

Review Team Appraisal of Title

(9-12 Mathematics)

This appraisal form is provided for use by educators responsible for the selection of instructional materials for implementation with districts and charter schools across New Mexico to meet the needs of their student populations.

This appraisal form should be used in conjunction with the publisher provided Form D: Research Based Effectiveness Determination that supports this reviewed material which can be found on the Instructional Material Bureau website.

<https://webnew.ped.state.nm.us/bureaus/instructional-materials/the-adoption-cycle/>

Text Title	Big Ideas Math: Integrated Mathematics I	Publisher	Big Ideas Learning
SE ISBN	9781680331127	TE ISBN	9781680330519
SW ISBN	9780680330526	Grade Level/Content	9-10

Core Material Designation *(Core Material is - the comprehensive print or digital educational material, including basal material, which constitutes the necessary instructional components of a full academic course of study in those subjects for which the department has adopted content standards and benchmarks.)*

Recommended _____ Recommended with Reservations X Not Recommended _____

Total Score

Reviewer #67 _____ 85.3% _____	Reviewer #68 _____ 74.7% _____	Reviewer #69 _____ 80.8% _____	Average score _____ 80.3% _____
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Standards Review - *Materials are reviewed for alignment with the state adopted content standards, benchmarks and performance standards.*

Reviewer #67 _____ 88.51% _____	Reviewer #68 _____ 78.02% _____	Reviewer #69 _____ 85.69% _____	Average Score _____ 84.07% _____
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Materials align with grade level standards.

Statements of appraisal and supporting evidence:+
 The materials **mostly align** with grade level standards.

For example, the domain Seeing Structure in Expressions (HS.A-SSE) has several standards that were not addressed in the materials. The standard, HS.A-SSE.A1: Interpret expressions that represent a quantity in terms of its context, was limited throughout the text and when it was found did not show very much structure.

One example of evidence that the materials reviewed align with high school grade level standard HS.NQ.A.1. In both citations, found in TE p. 15, Example 5 and TE, p. 133, Ex: 23, the students are

evaluating the units, choosing the appropriate type, and providing interpretation in the context of the situation.

Another example that the materials reviewed align with high school grade level standard HS.AREI.C.5. In this citation, found in the TE p.231, Example 2 the text clearly states, step by step, how a student can solve a linear system by elimination. The steps show clearly how to multiply an equation in order to have opposite coefficients, applying the distributive property as they multiply.

Materials align to standards for mathematical practice.

Statements of appraisal and supporting evidence:

In general, the publisher did not provide quality citations for the Standards of Mathematical Practices. We were able, however, to find our own examples of alignment for these practices.

In the Standard for Mathematical Practice 3, constructing viable arguments and critiquing the reasoning of others, the publisher cited an activity designed for students to communicate what they can conclude about triangle congruence in relation to the Side-Side-Side (SSS) Congruence Theorem. While there were opportunities for students to construct viable arguments regarding the context, the materials did not offer opportunities for students to participate in the critiquing of others.

All Standards for Mathematical Practices were addressed, however they were often addressed in superficial, non-thorough ways. For example, in the TE, p. 115, there is a suggestion to the teacher to "solicit student responses for parts a and b. Students should listen carefully and critique the reasoning of classmates." As the task cited is closed, there is no evidence as to what kind of student responses to expect and how other students could critique those responses.

Materials show aspects of rigor.

Statements of appraisal and supporting evidence:

Overall, we found that the materials partially show aspects of rigor.

We found that Attention to Conceptual Understanding was well balanced in all four quarters. There were ample opportunities for students to explore and develop conceptual understanding of the high school standards throughout the materials.

We found that Attention to Procedural Skill was very well balanced in all four quarters. Every section within each chapter gives ample opportunity for the students to practice their newly acquired skills. As they practice these skills, they are consistently asked to interpret their answers, helping to solidify their conceptual understanding.

We found that Attention to Application was only partially balanced in all four quarters. The text is lacking in opportunities for students to apply authentic thought and understanding of how to use math in thought-provoking, real world, culturally relevant applications.

Math Content Review - *Materials are reviewed for relevant criteria pertaining to the support for teachers and students in the specific reviewed content area.*

Reviewer #67
____100%__

Reviewer #68
____85.71%__

Reviewer #69
____92.86%__

Average Score
____92.86%__

Materials are consistent with grade level content, supporting the intent of the delivery and understanding of mathematics.

Statements of appraisal and supporting evidence:

Overall, the materials meet the math content standards, however, there are some aspects that could be improved. The web resources, especially from the perspective of a parent or caregiver, could be more user friendly, easier to access and navigate. The materials **support** using precise mathematical language in both concrete and abstract representations. For example, each section begins with explorations and examples that highlight key mathematical language and representations. Evidence of this can be found in the SE, p. 235, Essential Questions and Explorations 1 and 2, Using a Table to Solve a System of Equations and Writing/Analyzing a System. The materials provide strategies to elicit mathematical discourse among students. This is often found in the form of a Formative Assessment Tip. For example, on p. T-624, a technique called Pass the Problem is provided as an opportunity for students to work with others to determine why SSA is insufficient in proving two triangles are congruent. This process also gives students the opportunity for self-reflection.

