application problems. For example, in Concept 3.2 determine how many workers a business might need by analyzing a quadratic function related to demand and profitability. In the course of this problem, students must represent the situation in a variety of ways, including graphically. Concept 2.4 will look for patterns in a table and express their findings using repeated reasoning, which is MP.8. MP.7 is also used in Concept 7.2 as students use the structure of rational inequalities to identify values of the variable for which the related rational function is equal to zero or undefined.
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY			
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☐ Yes ☐ No	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	5c) Materials base content progressions on the progressions in the Standards. [34]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

[33] Refer also to criterion #8 in the K–8 Publishers' Criteria and #6 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013)
[34] Refer also to criterion #5 in the K–8 Publishers' Criteria and #3 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
	5d) Materials include learning objectives that are visibly shaped by CCSSM cluster headings and/or standards.[35]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	5e) Materials preserve the focus, coherence, and rigor of the Standards even when targeting specific objectives. [11]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☐ Yes ☐ No	**6a)** Careful Attention to Each Practice Standard: Materials attend to the full meaning of each practice standard.[36] Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard.[37] There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Alignments to practice standards are accurate.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6b) Materials Support the Standards' Emphasis on Mathematical Reasoning: Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems. [38]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6c) Materials explicitly attend to the specialized language of mathematics.[12]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the	**7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way,	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

[35] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[36] Refer also to criterion #9 in the K–8 Publishers' Criteria and #7 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[37] Refer also to criterion #7 in the K–8 Publishers' Criteria and #5 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[38] Refer also to criterion #10 in the K–8 Publishers' Criteria and #8 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. [39] ☐ Yes ☐ No	arguments and explanations, diagrams, mathematical models, etc.		
	7b) There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of students responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7f) Materials support the uses of technology as called for in the Standards.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

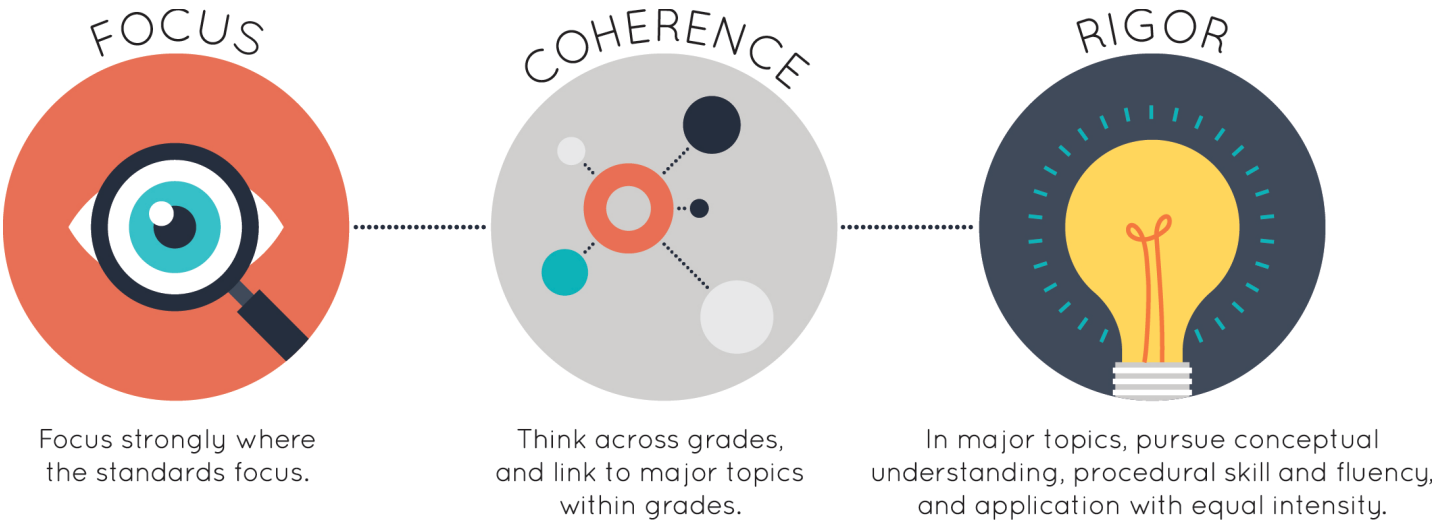
[39] Refer also to pages 18-20 in the K – 8 Publishers' Criteria and pages 16-18 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES
FINAL EVALUATION ***Tier 1 ratings*** receive a "Yes" in Column 1 for Criteria 1 – 7. ***Tier 2 ratings*** receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria. ***Tier 3 ratings*** receive a "No" in Column 1 for at least one of the non-negotiable criteria.			
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. Focus on Major Work	**No**	55% of the material is major work of Algebra II. Content outside of Algebra II is minimal and only used for scaffolding purposes.
	2. Consistent, Coherent Content	**Yes**	Meaningful connections are made between supporting content and major work for Algebra II. Materials make natural and important connections across domains as well as across clusters within domains.
	3. Rigor and Balance	**No**	While the materials develop conceptual concepts and provide application, procedural skill is not evident across the standards that require procedural skill and fluency. In addition, the three aspects of rigor are not always treated separately as called for by the standards.
	4. Focus and Coherence via Practice Standards	**Yes**	Practice standards are given throughout the course in the teacher guide as well as the student edition.
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6. Alignment Criteria for Standards for Mathematical Practice	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7. Indicators of Quality	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
FINAL DECISION FOR THIS MATERIAL: **Tier III, Not representing quality**			

Appendix I.

Publisher Response

Strong mathematics instruction contains the following elements:



Title: **Discovery Education Math Techbook Algebra 1, Geometry, and Algebra 2** Grade/Course: **9-11**

Publisher: **Discovery Education** Copyright: **2015**

Overall Rating: **Tier III, Not representing quality**

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

STRONG	WEAK
2. Consistent, Coherent Content (Non-Negotiable)	1. Focus on Major Work (Non-Negotiable)
4. Focus Coh. via Practice Std (Non-Negotiable)	3. Rigor and Balance (Non-Negotiable) *
	* Strong at Grade 10