Materials support student learning of mathematics.

Statements of appraisal and supporting evidence:

Overall, the materials **somewhat support** both the student and teacher in the learning of mathematics. However, we have some reservations about how the students of New Mexico would relate and engage with them. In general, the mathematics is presented in a traditional way, absent of culture that does not encourage students to discover or play with the mathematics through engaging, thought-provoking ways. That being said, the materials are presented in a clear, well-organized fashion, and the online materials provide extra means to support your typical student. For example, a Spanish speaking student could click on a link next to an example in the online textbook to see the accompanying video. These materials, however, do not have strong support for differentiating instruction for gifted or struggling students. The materials include assessments with solutions, some of which are worked out as an extra resource for both student and teacher.

All Content Review - Materials are reviewed for relevant criteria pertaining to the support for teachers and students in the material regarding the progression of the standards, lesson structure, pacing, assessment, individual learners and cultural relevance.

Reviewer #67

___ 74.38% ___

Reviewer #68

___ 64.38% ___

Reviewer #69

___ 66.25% ___

Average Score

___ 68.34% ___

Materials are coherent and consistent with the high school standards which all students should study in order to be college and career ready.

Statements of appraisal and supporting evidence:

The materials **attend to the full intent** of the content contained in the high school standards. The evidence we have of this is found in the TE, p. T-328, What Your Students Will Learn section where the textbook clearly states the standard around Data Analysis and Displays that will be covered in the section. The materials **partially provides opportunities** for students to work with all high school standards and do not distract students with prerequisite or additional topics. The SE has evidence of this on page 8, where students are asked to complete roughly 25 prerequisite exercises before starting the lesson, which we find distracts from the intended content. The materials, when used as designed, **fully allow students** to spend the majority of their time on the content from standards widely applicable as prerequisites for a

range of college majors, postsecondary programs, and careers. Our evidence of this occurs in the SE on page 386, exercise 48 which connects to someone who is considering architecture.

Materials are well designed and take into account effective lesson structure and pacing.

Statements of appraisal and supporting evidence:

The materials are **somewhat well designed** and provide a traditional, suggested lesson structure and pacing but lacks clear ways to differentiate. For example, the Chapter 1 Pacing Guide on p. xxxiv lays out a 12-day plan to complete Chapter 1: Solving Linear Equations. The Assignment Guide and Homework Check, however, on TE p.71 lists Basic, Average, and Advanced problems for the teacher to assign, but there is overlap in those problems that does not make sense.

Materials support teacher planning, learning, and understanding of the standards.

Statements of appraisal and supporting evidence:

The materials **partially support** teacher planning, learning, and understanding of the standards. In general the standards are covered, but the materials do not explicitly list the standards covered in each section, which is important in order to support not only your experienced teachers, but also those new to field. For example, on T-100 in the TE, in the What Your Students Will Learn section, the text lists the concepts to be covered but does not link those concepts to the Common Core Standards.

Materials offer teachers resources and tools to collect ongoing data about student progress on the standards.

Statements of appraisal and supporting evidence:

The materials **partially offer** teachers the necessary resources and tools to collect ongoing data about student progress on the standards. In each section, the text typically provides roughly fifty problems for assessment, the majority of which assess procedural skill. A small portion of those exercises are open-ended, thought-provoking, require modeling and multiple representations, or ask the students to apply critical thinking skills. For example, in the SE p. 253-254, exercises 1-45, the students are asked to graph inequalities in two variables. Roughly ten of those problems require the students to model with mathematics or use critical thinking beyond that which is required in the other skills-based problems. The online resources provide very similar assessments.

Materials give all students extensive opportunities and support to explore key concepts.

Statements of appraisal and supporting evidence:

The materials **somewhat give** all students extensive opportunities and support to explore key concepts. The materials provide very clear, step by step instructions to solve problems, which includes online videos a student could watch to support that learning. There are Spanish language materials available, a Spanish glossary in the back of the book, and videos in Spanish that are easily accessible using the online textbook. The textbook provides ample examples for each section, going so far as to also provide extra examples in the margin of the TE. An example of this can be found on p. 140, Extra Example 6 where another problem is given should a student not have understood the Example 6 in the book. We found the support for gifted enrichment to be lacking. For example, TE p. 144, If Students Got It..., Enrichment and Extension provides the teacher with supplementary activities with more difficult numbers, but does not necessarily support or encourage the student to explore the topic further.

Materials support effective use of technology to enhance student learning. Digital materials are accessible and available in multiple platforms.

Statements of appraisal and supporting evidence:

The materials **fully support** effective use of technology. All of the online materials are accessible across multiple platforms. The online materials provide access to customizable assessments, for example Dynamic Assessment and ExamView, both of which are available. Desmos Geometry, Algebra Tiles, and

an Interactive Balancing scale are all provided as resources to help support a more dynamic perspective on the standards.

Materials can be easily customized for individual learners.

Statements of appraisal and supporting evidence:

Materials can be **mostly customized** for individual learners. Technology is included that enhances items such as drag and drop, graphing, point plotting, multiple select, and fill in the blank using math expressions. A student has the opportunity to chat with outside support: "If a student is in a supported assignment with the live chat tutor option enabled by their teacher, they can find a link to the live chat tutor by selecting Need Help. Students can access the chat tutor one time for each question." Beyond this, there is no evidence that the student could use technology to collaborate with other students or with the teacher.

Materials take into account cultural perspectives.

Statements of appraisal and supporting evidence:

The materials, in general, **do not take into account** cultural perspectives. We were not able to consistently find any examples of culture, language, or lived experiences by the people in New Mexico.

Reviewer Professional Summation - *These materials are reviewed by Level II and Level III educators from across New Mexico. The reviewers have brought their knowledge, experience and expertise into the review of these materials. They offer here their individual summary of the material as a whole.*

Reviewer #67 background and experience: Phd. in Mathematics and 23 years of teaching math

Professional summary of material:

I found the textbook to be very traditional and lacking in being user friendly for new teachers, especially with connecting standards. It has a lot of practice and teacher centered activities. It is easy to follow for those who want to teach in that teacher centered environment. Mathematical Practices could have been represented better for students to discover their own learning, learn from trial and error, and critiquing others. The use of technology and assessment was a plus in this text. Dynamic Classroom and other online resources are a useful tool and easily accessible for students and parents but not always user friendly. This textbook really lacked in addressing cultural diversity. English-Spanish dictionary is readily available but overall it is the only resource for differentiation and only addresses the Spanish language.

Reviewer #68 background and experience: National Board Certified, Charter School Teacher of 16 years, all with at-risk students

Professional summary of material:

Overall, this textbook is easy to use, well organized, and clear. In many ways it is a very good reference for any student or teacher wanting to learn the mathematics covered by the Common Core Standards. That being said, it lacked some of the pieces that I look for in a material for use in my classroom. Students learn best when they are engaged and feel a personal connection to the materials. This book leans more toward the systematic, procedural teaching of mathematics, and does not include enough of the open-ended, engaging, fun-to-play-with mathematics that a lot of my students need in order to appreciate the beauty of mathematics and to be fully engaged. Furthermore, because it seems to be designed for use nationwide, it lacks relevant culture and misses meaningful chances for students to bring their own opinion and voice to the material.

Reviewer #69 background and experience: Mathematics Teacher for 10 years. Taught college and high school level Math.

Professional summary of material:

The textbook provided good examples and exercises. The material also provided enough online resources that can be easily accessed for support. However, the material provided minimal activities where students can relate and be engaged. This book focused more on procedural style of teaching mathematics. The material lacks activities that are culturally and locally relevant to New Mexico students. The common core standards are also not listed in every topic. That means it doesn't support first year teachers or those teachers that need guidance on which standards are under that specific concept. Some of the problems in the materials are easy for high school students. The materials also support English Language Learners by providing the translations on some important terms. This can be found on page A61 of the student edition. The materials also provided online resources to help English language learners and even the underperforming students. They access these additional resources in any online platform.

Review Team Appraisal of Title

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Text Title	Big Ideas Math: Integrated Mathematics II	Publisher	Big Ideas Learning
SE ISBN	9781680330687	TE ISBN	9781680330700
SW ISBN	9780680330717	Grade Level/Content	9-11

Core Material Designation *(Core Material is - the comprehensive print or digital educational material, including basal material, which constitutes the necessary instructional components of a full academic course of study in those subjects for which the department has adopted content standards and benchmarks.)*

Recommended _____ Recommended with Reservations X Not Recommended _____

Total Score

Reviewer #67 __83%__	Reviewer #68 __86.67%__	Reviewer #69 __83%__	Average Score __84.22%__
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Standards Review - *Materials are reviewed for alignment with the state adopted content standards, benchmarks and performance standards.*

Reviewer #67 __87.25%__	Reviewer #68 __91.86%__	Reviewer #69 __88.96%__	Average Score __89.36%__
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Materials align with grade level standards.

Statements of appraisal and supporting evidence:

The materials **almost completely** align with grade level standards. In general the standards were covered completely with only a few instances of weak coverage. For example, standard HS.GGMD.A.1, covering informal arguments about the circumference of a circle was poorly covered. Evidence of this can be found in the SE on p.636 where the text lists what will be covered, and parts are missing and additionally there is no mention of informal argument.

Use Rules of Probability, however, was an example of a domain for which we were able to find sufficient evidence in each standard.