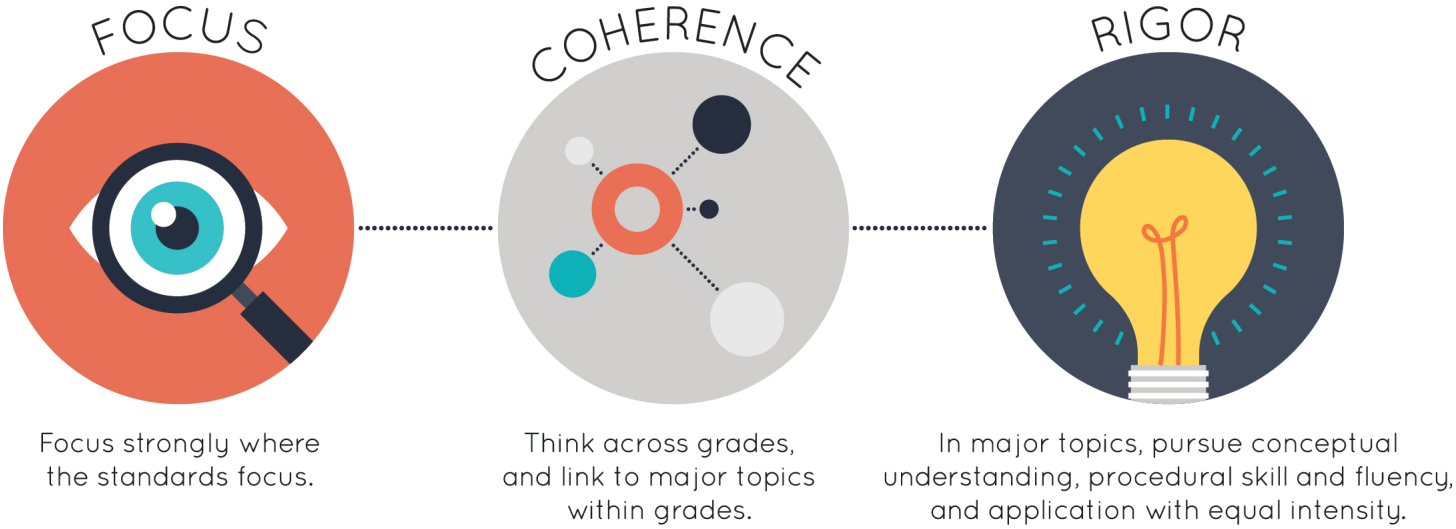
Each set of submitted materials was evaluated for alignment with the standards beginning with a review of the indicators for the non-negotiable criteria. If those criteria were met, a review of the other criteria ensued.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 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 9 (Tier 3) Grade 10 (Tier 3) Grade 11 (Tier 3)

Strong mathematics instruction contains the following elements:



Title: **Discovery Education Math Techbook Algebra 1** Grade/Course: **9**

Publisher: **Discovery Education** Copyright: **2015**

Overall Rating: **Tier III, Not representing quality**

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

STRONG	WEAK
2. Consistent, Coherent Content (Non-Negotiable)	1. Focus on Major Work (Non-Negotiable)
4. Focus Coh. via Practice Std (Non-Negotiable)	3. Rigor and Balance (Non-Negotiable)

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.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.				
Non-Negotiable **1. FOCUS ON MAJOR WORK[1]:** Students and teachers using the materials as designed devote the large majority[2] of time to the major work of the grade/course. ☐ Yes ☒ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The materials devote a large majority of the class time to the major work of the grade. The Discovery Education Algebra 1 curriculum is divided into 26 concepts. According to the publisher, 25 out of 26 concepts were major work of the grade. When delving further into the curriculum, it was found that 23 out of 26 (88%) concepts align to major content. Specifically, concepts 6.1, 6.3, and 7.3 do not align to major work for Algebra 1. Both 6.1 and 6.3 align to S-ID. Concept 7.3 aligns to N-Q.RN and A-SSE.3c.	
	REQUIRED **1b)** In any one grade/course, aligned materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In aligned materials there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.[3]	**No**	There are unit assessment items that are aligned to standards from later courses. For instance, item #4 on Unit 4 assessment is asking students to find parallel and perpendicular lines through a given point given an equation of a line. This is a concept not introduced in the standards until Geometry and is aligned to the standard, G-GPE.B.5.	The Publishers' Criteria for K-8 specifically states that content beyond the course should not be assessed; however, the Publishers' Criteria for High School does not have the same restriction. Because Algebra I falls outside the K-8 curriculum, assessment of this standard (at a very minimal level) seems to fall within the allowable recommendations. It should be noted that assessing topics beyond course level was done in very few instances, and nowhere were students expected to master the entirety of a standard from a subsequent course. In the Discovery Education design, care was taken to build understanding by strengthening the students' grasp on the major work of the course. For example, standard G-GPE.B.5 was included to provide opportunity for students to extend their understanding of linear equations in preparation for systems of linear equations, explored in the next concept, where students must identify situations where there are one, no, or infinitely many solutions. It is important to note that students are not expected to prove the slope criteria (the proof

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				happens in Geometry, in fulfillment of G-GPE.B.5), but students are asked to analyze and apply the slope criteria to strengthen procedural fluency of creating two-variable linear equations (A-CED.A.2), as we thought this was important for Algebra I.
Non-Negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional materials are coherent and consistent with the content in the Standards. ☒ Yes ☐ No	**REQUIRED** **2a)** Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year.[4]	**Yes**	Meaningful connections are made between supporting content and major work for Algebra 1. Concept 3.1 requires students to use the definition of a function (F-IF.A.1) and function notation (F-IF.A.2) to compare functions in varying formats (F-IF.C.9). Another place where connections are made is in Concept 5.2 where students are asked to reason about units (A-NQ.3) while reasoning about constraints inherent in equations and inequalities (A-CED.3). Another example is in Concept 8.1, students write functions that describe relationships between two quantities (BF.1) at the same time they interpret the average rate of change over a specified interval (IF.6). Lastly, Concept 10.1 requires students to solve quadratic equations (HSA-REI-B.4b) and to use the graph of the quadratic to analyze key features (HSF-IF.C.8a).	
	REQUIRED **2b)** Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important. [5]	**Yes**	Materials make natural and important connections between may of the mathematical topics covered in Algebra 1. These connections are meaningful and are made across domains as well as across clusters within domains. For example, Unit 1 connects different domains by connecting the Seeing Structure in Expressions (A-SSE) domain with the Creating Equations domain (A-CED). Concept 4.1, connects clusters in the Interpreting Functions domain by having students analyze the graphs of functions (F-IF.7a) to interpret graphs in terms of a context (F-IF.B).	

[4] Refer also to criterion #3 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[5] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials 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.[6] ☐ Yes ☒ No	**REQUIRED** **3a) *Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	Important mathematical ideas are developed conceptually, where appropriate. Each lesson begins with a "Discover" section. Here, students progress through an introduction, different investigations, a summary, and an extension to build conceptual understanding of the topic. In Concept 2.1, students work to justify the solutions of equations given that the previous step was shown to be true (A-REI.1). Another example is in Concept 5.1 where students are solving equations and inequalities. Students are required to prove (A-REI.C.5) and explain (A-REI.D.11) the topic. Lastly, Concept 9.1: Perform Operations on Polynomials emphasizes conceptual standards that require students to interpret (A-SSE.A.1a and A-SSE.A.1b) and understand (A-APR.A.1) the given topic.	
	REQUIRED **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**No**	Relatively little emphasis is placed on procedural skill and fluency, where appropriate for the standards. Procedural skill is found in context of application type problems but not repeated in a manner in which students can gain fluency with the skill, as indicated by the standards. In the practice sets of Concept 5.1, students are given limited opportunity to graph solutions to linear inequalities (A-REI.D.12) in the sort of repeated way that encourages procedural skill. Similarly, little emphasis is placed on the procedural aspects of A-CED.4, where students should work to rearrange formulas with speed and accuracy.	Discovery Education Math Techbook is dividied into units, and each unit is subdivided into concepts. Each concept develops student understanding through the Discover, Practie, and Apply cycle. The development of procedural skill and fluency is included in all three sections of every concept, demonstrating a significant emphasis on procedural skill and fluecny where appropriate for the standards. Opportunities to develop procedural skills and build fluency occur through the Investigations in the Discover section. Each Discover section also includes Checks for Understanding that appear at the bottom of each Investigation. The entire Practice section, which includes a Coach section with structured feedback and a Play section with more opportunities for practice, is the centerpiece of each concept. In the Apply section, students have additional opportunities to apply their procudral skills through 2-3 multi-step, real-world problems. Additional opportunities to develop fluency are provided by the Math Assessment Builder feature supplied to all

[6] Refer also to criterion #4 in the K–8 Publishers' Criteria and #2 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				Math Techbook subscribers. Not including the Math Assessment Builder items, there are over 5,000 individual practice items within Discovery Education Math Techbook. Specifically, A-CED.4 is first introduced in Unit 2, Concept 2, where students develop understanding and skills in rearranging formulas. There are multiple opportunities to build fluency wiithin the Investigations, Checks For Understanding, and Practice items. In Unit 5, Concept 1, students apply and extend this learning of A-CED.A.4 as well as their understanding of linear functions from Unit 4 as they develop A-CED.A.2 and A-REI.D.12. As a very specific example, at least 17 practice items corresponding to A-REI.D.12, graphing inequalities, are available to students in the Discover and Practice sections; more are available from the Math Assessment Builder. In addition, students continue to practice this skill in Unit 5, Concept 2, where they have to graph linear inequalities while they explore linear programming.
	REQUIRED **3c)** ***Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time working with engaging applications, without losing focus on the major work of each grade/course including ample practice with single-step and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade/course, afford opportunities for practice, and engage students in problem solving. The problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit.	**Yes**	Applications are attended to consistently throughout the curriculum. In addition to each model lesson beginning with a real-world problem, each section also has a distinct part called "Apply" which is focused on how math from the section might be used to solve a real-world application, often with a rich problem-solving context. For example, in Concept 5.1, students are asked to research local costs of pizzas, plates, and napkins from two different sources in order to create equations and graphs to determine how much pizza and the cost necessary to reach the predetermined goal using modeling standard A-CED.A.3. Another example can be found in the next Concept, 5.2. Students are asked to solve a complex problem aligned to A-CED.A.3 involving calculating and then evaluating the economic costs and environmental benefits of a local utility expanding solar power. A	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			final example can be found in Concept 5.1 where students apply their knowledge of the topic to determine how much money they would have to save each month for college tuition using application standards HSF-IF.B.4, HSF-IF.B.5, and, HSF-BF.A.1.	
	REQUIRED **3d)** ***Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**No**	Each lesson is set up similarly to include conceptual and application problems. Students are given a foundation needed to gain a solid understanding of the concepts. However, the three aspects of rigor are not found in a separate manner throughout. Standards emphasizing procedural skill are seldom treated on their own. Instead, these standards are often treated as aspects of real-life application. For example, in Concept 5.1, students are asked to graph solutions of linear inequalities (A-REI.D.12) or rearrange formulas (A-CED.A.4), but these fluencies are never practiced on their own. (i.e., they are always part of an application problem). The three components of rigor are treated together throughout, but seldom, if at all, treated separately, where deemed appropriate by the standards.	The three aspects of rigor are treated both together and separately within each of the three components of Math Techbook. When reviewing the product, it is essential to look into each section of a concept: Discover, Practice, and Apply. In the Discoer section, the three aspects of rigor are treated together while introducing the concept, and then treated separately through the Check For Understanding at the end of each Investigation. The items within Practice treat procedural aspects of rigor, then all three aspects of rigor are brought together again in the Apply section. Specifically, A-CED.4 is first introduced in Unit 2, Concept 2, where students develop understanding and skills in rearranging formulas. There are multiple opportunities to build fluency wiithin the Investigations, Checks For Understanding, and Practice items. In Unit 5, Concept 1, students apply and extend this learning as they develop A-CED.A.2 and A-REI.D.12, both of which build from the skills developed in Unit 4.
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards.[7] ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the major work of the grade/course; practices strengthen the focus on major work instead of detracting from it, in both teacher and student materials.	**Yes**	In the teacher edition, under the Progressions and Standards domain, the mathematical practices for each concept are given. In addition, the mathematical practices are discussed for each concept. For instance, MP.4 and MP.1 are evident in how the program covers standards in the CED cluster. MP.4 and MP.1 are especially evident in the "Apply" sections that accompany each unit. For example, students are asked to write equations within modeling contexts where part of the work involves deciding what information is important (see the "How should a vendor stock an ice cream cart?"	

[7] Refer also to criterion #8 in the K–8 Publishers' Criteria and #6 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013)

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			in Concept 2.1. Students will validate a claim and provide justification for their conclusions (MP.3) in Concept 6.1. Concept 7.3 also have students look closely to discern patterns in exponents to establish the relationship between rational exponents and radicals (MP.7).	
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY				
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☐ Yes ☐ No	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	5c) Materials base content progressions on the progressions in the Standards.[8]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	5d) Materials include learning objectives that are visibly shaped by CCSSM cluster headings and/or standards.[9]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	5e) Materials preserve the focus, coherence, and rigor of the Standards even when targeting specific objectives.[11]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

[8] Refer also to criterion #5 in the K–8 Publishers' Criteria and #3 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[9] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