Materials align to standards for mathematical practice.

Statements of appraisal and supporting evidence:

The materials **partially align** to the standards for mathematical practice. The text acknowledges the standards throughout the textbook, but we found some of the examples of their use to be superficial in nature.

In the SE, for example, on p. 671, exercise 35 is labeled as Modeling with Mathematics. This is an example of a relatively typical task in this textbook. It is labeled with the mathematical practice but it is essentially a structured problem where the students simply need to plug in the given information into a formula and solve the formula. There is no evidence that they would need to model anything since the model is basically already given.

In the TE Page T-305 Exploration 3, however, the material provided teachers a guide on how to engage students. It's suggested to teachers to let their students to commit errors when describing the rules and to listen for correct reasoning. We found this to be a good example of mathematical practice 3, the opportunity for students to construct viable arguments and to critique the reasoning of others.

Materials show aspects of rigor.

Statements of appraisal and supporting evidence:

Overall, the materials **mostly show** aspects of rigor. We found that the text had ample examples of conceptual understanding and procedural knowledge, but was lacking in opportunities for application.

Each section of the textbook introduces students to a concept and builds understanding through a variety of explorations and examples. The students are then asked to complete exercises to show their understanding in a way that mostly involves procedural type thinking.

For example, in the SE on p.74, exercise 43 asks students to write a polynomial to represent a football field. In the diagram, the field is already labeled with algebraic expressions and students need only to place those expressions into a polynomial to complete the exercise. We feel this is evidence of a missed opportunity to apply their understanding of what a polynomial is and how it can be used to model a real-life situation. This is an example of a typical exercise that is seen throughout the textbook.

The textbook, however, does offer many chances to build procedural fluency. For example, in the SE on p. 664, on exercise 12, the students are asked to find the area of a shape by finding the area of the two main pieces, and recognizing that those pieces simply tile across the shape, making use of repeated reasoning to find the area of a complex figure, which helps build a strong foundation of fluency.

Math Content Review - Materials are reviewed for relevant criteria pertaining to the support for teachers and students in the specific reviewed content area.

Reviewer #67

___100%___

Reviewer #68

___96.43%___

Reviewer #69

___75%___

Average Score

___90.48%___

Materials are consistent with grade level content, supporting the intent of the delivery and understanding of mathematics.

Statements of appraisal and supporting evidence:

The materials are **almost entirely** consistent with grade level content and support.

Overall we found the materials to be very consistent in showing clear mathematical procedures throughout the explorations and examples. The language used was precise, grade-level appropriate, and written with high school students mostly in mind. The materials also provide full, adult-level guidance for teachers. For example in the TE, on p. T-188 the Chapter Summary shows how the publisher helps guide the teacher with a beginning of chapter, big-picture summary of what is about to be covered and how it connects to the last chapter.

We found the materials lacked in providing materials that parents or caregivers could use to support their students. For example, with the online resources, the chapter resources provide almost the exact same style of problem as the textbook.

Materials support student learning of mathematics.

Statements of appraisal and supporting evidence:

The materials **mostly support** student learning of mathematics.

There are ample opportunities for students to learn procedural mathematics, with only some opportunities for students to discover or to develop a deeper understanding.

For example, in the SE, on p. 525, Exploration 2 asks students to explore the side ratios of an isosceles triangle using dynamic geometry software. In this activity the students are encouraged to justify their conclusions and to communicate their ideas with others. However, we found no evidence of students being encouraged to use this dynamic software anywhere else beyond the explorations. For example, in the SE, pgs. 529-530, the exercises 1-26 are meant to assess student understanding of that same exploration and include no chance to use the software to demonstrate their understanding. We thought this was a missed opportunity for students to deepen their understanding of the problems they were asked to do on their own.

All Content Review - Materials are reviewed for relevant criteria pertaining to the support for teachers and students in the material regarding the progression of the standards, lesson structure, pacing, assessment, individual learners and cultural relevance.

Reviewer #67

___69.38%___

Reviewer #68

___71.88%___

Reviewer #69

___68.75%___

Average Score

___70%___

Materials are coherent and consistent with the high school standards which all students should study in order to be college and career ready.

Statements of appraisal and supporting evidence:

The materials are **almost entirely** consistent with the high school standards.

The materials attend to the full content and provide students with many opportunities to spend the majority of their time on the high school standards. For example, in the TE, on p. 120, What Your Students Have Learned, Middle School and on p. 126 Monitoring Progress and Modeling with Mathematics, there is a clearly defined list of what will be covered, showing very little time spent reviewing middle school standards, but noting which of those standards will be foundational for the upcoming lesson.

We did not find evidence in the materials of the standards being explicitly identified. For example in the SE, p. 192, What You Will Learn there is no mention of Common Core Standards by domain.

Materials are well designed and take into account effective lesson structure and pacing.

Statements of appraisal and supporting evidence:

The materials are **well designed** and **mostly take into account** effective lesson structure and pacing.