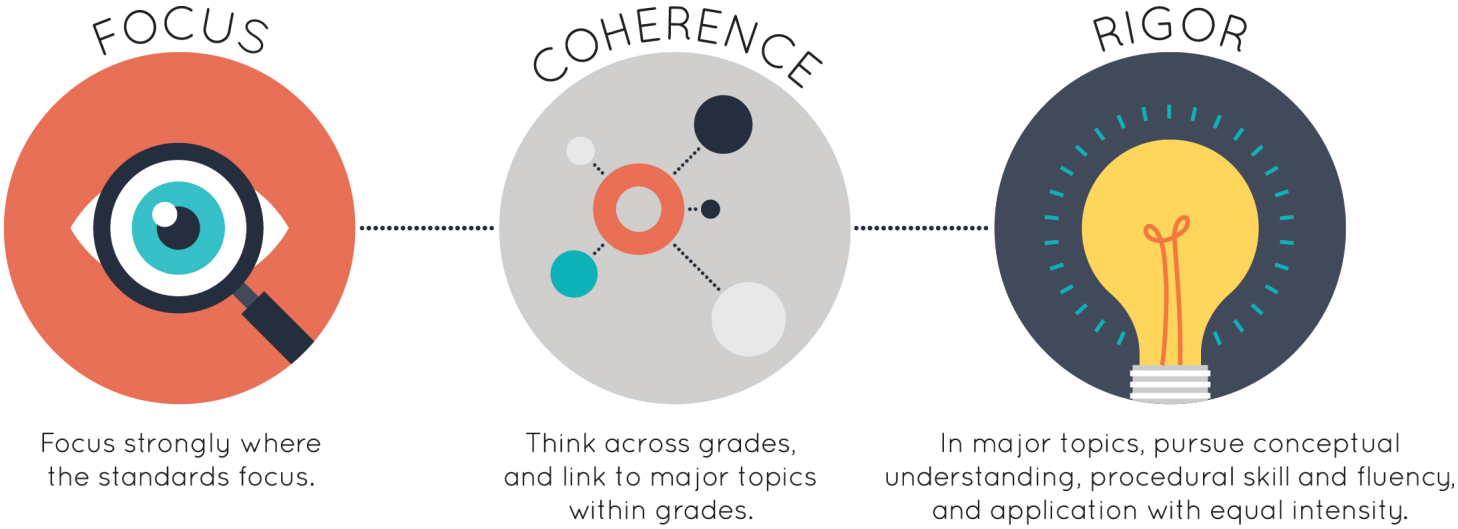
CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☐ Yes ☐ No	**6a)** Careful Attention to Each Practice Standard: Materials attend to the full meaning of each practice standard.[10] Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard.[11] There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Alignments to practice standards are accurate.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	6b) Materials Support the Standards' Emphasis on Mathematical Reasoning: Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems.[12]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	6c) Materials explicitly attend to the specialized language of mathematics.[12]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards.[13]	**7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7b) There are separate teacher materials that support and reward teacher study including, but not limited to:	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

[10] Refer also to criterion #9 in the K–8 Publishers' Criteria and #7 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[11] Refer also to criterion #7 in the K–8 Publishers' Criteria and #5 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[12] Refer also to criterion #10 in the K–8 Publishers' Criteria and #8 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[13] Refer also to pages 18-20 in the K – 8 Publishers' Criteria and pages 16-18 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
☐ Yes ☐ No	discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of students responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.			
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7f) Materials support the uses of technology as called for in the Standards.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
FINAL EVALUATION ***Tier 1 ratings*** receive a "Yes" in Column 1 for Criteria 1 – 7. ***Tier 2 ratings*** receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria. ***Tier 3 ratings*** receive a "No" in Column 1 for at least one of the non-negotiable criteria.				
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. Focus on Major Work	**No**	Although 88% of the material was found to be major work of Algebra 1, there is material that shouldn't be introduced until later courses as well as assessment items aligned to standards that aren't	Please see the response to Criterion 1b, above.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			introduced until later mathematics courses.	
	2. Consistent, Coherent Content	**Yes**	Meaningful connections are made between supporting content and major work for Algebra 1. Materials make natural and important connections across domains as well as across clusters within domains.	
	3. Rigor and Balance	**No**	While the materials develop conceptual concepts and provide application, procedural skill is not evident across the standards that require procedural skill and fluency. In addition, the three aspects of rigor are not always treated separately as called for by the standards.	Please see the response to Criteria 3b and 3d
	4. Focus and Coherence via Practice Standards	**Yes**	Practice standards are given throughout the course in the teacher guide as well as the student edition.	
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	6. Alignment Criteria for Standards for Mathematical Practice	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7. Indicators of Quality	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
FINAL DECISION FOR THIS MATERIAL: **Tier III, Not representing quality**				

Strong mathematics instruction contains the following elements:



Title: **Discovery Education Math Techbook Geometry** Grade/Course: **10**

Publisher: **Discovery Education** Copyright: **2015**

Overall Rating: **Tier III, Not representing quality**

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

STRONG	WEAK
2. Consistent, Coherent Content (Non-Negotiable)	1. Focus on Major Work (Non-Negotiable)
3. Rigor and Balance (Non-Negotiable)	
4. Focus Coh. via Practice Std (Non-Negotiable)	

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.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.				
Non-Negotiable **1. FOCUS ON MAJOR WORK[14]:** Students and teachers using the materials as designed devote the large majority[15] of time to the major work of the grade/course. ☐ Yes ☒ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The Discovery Education Geometry curriculum is divided into 22 concepts. According to information supplied by the publisher, 50% (11 out of 22) are major work of the grade. However, G-CO.A, G-CO.B, and G- SRT.A were also identified as clusters that support the learning of the other listed major work for Geometry. These standards are addressed in the following Concepts: 2.1, 2.2, 4.1, 5.1, 5.2, and 5.3. The inclusion of these standards actually raises the percentage of concepts focused on major work to 64% (14 out of 22) bringing the amount of class time devoted to the major work of the grade closer to the required 65%.	
	REQUIRED **1b)** In any one grade/course, aligned materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In aligned materials there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.[16]	**No**	Some time is spent on standards outside of Geometry, including standards that should be introduced in courses taken after Geometry. For example, Concept 6.1: Investigate Right Triangle Trigonometry Session 5 states the following in the teacher edition: "In Investigation 4, students use an interactive to explore how trigonometry can be used to determine the area of a triangle. As a result of their exploration, students will derive the triangle area formula Area= 1/2 absinC". This topic correlates to G-SRT.D.9. The assessment for Concept 6 assess this in question number 5. Such a standard is outside of the high school geometry curriculum.	The Publishers' Criteria for K-8 specifically states that content beyond the course should not be assessed; however, the Publishers' Criteria for High School does not have the same restriction. Because Geometry is outside the K-8 curriculum, assessment of the (+) standards (at a very minimal level) seems to fall within the allowable recommendations. It should be noted that assessing topics beyond course level was done in very few instances, and nowhere were students expected to master the entirety of a standard from a subsequent course. In the Discoery Education design, care was taken to build understanding by strengthening the students' grasp on the major work of the course. For example, standard G-SRT.D.9 was included to provide opportunity for students to extend their understanding of the application of right triangle trigonometry and strengthen procedural fluency.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
Non-Negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional materials are coherent and consistent with the content in the Standards. ☒ Yes ☐ No	**REQUIRED** **2a)** Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year.[17]	**Yes**	Meaningful connections are made between supporting content and major work for Geometry, where such connections are natural and important. For instance, in Concept 1.2, students find the distance of a line (CO.1) using coordinates to find the perimeter of polygons using the distance formula (GPE.7). Another example is in Concept 1.3, students make geometric constructions (CO.12) while they prove theorems about geometric figures in the coordinate plane (GPE.4). Or, in Concept 4.2, students make constructions about geometric figures (CO.12, 13) while they are proving theorems about lines and angles (CO.9).	
	REQUIRED **2b)** Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important. [18]	**Yes**	Materials make natural and important connections between may of the mathematical topics covered in Geometry. These connections are meaningful and are made across domains as well as across clusters within domains. For example, Unit 3: Intersecting lines connects different domains by connecting the congruence domain (CO) with the expression geometric properties with equations domain (GPE). Another instance is in Concept 5.2 where students work to prove theorems about triangles (CO.10) while they work to prove theorems involving similarity (SRT.B). An example of clusters in a domain being connected is in Concept 4.2. Students make constructions about geometric figures (CO.12, 13) while they are proving theorems about lines and angles (CO.9).	
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous	**REQUIRED** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion	**Yes**	Important mathematical ideas are developed conceptually, where appropriate. Each lesson begins with a "Discover" section. Here, students progress through an introduction, different investigations, a summary, and an extension to build conceptual understanding of the topic. For instance, in Concept 2.2, students use dynamic geometry software to	

[17] Refer also to criterion #3 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[18] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application.[19] ☒ Yes ☐ No	questions.		explore rigid motions and transform figures (G-CO.B). Another example is in Concept 5.1 where students explore dilations through high-quality conceptual problems (in this case, the lesson and problems center around photo-editing software). Lastly, Concept 7.1 investigates circles and parts of circles where students are required to prove properties about chords, radii, and tangents (G-C.A.2)	
	REQUIRED **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**Yes**	Students are given ample opportunity to attain the skills required by the standards. For instance, in Concept 3.1, per G-CO.12, students practice constructions using a variety of methods (including paper folding and dynamic geometry software). Also, students focus on the aspects of G-CO.5. in Concept 2.1, where students draw the transformed figure using geometry software. Concept 9.1 construct and explore polygons and focuses on standards G-C.A.3 and G-CO.D.13.	
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time working with engaging applications, without losing focus on the major work of each grade/course including ample practice with single-step and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade/course, afford opportunities for practice, and engage students in problem solving. The problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit.	**Yes**	Applications are attended to consistently throughout the curriculum. In addition to each model lesson beginning with a real-world problem, each section also has a distinct part called "Apply" which is focused on how math from the section might be used to solve a real-world application, often with a rich problem-solving context. For example, in Concept 3.1, students explore constructions in the context of making origami figures. Or, in Concept 6.1, students investigate right triangle trigonometry by designing a ramp using application standard G-SRT.C.8. A last example can be found in Concept 10.2 where students delve into the G-MG standards with a problem asking students to figure the cost of printing a figure from a 3-D printer.	

[19] Refer also to criterion #4 in the K–8 Publishers' Criteria and #2 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	REQUIRED **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together, yet they are not always treated separately. For example, in Concept 3.1, students focus on the fluency aspects of making formal geometric constructions, making these constructions devoid of any context. Yet, they also make these constructions within the context of a number of real-life geometric applications. Another example of when they are treated separately is in Concept 6.1. The standard G-SRT.C.8 focuses on application and when looking at the practice problems from this concept, they are mostly real-life application problems.	
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards.[20] ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the major work of the grade/course; practices strengthen the focus on major work instead of detracting from it, in both teacher and student materials.	**Yes**	In the teacher edition, under the Progressions and Standards domain, the mathematical practices for each concept are given. In addition, the mathematical practices are discussed for each concept. For instance, MP.4 and MP.1 are evident in how the program covers standards in the MG cluster. MP.4 and MP.1 are especially evident in the "Apply" sections that accompany each unit. For example, students are asked to develop solutions in complex modeling contexts where information about units must be derived or where information about the context must be developed in an iterative way (see, for example, the "Apply" sections of Unit 10). In Concept 9.2, students are using MP.5 by using technological tools to construct parallelograms.	
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY				
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

[20] Refer also to criterion #8 in the K–8 Publishers' Criteria and #6 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013)

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☐ Yes ☐ No	specific responsibility is for the current year.[10]			
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	5c) Materials base content progressions on the progressions in the Standards. [21]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	5d) Materials include learning objectives that are visibly shaped by CCSSM cluster headings and/or standards.[22]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	5e) Materials preserve the focus, coherence, and rigor of the Standards even when targeting specific objectives. [11]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the	**6a)** Careful Attention to Each Practice Standard: Materials attend to the full meaning of each practice standard.[23] Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard.[24] There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Alignments to practice standards are accurate.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

[21] Refer also to criterion #5 in the K–8 Publishers' Criteria and #3 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[22] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[23] Refer also to criterion #9 in the K–8 Publishers' Criteria and #7 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[24] Refer also to criterion #7 in the K–8 Publishers' Criteria and #5 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