For example, the materials provide a pacing guide for each chapter, like the one found in the TE on p.332 for Chapter 6: Relationships Within Triangles. However, we found there to be a lack of flexibility in these guides. We could find no evidence of support for a teacher struggling with that pace.

Materials support teacher planning, learning, and understanding of the standards.

Statements of appraisal and supporting evidence:

The materials **mostly support** teacher planning, learning, and understanding of the standards.

We did not find evidence that the teacher's edition explains the role of the specific standard in the context of the overall series. Evidence of this can be found in the TE on p. T-400 Chapter Summary where the text talks about the concepts to be covered and how they connect to previous concepts, but makes no mention of specific standards and how they are connected to the lessons.

The materials do, however, provide a comprehensive support system with items such as online lesson plans, dynamic classroom, and an interactive whiteboard lesson library through the online resources. Evidence of this can be found in the TE, p.xxvi.

Materials offer teachers resources and tools to collect ongoing data about student progress on the standards.

Statements of appraisal and supporting evidence:

The materials **partially offer** teachers resources and tools to collect ongoing data about student progress.

Overall, collecting data and acknowledging mastery of a standard is basically impossible if the standards are not explicitly stated. For example, in the TE, on p. 455, the Chapter Test does not denote which standards are being addressed. A teacher would need to look up the standards and match them to the problems by way of looking at each problem individually and analyzing the directions that correspond to that problem, a very tedious process.

However, it should be noted that even though the standards aren't explicitly stated, the wording throughout the textbook and the student outcomes match with the standards.

Materials give all students extensive opportunities and support to explore key concepts.

Statements of appraisal and supporting evidence:

The materials **partially** give students opportunities and support to explore key concepts.

The materials only partially provide opportunities for students to investigate content beyond what is expected in the lesson. For example, in the TE, p. 302, the If Students Got It box, the materials suggest using the Enrichment and Extension resources in the online materials. Upon examination, these materials provided practice on the same concepts, but with more difficult numbers. We thought this was a missed opportunity for the materials to deepen understanding and that they lacked the thought-provoking questions that should be provided in enrichment. Therefore, the opportunity for further exploration was only offered in the supplementary materials and was not integrated into the lessons.

The materials did offer some support for English Language Learners. For example, in the TE, on p.109, English Language Learners box, the text suggests to teachers to help students stay organized with the steps to solve problems by having them write down notes in journals and by displaying common steps on posters in the classroom, both research backed strategies for supporting ELLs.

Materials support effective use of technology to enhance student learning. Digital materials are accessible and available in multiple platforms.

Statements of appraisal and supporting evidence:

The materials **entirely** support effective use of technology.

As reviewers we verified that the digital materials can be accessed across multiple browsers (Chrome, IE, and Firefox) and across multiple platforms (Windows, Mac, and IOS). The online resources also offer a variety of tools including dynamic geometry software, algebra tiles, and a balancing tool for modeling algebraic expressions and equations.

Materials can be easily customized for individual learners.

Statements of appraisal and supporting evidence:

The materials can **mostly be customized** for individual learners.

An example of a way teachers can customize for their students is the Examview Assessment Suite that can be found in the online resources. Evidence is located in the TE, on p.xxix, Dynamic Teaching Tools.

In the help section in the online materials, we were able to find evidence that a student could chat with outside support: "If a student is in a supported assignment with the live chat tutor option enabled by their teacher, they can find a link to the live chat tutor by selecting Need Help. Students can access the chat tutor one time for each question." Beyond this, there is no evidence that the student could use technology to collaborate with other students or with the teacher.

Materials take into account cultural perspectives.

Statements of appraisal and supporting evidence:

Overall, the materials **only partially** take into account cultural perspectives.

An English-Spanish glossary is found in the SE, p. A67 and students using the virtual textbook have the option to click on the links corresponding to some examples in order to see videos of the problems worked out in Spanish. Beyond this example, most of the textbook provided only superficial, generic looks into culture. For example, in the SE, p. 427, Ex 33 and 34 there are two pictures: a pool table and cars in a parking lot. This is a typical example of what's found in this textbook, a surface-level, commonly seen, clip art style version of culture.

Reviewer Professional Summation - *These materials are reviewed by Level II and Level III educators from across New Mexico. The reviewers have brought their knowledge, experience and expertise into the review of these materials. They offer here their individual summary of the material as a whole.*

Reviewer #67 background and experience: PhD in Mathematics, 24 years teaching experience in math

Professional summary of material:

These materials are well organized and easy for anyone to follow. It gives students opportunities to participate in guided explorations and has step by step examples. There are an ample amount of problems for students to practice their procedural knowledge of the content. However, there is not a good opportunity for students to participate in their own discovery learning. They are not led to thought

provoking problems to deepen their own conceptual learning. This text is lacking in experimental and hands on exercises that would be a good aid for students to conceptualize their learning. There were few to no areas where students could debate their own reasoning or that of others.