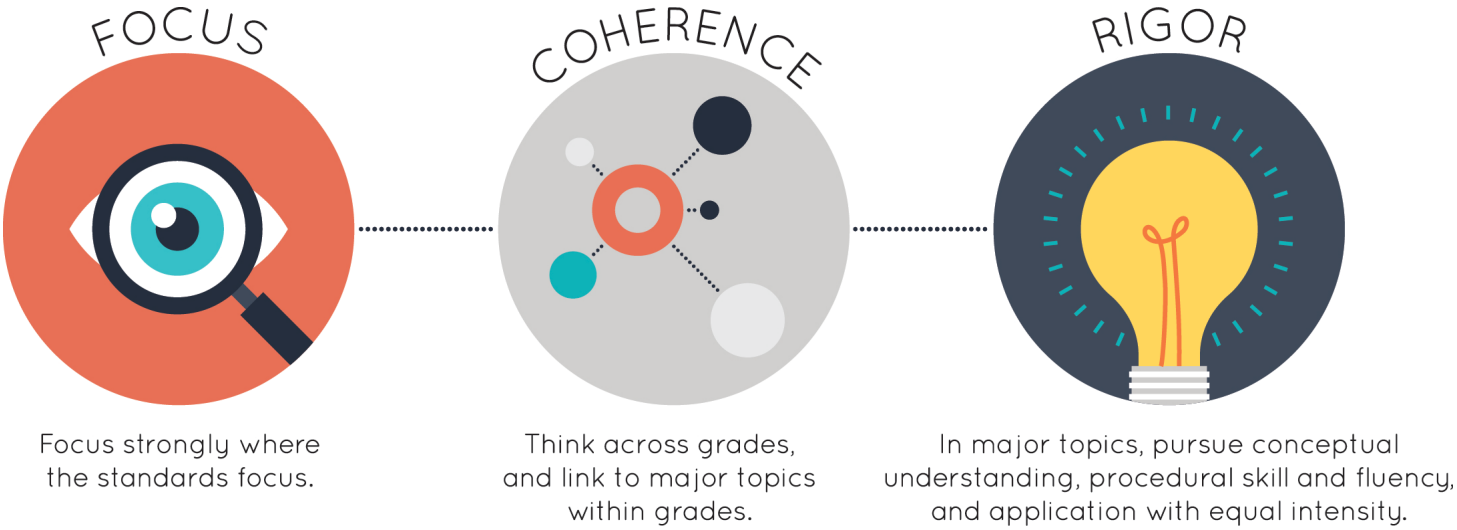
CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
Standards. ☐ Yes ☐ No	**6b)** Materials Support the Standards' Emphasis on Mathematical Reasoning: Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems. [25]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	6c) Materials explicitly attend to the specialized language of mathematics.[12]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. [26] ☐ Yes ☐ No	**7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7b) There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of students responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

[25] Refer also to criterion #10 in the K–8 Publishers' Criteria and #8 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[26] Refer also to pages 18-20 in the K – 8 Publishers' Criteria and pages 16-18 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7f) Materials support the uses of technology as called for in the Standards.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
FINAL EVALUATION ***Tier 1 ratings*** receive a "Yes" in Column 1 for Criteria 1 – 7. ***Tier 2 ratings*** receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria. ***Tier 3 ratings*** receive a "No" in Column 1 for at least one of the non-negotiable criteria.				
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. Focus on Major Work	**No**	Less than 65% of the materials in Geometry is spent on major work. There are assessment items that are not introduced until later courses.	Please see the response to Criterion 1b, above.
	2. Consistent, Coherent Content	**Yes**	Meaningful connections are made between supporting content and major work for Geometry. Materials make natural and important connections across domains as well as across clusters within domains.	
	3. Rigor and Balance	**Yes**	All three aspects (Conceptual, Fluency, and Application) are present and meaningful to the coursework in Geometry.	
	4. Focus and Coherence via Practice Standards	**Yes**	Practice standards are given throughout the course in the teacher guide as well as the student edition.	
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	6. Alignment Criteria for Standards for Mathematical Practice	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7. Indicators of Quality	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
FINAL DECISION FOR THIS MATERIAL: **Tier III, Not representing quality**				

Strong mathematics instruction contains the following elements:



Title: **Discovery Education Math Techbook Algebra 2** Grade/Course: **11**

Publisher: **Discovery Education** Copyright: **2015**

Overall Rating: **Tier III, Not representing quality**

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

STRONG	WEAK
2. Consistent, Coherent Content (Non-Negotiable)	1. Focus on Major Work (Non-Negotiable)
4. Focus Coh. via Practice Std (Non-Negotiable)	3. Rigor and Balance (Non-Negotiable)

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.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.				
Non-Negotiable **1. FOCUS ON MAJOR WORK[27]:** Students and teachers using the materials as designed devote the large majority[28] of time to the major work of the grade/course. ☐ Yes ☒ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**No**	Materials do not devote a large majority of class time to the major work of the grade. The Discovery Education curriculum is divided into 29 concepts. According to the publisher, 24 out of 29 (83%) concepts were major work of the grade. When delving further into the curriculum and looking at the "standards" section within each concept, it was found that 16 out of 29 (55%) concepts align to major content. Specifically, Concepts 1.2, 2.3, 3.2, 4.1, 4.2, 4.3, 5.1, 8.1, 9.2, 9.3, 10.1, 10.2, and 11.1 do not align to major work for Algebra II. For example, Lesson 1.2 is on inverse functions which covers standard, F-BF.B.4. The publisher indicated this lesson covered Major Work of Algebra II; however, the standards in this lesson actually represent Supporting or Additional Content of Algebra II.	Many of the focus standards for Algebra II are covered initially but then addressed again in later units. When these standards occur in later units, they are not always listed in the Model Lesson, because they are not the primary standards for that unit, but they receive significant attention. We believe that the method used to count which concepts in Math Techbook align to major work is misguided. Many concepts in the later units may have up to 49% of their material aligned with the major work standards, but the binary approach (either "it is" or "it isn't") doesn't give credit where credit is due. Extreme care was taken in the design of Math Techbook to ensure that students regularly revisit important ideas. Consequently, the "16 out of 29" assertion does not account for the fact that later units revisit major work. The integration of the focus standards within those units increase the percentage of focus on Major Work to 83%. Unit 1, Concept 2, and Unit 2, Concept 3, use focus standards within the investigations to develop these supporting concepts. Further, these supporting concepts in turn are critical to meet the needs of conceptual development in Unit 2, Concept 4, to ensure mastery of the standards F-BF.B.5 and F-LE.A.4. Unit 3, Concept 2 uses complex numbers, which are additional content, to assist in building fluency and conceptual development of focus standards in A-APR.3, F-BF.3, and A-REI.6.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				Unit 8, Concept 1, Unit 9, Concept 2, and Unit 9, Concept 3 may seem supplementary, but with the integration of the embedded graphing calculator, students are empowered to further develop MP.5, as well as fluency and understanding for focus standards A-APR.3, A-REI.11, F-IF.4, and F-IF.6. Although Unit 4, Concepts 1-3; Unit 10, Concepts 1-2; and Unit 11, Concept 1 are not major work of the grade, they contain investigations that reinforce standards considered major work of the grade. These concepts may be expected in Geometry, but when considering the balance of course expectations, testing timeframe, and the many Algebra II focus standards that are reinforced within the investigations, these concepts were placed in the Algebra II sequence. The digital nature of the Math Techbook offers flexibility, allowing districts to exclude the portions they believe to be unnecessary.
	REQUIRED **1b)** In any one grade/course, aligned materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In aligned materials there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.[29]	**No**	Aligned materials spend minimal time on content outside of Algebra II. Content from previous courses (e.g., Algebra I) is found within the materials, but this content is primarily used to scaffold instruction. Despite this, there are assessment items that cover topics beyond Algebra II. For example, the Unit 8 assessment has many items, which cover graphing of Rational Functions (F-IF.7d) which is a standard taught beyond Algebra II. It should also be noted that according to the provided Algebra II Progressions and Standards for Concept 10.2: Apply the Rules of Probability, the lesson focuses on three standards (HSS.CPB.8, HSS.MD.6, and HSS.MD.B.7) that are not a part of the Algebra II curriculum.	The Publishers' Criteria for K-8 specifically states that content beyond the course should not be assessed; however, the Publishers' Criteria for High School does not have the same restriction. Because Algebra I falls outside the K-8 curriculum, assessment of this standard (at a very minimal level) seems to fall within the allowable recommendations. It should be noted that assessing topics beyond course level was done in very few instances, and nowhere were students expected to master the entirety of a standard from a subsequent course. In the Discovery Education design, care was taken to build understanding by strengthening the students' grasp on the major work of the course. For example, although Unit 8 allows for the development of conceptual understanding for F-IF.7.d+ beyond the Algebra II course curriculum, the