Reviewer #68 background and experience: National Board certified teacher with 16 years' experience as a high school math teacher

Professional summary of material:

Overall, these materials are very well-organized, with clear, precise, well-written examples. Because of this, I would recommend them more as a reference or support material for any teacher or student wanting to see the high school standards explained, and not as the main teaching tool. While I found opportunities for the students to explore mathematics in the materials (especially using the dynamic geometry software tool provided) these types of tasks were the exception and not the rule. The text follows a traditional pattern of introducing a concept through some exploration and examples with very clearly written steps, and then provides the students with ample opportunity to practice the procedural aspects of those concepts. However, the open-ended, hands-on, thought-provoking tasks that keep my students engaged and require them to think deeply were not as common.

Reviewer #69 background and experience: Mathematics Teacher for 10 years. Taught for both High School level and College Level.

Professional summary of material:

Over, all the materials are systematically presented and well organized, and provide great examples and exercises. The materials provide a variety of examples where they can use technology. In the geometry section, in the exploration part, they use dynamic geometry software to clearly visualize the image. The materials also provide an online tutor that students can utilize to support them in the learning process. The examples in the materials are age appropriate, however, it doesn't encourage the students to go beyond expectations. They only provide supplementary activities. The materials provide opportunities for students to work independently and work with a partner to demonstrate conceptual understanding and procedural fluency.

Instructional Material Summer Review Institute

Review Team Appraisal of Title

(9-12 Mathematics)

This appraisal form is provided for use by educators responsible for the selection of instructional materials for implementation with districts and charter schools across New Mexico to meet the needs of their student populations.

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<https://webnew.ped.state.nm.us/bureaus/instructional-materials/the-adoption-cycle/>

Text Title	Big Ideas Math: Integrated Mathematics III	Publisher	Big Ideas Learning
SE ISBN	9781680330878	TE ISBN	9781680330892
SW ISBN	9780680330908	Grade Level/Content	11-12

Core Material Designation *(Core Material is - the comprehensive print or digital educational material, including basal material, which constitutes the necessary instructional components of a full academic course of study in those subjects for which the department has adopted content standards and benchmarks.)*

Recommended X Recommended with Reservations Not Recommended

Total Score

Reviewer #61
 73%

Reviewer #63
 82%

Reviewer #65
 99%

Reviewer #67
 98%

Reviewer #69
 98%

Average Score
 90%

Standards Review - *Materials are reviewed for alignment with the state adopted content standards, benchmarks and performance standards.*

Reviewer #61
 82%

Reviewer #63
 86%

Reviewer #65
 99%

Reviewer #67
 100%

Reviewer #69
 100%

Average Score
 94%

Materials align with grade level standards.

Statements of appraisal and supporting evidence:

- Grade level domains are outlined and corresponding topics are addressed.
- The materials align with grade level standards. The materials do not have a standards alignment

document for reference.

- The language of the material reflects the language of the standards:
 - The material uses appropriate terminology and vocabulary suitable for the content of the grade level.
- The majority of time spent in the mathematics is in the major clusters of the standards for Integrated Math III.

Materials align to standards of mathematical practice.

Statements of appraisal and supporting evidence:

The Math Practices were aligned with standards and were covered thoroughly in the text. All Math Practices were found in the chapters, including examples, explorations and exercises.

- Math Practice 1
 - The text mentions students should make sense of problems, but then provides students with a step-by-step process for solving the problem. This devalues the idea of building conceptual understanding and making sense while persevering.
- Math Practice 2
 - Students should be examining multiple representations of a context and use those representations to make interpretations about the context, allowing the context to help them determine reasonableness. However, this occurs rather infrequently through the text, since students do not have many opportunities to contextualize and decontextualize.
 - Students are often given only one representation or solution method with which to make sense.
- Math Practice 3
 - Students often examine sample student work and construct arguments about why the work is incorrect and how it could be corrected.
 - Students are asked to take a stance on a topic and then create a valid argument supporting their stance.
- Math Practice 4
 - Students model problems in context with a variety of factors that must be considered. They must extrapolate important information that would be helpful in creating models and solving problems.
- Math Practice 5
 - Students use computer software, graphing calculators, area models, formulas, etc., when appropriate.
- Math Practice 6
 - Students attend to precision by communicating their reasoning precisely and effectively using correct and appropriate mathematical vocabulary. Students must also pay close attention to units of measure and accuracy of their solutions.
- Math Practice 7
 - Students occasionally make use of structures in problems that help them solve smaller, simpler problems along the path to the solution for larger, more complex problems.

Students should be encouraged to use the structures to make connections across topics. However, the materials often do not ask them to do so.

- Math Practice 8
 - Students are occasionally asked to complete tables, examine patterns, and make generalizations from those patterns.
 - Students should be asked to evaluate the validity of their solutions. However, the materials do not often encourage students to make sense of their solutions.

Materials show aspects of rigor.

Statements of appraisal and supporting evidence:

- The materials show a balance of conceptual understanding, procedural fluency, and application of mathematical knowledge.
- Students engage in activities with real world applications offering a blend of conceptual knowledge and procedural fluency. Students attend to representations of contexts aimed at building conceptual fluency which double as opportunities to practice procedural skills.

Math Content Review - Materials are reviewed for relevant criteria pertaining to the support for teachers and students in the specific reviewed content area.

Reviewer #61
___66%___

Reviewer #63
___93%___

Reviewer #65
___100%___

Reviewer #67
___100%___

Reviewer #69
___100%___

Average Score
___92%___

Materials are consistent with grade level content, supporting the intent of the delivery and understanding of mathematics.

Statements of appraisal and supporting evidence:

- Students spend the majority of the course in the major clusters of the standards for Integrated Math III. Time is occasionally spent on additional content.
- The material uses grade level academic language consistent with Common Core.

Materials support student learning of mathematics.

Statements of appraisal and supporting evidence:

- The chapters and supporting lessons are consistent with grade level content and do not often deter from Integrated Math III Common Core Standards.
- There is a good learning progression across the material. For example, in Chapter 1 (Geometric Modeling), algebra is used to find volume, area and cross sections of solids. This sets a strong foundation in algebra before students complete the remaining chapter.

All Content Review - Materials are reviewed for relevant criteria pertaining to the support for teachers and students in the material regarding the progression of the standards, lesson structure, pacing, assessment, individual learners and cultural relevance.

Reviewer #61
 ___49%___

Reviewer #63
 ___69%___

Reviewer #65
 ___92%___

Reviewer #67
 ___92%___

Reviewer #69
 ___91%___

Average Score
 ___79%___

Materials are coherent and consistent with the high school standards which all students should study in order to be college and career ready.

Statements of appraisal and supporting evidence:

- The material uses appropriate terminology and vocabulary suitable for the content of the grade level.
- Problems are engaging for high school level students and contexts are applicable to a wide range of pathways for college and career readiness.
- Lessons have numerous examples and exercises to assess student progress towards procedural fluency.
- The units make meaningful connections. Units are laid out at the beginning of the teacher textbook, and then each unit breaks down the lessons with an eye on past learning going back to middle school math.

Materials are well designed and take into account effective lesson structure and pacing.

Statements of appraisal and supporting evidence:

- Suggested pacing is based upon a 144 day calendar.
- Exploration activities are provided for each section, but each section may take multiple days.
- The design of the assignments shows an intentional sequence.
- There is variety in assessments, and assessments are given at appropriate times.

Materials support teacher planning, learning, and understanding of the standards.

Statements of appraisal and supporting evidence:

- The Teacher Edition provides brief teacher tips, but the planning support is vague and repetitive. It is not specific to particular lessons via learning objectives, identified possible misconceptions, or helpful scaffolding strategies.
- The Chapter Summary describes the mathematics being developed within the chapter.
- Individual standards are not listed on a per lesson basis, so teachers have no reference for what standards have been covered and where specific standards live within the curriculum.
- Dynamic investigations are provided to provide a deeper understanding of student learning.

Materials offer teachers resources and tools to collect ongoing data about student progress on the standards.

Statements of appraisal and supporting evidence:

- The Dynamic Assessment and Progress Monitoring tool tracks student progress through each chapter.
- Progress is not detailed on a per standard level. The curriculum does not lend itself to identifying standards easily. They are not noted on the units or on the assessments.
- Each chapter contains a Performance Task to assess student learning. However, there are no accompanying rubrics for these tasks.

Materials give all students extensive opportunities and support to explore key concepts.

Statements of appraisal and supporting evidence:

- Lessons should lend themselves to multiple representations of key concepts (ie. table, equation, graph), but the materials do not prioritize this very well.
- Sufficient strategies are provided to differentiate instruction as needed for different types of learners. Students have lesson tutorials and a skills review handbook. The TE has ideas for ELL students, as well as auditory suggestions for differentiated instruction.

Materials support effective use of technology to enhance student learning. Digital materials are accessible and available in multiple platforms.

Statements of appraisal and supporting evidence:

- Technology is recommended when creating regression models.
- Software is supported on Windows, Apple, and Chromebooks.
- Software is available for Apple and Android smartphones.
- Dynamic Classroom provides online assistance including dynamic investigations, interactive manipulatives, answer presentation tools, extra examples, and mini assessments.

Materials can be easily customized for individual learners.

Statements of appraisal and supporting evidence:

- The Dynamic Teaching Tools software provides assessment and progress monitoring tools.
- Teacher materials occasionally offer general differentiation strategies for different learning types and support strategies for English Language Learners.
- All lessons end with an overview and some provide “Extension” ideas for advanced learners.

Materials take into account cultural perspectives.