[29] Refer also to criterion #2 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				power of the embedded graphing calculator and integration of focus standards (e.g., A-REI.11 and A-CED.A.1) within the investigations allow for students to develop MP.5 using inquiry-based lessons. The Unit 8 Assessment also offers the embedded graphing calculator to analyze and answer questions, assessing students in their ability to apply new learning of rational equations while using appropriate tools strategically. Although Unit 10, Concept 2 and the standards it covers may be recommended in the Geometry sequence, we considered the balance of course expectations and the national testing timeframe outlined by PARCC, which led us to conclude that placement in the Algebra II course would be appropriate. This concept continues to build fluency and application of related Algebra II focus standards, such as A-SSE.2 and A-SSE.3.
Non-Negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional materials are coherent and consistent with the content in the Standards. ☒ Yes ☐ No	**REQUIRED** **2a)** Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year.[30]	**Yes**	Meaningful connections are made between supporting content and major work for Algebra II. For example, in Concept 6.3, students work to create and solve equations in one variable (A-CED.1) in the context of modeling real-life problems involving polynomial functions, including those where finding the zeros of polynomials is required (A-APR.3). Similarly, rewriting rational expressions (supporting content, A-APR.6) is introduced in Concept 7.1 as part of a larger discussion of rewriting expressions based on their structure (A-SSE.2, major content). Lastly, Concept 11.2 requires students to use an interactive simulation (S-IC.A.2) to determine the margin of error (S-IC.B.4).	

[30] Refer also to criterion #3 in the K–8 Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	REQUIRED **2b)** Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important. [31]	**Yes**	Materials connect content across clusters and domains, where these connections are important for Algebra II. For example, Concept 9.2 connects two domains. As part of a unit on trigonometric functions (F-TF), students are asked to focus on the characteristics of the graphs of these functions (F-IF.7e). Concept 5.2 extend their understanding of linear and quadratic equations (A-REI.C.7) and will extend their understanding of solving linear system by graphing to encompass simple polynomial, rational, absolute value, exponential, and logarithmic functions (A-REI.D.11).	
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials 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.[32] ☐ Yes ☒ No	**REQUIRED** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	Important mathematical ideas are developed conceptually, where appropriate. Each lesson begins with a "Discover" section. Here, students progress through an introduction, different investigations, a summary, and an extension to build conceptual understanding of the topic. Concept 3.2 Sessions 1 and 2 features conceptual standard N-CN.A.1. Students complete tables, look for patterns, and rewrite expressions for imaginary numbers. In the problem set, students are asked questions that develop conceptual understanding of this (see 3.2 practice, coach mode, question 3). Another example of conceptual understanding is in Concept 6.1. The standard A-SSE.A.2 is developed conceptually with students. Students are asked to take expressions like x^2 - 16 and use that idea to make a conjecture about factoring x^4 - 16. Lastly, Concept 9.1 has students use pipe cleaners and other tools in order to understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle (F-TF.A.1). Students also are asked to make connections between circumference and radian measure. It should be noted there is a gap in the conceptual presentation of materials. For example, in Concept	

[31] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[32] Refer also to criterion #4 in the K–8 Publishers' Criteria and #2 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

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			3.1, students are introduced to rational exponents and their properties (see RN.1). However, this topic is not developed in a conceptual way (i.e. asking students how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values). Rather, the materials primarily focus on rewriting exponential expressions within the context of application problems.	
	REQUIRED **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**No**	Relatively little emphasis is placed on procedural skill and fluency, where appropriate for the standards. Concept 1.2 covers inverse functions (F-BF.B.4). Looking through the investigations, check understanding, and practice for inverse functions, there is very little procedural skill practice. There are questions regarding inverse as it applies to the real world as well as other questions involving domain and graphing; however, there is very little practice finding inverses of functions. Similarly, this can be found with standard N-RN.A.2, a major standard of Algebra II. When looking at the standards document provided by the publisher, this standard should be found in Concept 3.1. When looking through the materials, there is little evidence of this standard with 2 or 3 questions total throughout the practice, check understanding, and investigations. There is little to no practice with this procedural skill in Algebra II.	Discovery Education Math Techbook is dividied into units, and each unit is subdivided into concepts. Each concept develops student understanding through the Discover, Practie, and Apply cycle. The development of procedural skill and fluency is included in all three sections of every concept, demonstrating a significant emphasis on procedural skill and fluecny where appropriate for the standards. Opportunities to develop procedural skills and build fluency occur through the Investigations in the Discover section. Each Discover section also includes Checks for Understanding that appear at the bottom of each Investigation. The entire Practice section, which includes a Coach section with structured feedback and a Play section with more opportunities for practice, is the centerpiece of each concept. In the Apply section, students have additional opportunities to apply their procudral skills through 2-3 multi-step, real-world problems. Additional opportunities to develop fluency are provided by the Math Assessment Builder feature supplied to all Math Techbook subscribers. Not including the Math Assessment Builder items, there are over 5,000 individual practice items within Discovery Education Math Techbook. With regards to inverse functions, students concentrate on inverse functions in Unit 1, Concept 2, but then continue to build understanding and fluency in subsequent concepts, where procedural