Statements of appraisal and supporting evidence:

- There is little evidence of cultural or language perspectives. Most examples and problems use activities familiar to students from New Mexico (i.e. magic show, skiing, foods), but the cultural aspect is not specifically addressed. Given that the population of New Mexico is primarily Hispanic and Native-American, more representation would be beneficial.
- There is no evidence of bias within the curriculum.

Reviewer Professional Summation - These materials are reviewed by Level II and Level III educators from across New Mexico. The reviewers have brought their knowledge, experience and expertise into the review of these materials. They offer here their individual summary of the material as a whole.

IM= Instructional Material SE= Student Edition TE= Teacher Edition SW= Student Workbook

Reviewer #61 background and experience: 10 years of experience in education in New Mexico. Current content specialist for high school mathematics. Previously taught high school mathematics and supported middle school mathematics teachers. Taught students of all levels, from Algebra 1 Intervention to AP Calculus. Level 3 teacher with a Masters degree. Worked with the NMPED in using the Making Sense of Student Work Protocol and revising the NM End of Course exams for mathematics.

Professional summary of material:

This material is not a good companion for a new teacher or a teacher who does not enjoy looking outside of the textbook for extra resources. The provided lesson plans are vague and open ended with little guidance on teacher strategies that would help a wide range of learners. The look of the material is very cluttered and could pass for a traditional textbook from decades ago (ie. 80 homework problems to choose from, lengthy explanations, answers in the back of the book.). The book relies heavily on teachers building procedural fluency of students, but it does not often allow for students to build deep, meaningful math connections through conceptual understanding. The lessons do not mention what CCSS-M standards are being addressed. The evidence of math practices seem very far-fetched. It's difficult to imagine how a student would engage in the 8 habits of mind encouraged through CCSS.

A veteran teacher who can take normal tasks and make them rich, deep, and open-ended with a variety of entry points may do well with this material with a lot of supplementation and modification. However, the resource itself is not a good stand alone option. I would not recommend this text to anyone, and I would be disheartened to be given this material to use in my own classroom.

Reviewer #63 background and experience: Teaching in New Mexico for 15 years at high school level with experience in Algebra 1, Geometry, Algebra 2 and Trig. Level 3 teacher with a Masters degree in teaching from NMSU. Worked previously with PED on end of course exams, textbook adoption, and SBA anchor pulling/ item analysis. Previously a member of the NM Educator Leader Cadre which participated in the PARCC rollout conference in Chicago, IL.

Professional summary of material:

This material provides the teacher with the tools to practice procedural fluency with their students. The material is "traditional" with a few worked out examples at the beginning of each lesson followed by 80 or so practice problems that increase in difficulty. However, there is no mention of the CCSSM, so it is unclear what standards are being addressed by the practice problems. It is also unclear if the entire standard is being delivered using the language and symbols/ notations of Common Core.

In the past, when using this type of material, I've needed to find supplemental materials on my own that deliver the CCSS in a way missing in this resource. Additionally, the pacing of this resource does not appear to align with the recommended pacing for the Mathematics III Integrated Pathway, as shown in the CCSSM Appendix A.

The resource includes Dynamic Teaching Tools, which consist of interactive whiteboard lessons and online software for the student to use as practice. The resource also includes ExamView to generate assessments.

Reviewer #65 background and experience: 20 years teaching experience with 8 years at the middle school level and 12 years at high school level teaching 9-12 grades. Taught part time at the college level. Masters in curriculum and instruction.

Professional summary of material:

I recommend this material. The material provides a well balanced amount of rigor, including conceptual understanding, application, and procedural skill. Rigor is sufficient for students to complete problems on

their own. Interactive materials are provided. Smartboard templates are created for easy access for teachers. Inexperienced teachers may have some struggle in using the materials.

Reviewer #67 background and experience: 20 years teaching experience in mathematics. BS in mathematics, MS in Diagnostics, and a Phd. in mathematics. Licensed K-12 sped, and 7-12 secondary math. Also hold an administrative license and a diagnostician license. Currently teaching Algebra 2, AP Calculus BC, AP Calculus AB, and AP Computer Science.

I recommend this curriculum. The rigor is well balanced and provides for student learning and preparedness for college readiness and career pathways. Standards are aligned with the lessons and covered thoroughly. Mathematical practices are embedded in all of the lessons and assignments. It meets the technology needs of teachers and students. There are many options for lessons for those who struggle or are advanced. Materials are easy to navigate for both teacher and students.

Reviewer #69 background and experience: 10 years teaching experience in mathematics. BS in Teaching Mathematics. Currently teaching High School Geometry and Algebra 1. Experience teaching College Mathematics.

Professional summary of material:

I recommend this material. The material provides strong support for teachers and students. The material provides well balanced rigor in all three areas with examples, exercises, and assignments. The material also provides interactive online materials for both students and teachers. The topics in each lesson are aligned to common core standards. However, the standards are not mentioned.