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				skill and fluency will continue to develop with a variety of different functions. Inverse functions are used and related practice items can be found within Concepts 2.3, 2.4, 3.1, 8.2. These concepts further include opportunities to build fluency through the Investigations, Checks for Understanding, and Practice. Although students are first exposed to N.RN.A.2 in Algebra I, further development of the proceedural skills are integrated and applied in Algebra II, Concept 3.1. There are additional opportunities to develop fluency via the Math Assessment Builder feature.
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time working with engaging applications, without losing focus on the major work of each grade/course including ample practice with single-step and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade/course, afford opportunities for practice, and engage students in problem solving. The problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit.	**Yes**	Applications are attended to consistently throughout the curriculum. In addition to each model lesson beginning with a real-world problem, each section also has a distinct part called "Apply" which is focused on how math from the section might be used to solve a real-world application, often with a rich problem-solving context. First, Concept 1.1: Explore Recursive Functions asks students to apply their knowledge of the topic to determine how many digits a phone number must have so that every person on the planet can have a different phone number using the application standards HSF-BF.A.1, HSF-BF.A.1a, and HSF-BF.A.2. Another example can be found in 6.1 where students choose and produce equivalent forms of expressions within a modeling context (SSE.3). Here, for example, students develop and test a game based on equivalent polynomial expressions. The students do the same thing in Concept 6.2. Students develop a board game that involves polynomial factors, intercepts, graphs, and other key elements.	
	REQUIRED **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**No**	Each lesson is set up similarly to include conceptual and application problems. Students are given a foundation needed to gain a solid understanding of the concepts using these components of rigor. The three aspects of rigor are generally treated together, but are seldom treated separately, particularly when	The three aspects of rigor are treated both together and separately within each of the three components of Math Techbook. When reviewing the product, it is essential to look into each section of a concept: Discover, Practice, and Apply. In the Discoer section, the three aspects of rigor are treated together while

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (Yes/No)	JUSTIFICATION/ COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			it comes to procedural understanding. Procedural standards (N-RN.2, for example), are treated as part of application problems. The same is true with inverse functions (F-BF.B.4). This is consistent throughout the instruction whether it be the Discover, Practice, Apply section of the Concepts.	introducing the concept, and then treated separately through the Check For Understanding at the end of each Investigation. The items within Practice treat procedural aspects of rigor, then all three aspects of rigor are brought together again in the Apply section. Standard N-RN.2 is referenced in Concept 3.1, where Investigations and the Checks For Understanding incorporate application of students' understanding, because this standard was first introduced in Algebra I, as recommended by CCSSM in Appendix A. At that point, students were given significant practice with procedural fluency, and any items they encounter here only serve to further refine and retain the skills they learned in Algebra I. For example, specific tasks that target fluency include Coach #3 and Play #1, #2, while Play items #8 and #9 involve application. Regarding the inverse function standard (F-BF.4), the three aspects of rigor are assessed separately as well as together. An example of this balance is in Concept 3.2, where Investigation 1 develops the conceptual relationship of inverses for square and cube functions, but investigations 2 and 4 use the application of inverse in context. Investigation 4 also builds fluency in using inverse functions to solve radical equations with no context. The Practice associated with this concept assesses F-BF.4, addressing the aspects of rigor both separately and together with a variety of assessment items. Specifically, fluency is developed via Coach #4, 5, 6, 8, and 10 and Play #3, 4, 5, and 11; application is required in Play #8 and 14. It should be noted also that this is the third instance in which this standard is addressed in the Algebra II course progression; F-BF.4 is also developed in units 1, 2 and 8.
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:**	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the major work of the grade/course;	**Yes**	In the teacher edition, under the Progressions and Standards domain, the mathematical practices for each concept are given. In addition, the	

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Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards.[33] ☒ Yes ☐ No	practices strengthen the focus on major work instead of detracting from it, in both teacher and student materials.		mathematical practices are discussed for each concept. There is an emphasis on MP.4 and MP.1 found in regular real-life application problems. For example, in Concept 3.2 determine how many workers a business might need by analyzing a quadratic function related to demand and profitability. In the course of this problem, students must represent the situation in a variety of ways, including graphically. Concept 2.4 will look for patterns in a table and express their findings using repeated reasoning, which is MP.8. MP.7 is also used in Concept 7.2 as students use the structure of rational inequalities to identify values of the variable for which the related rational function is equal to zero or undefined.	
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY				
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☐ Yes ☐ No	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.[10]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	5c) Materials base content progressions on the progressions in the Standards. [34]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

[33] Refer also to criterion #8 in the K–8 Publishers' Criteria and #6 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013)
[34] Refer also to criterion #5 in the K–8 Publishers' Criteria and #3 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

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	5d) Materials include learning objectives that are visibly shaped by CCSSM cluster headings and/or standards.[35]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	5e) Materials preserve the focus, coherence, and rigor of the Standards even when targeting specific objectives. [11]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☐ Yes ☐ No	**6a)** Careful Attention to Each Practice Standard: Materials attend to the full meaning of each practice standard.[36] Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard.[37] There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Alignments to practice standards are accurate.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	6b) Materials Support the Standards' Emphasis on Mathematical Reasoning: Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems. [38]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	6c) Materials explicitly attend to the specialized language of mathematics.[12]	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the	**7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way,	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

[35] Refer also to criterion #6 in the K–8 Publishers' Criteria and #4 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[36] Refer also to criterion #9 in the K–8 Publishers' Criteria and #7 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[37] Refer also to criterion #7 in the K–8 Publishers' Criteria and #5 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).
[38] Refer also to criterion #10 in the K–8 Publishers' Criteria and #8 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

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indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. [39] ☐ Yes ☐ No	arguments and explanations, diagrams, mathematical models, etc.			
	7b) There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of students responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7f) Materials support the uses of technology as called for in the Standards.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

[39] Refer also to pages 18-20 in the K – 8 Publishers' Criteria and pages 16-18 in the High School Publishers' Criteria for the Common Core State Standards for Mathematics (Spring 2013).

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FINAL EVALUATION ***Tier 1 ratings*** receive a "Yes" in Column 1 for Criteria 1 – 7. ***Tier 2 ratings*** receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria. ***Tier 3 ratings*** receive a "No" in Column 1 for at least one of the non-negotiable criteria.				
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. Focus on Major Work	**No**	55% of the material is major work of Algebra II. Content outside of Algebra II is minimal and only used for scaffolding purposes.	Please see the response to Criteria 1a and 1b, above.
	2. Consistent, Coherent Content	**Yes**	Meaningful connections are made between supporting content and major work for Algebra II. Materials make natural and important connections across domains as well as across clusters within domains.	
	3. Rigor and Balance	**No**	While the materials develop conceptual concepts and provide application, procedural skill is not evident across the standards that require procedural skill and fluency. In addition, the three aspects of rigor are not always treated separately as called for by the standards.	Please see the response to Criteria 3b and 3d, above.
	4. Focus and Coherence via Practice Standards	**Yes**	Practice standards are given throughout the course in the teacher guide as well as the student edition.	
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	6. Alignment Criteria for Standards for Mathematical Practice	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7. Indicators of Quality	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
FINAL DECISION FOR THIS MATERIAL: **Tier III, Not representing quality**				

Appendix II.

Public Comments

There were no public comments submitted.