Instructional Materials Evaluation Toolkit (IMET)

Mathematics, Grades K–8

Your Evaluation Guide for Glencoe Math ©2015, Courses 1-3
Instructional Materials Evaluation Tool
Mathematics, Grades K-8

What Are the Purposes of the IMET?

This Math IMET is designed to help educators determine whether instructional materials are aligned to the Shifts and major features of the Common Core State Standards (CCSS). The substantial instructional Shifts (http://www.corestandards.org/other-resources/key-shifts-in-mathematics/) at the heart of the Common Core State Standards are:

- **Focus**: strongly where the Standards focus
- **Coherence**: Think across grades and link to major topics within the grade
- **Rigor**: In major topics, pursue conceptual understanding, procedural skill and fluency, and application with equal intensity.

The IMET draws directly from the following documents:

- Common Core State Standards for Mathematics (www.corestandards.org/Math)

When to use the IMET

1. Purchasing materials: Many factors go into local purchasing decisions. Alignment to the Standards is a critical factor to consider. This tool is designed to evaluate alignment of instructional materials to the Shifts and the major features of the CCSS. It also provides suggestions of additional indicators to consider in the materials evaluation and purchasing process.

2. Evaluating materials currently in use: The IMET can be used to analyze the degree of alignment of existing materials and help to highlight specific, concrete flaws in alignment. Even where materials and tools currently in use fail to meet one or more of these criteria, the pattern of failure is likely to be informative. States and districts can use the evaluation to create a thoughtful plan to modify or combine existing resources in such a way that students’ actual learning experiences approach the focus, coherence, and rigor of the Standards.

3. Developing programs: Those developing new programs can use this tool as guidance for creating aligned curricula.

Who Uses the IMET?

Evaluating instructional materials requires both subject-matter and pedagogical expertise. Evaluators should be well versed in the Standards (www.corestandards.org/Math) for all grades in which materials are being evaluated. This includes understanding the Major Work of the grade (www.achievethecore/focus), the Supporting and Additional work, how the content fits into the progressions in the Standards (www.achievethecore.org/progressions), and the expectations of the Standards with respect to conceptual understanding, procedural skill and fluency, and application. Evaluators also should be familiar with the substantial instructional Shifts (http://www.corestandards.org/other-resources/key-shifts-in-mathematics/) of Focus, Coherence and Rigor that are listed above.
Getting Started

Prior to Evaluation

Assemble all of the materials necessary for the evaluation. It is essential for evaluators to have materials for all grades covered by the program, as some criteria cannot be rated without having access to each grade. In addition, each evaluator should have a reference copy of the Common Core State Standards for Mathematics (CCSSM) and the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

Before conducting the evaluation itself, it is important to develop a protocol for the evaluation process. The protocol should include having evaluators study the Publishers’ Criteria and the IMET. It will also be helpful for evaluators to get a sense of each program overall before beginning the process. At a minimum, this would include reading the front matter of the text, looking at the table of contents and paging through multiple chapters.

Sections 1–3 below should be completed to produce a comprehensive picture of the strengths and weaknesses of the materials under evaluation. Information about areas in need of improvement or supplementation should be shared with internal and external stakeholders.

Navigating the Tool

Begin with Section 1: Non-Negotiable Alignment Criteria (p. 4)

- The Non-Negotiable Alignment Criteria must each be met in full for materials to be considered aligned to the Shifts and the major features of the Common Core State Standards. Each Non-Negotiable Alignment Criterion has one or more metrics associated with it; every one of these metrics must be met in order for the criterion as a whole to be met.

- Examine the relevant materials and use evidence to rate the materials against each criterion and its associated metric(s).

- Record and explain the evidence upon which the rating is based.

Continue to Section 2: Alignment Criteria (p. 17)

- The Alignment Criteria must each be met for materials to be considered aligned to the Shifts and the major features of the Common Core State Standards. Each Alignment Criterion has one or more metric associated with it; a specific number of these metrics must be met or partially met in order for the criterion as a whole to be met.

- Examine the materials in relation to these criteria, assigning each metric a point value. Rate the criterion as “Meets” or “Does Not Meet” based on the number of points assigned. The more points the materials receive on the Alignment Criteria, the better they are aligned.

- Record and explain the evidence upon which the rating is based.

Complete Section 3: Evaluation Summary (p. 37)

- Compile all of the results from Sections 1 and 2 to determine if the instructional materials are aligned to the Shifts and major features of the CCSS.

Proceed to Section 4: Indicators of Quality (p. 39)

- Indicators of Quality are important considerations that will help evaluators better understand the overall quality of instructional materials. These considerations are not criteria for alignment to the CCSS, but they provide valuable information about additional program characteristics. Evaluators may want to add their own indicators to the examples provided.
Directions for Non-Negotiable 1
Freedom from Obstacles to Focus

Non-Negotiable 1: Materials must reflect the content architecture of the Standards by not assessing the topics named before the grade level where they first appear in the Standards.

The Standards foster students’ progress to algebra by focusing strongly on arithmetic. Consistent with this focus, certain topics from outside of arithmetic appear only in later grades. Thus, to be aligned, materials must reflect the content architecture of the Standards by not assessing the topics named before the grade level where they first appear in the Standards.

The only metric for Non-Negotiable 1, the rating for Non-Negotiable 1 is the same as the rating for Metric 1A.

If Metric 1A is rated as Does Not Meet, include evidence of when the named topic(s) is/are assessed. If the metric is rated as Meets, list the grade(s) examined in the evaluation.

Required Materials

• Common Core State Standards for Mathematics
  (www.corestandards.org/wp-content/uploads/Math_Standards.pdf)


• From the materials being evaluated: teacher guides and all assessment components

Rating this Criterion

Non-Negotiable 1 is rated as Meets or Does Not Meet.

To rate Non-Negotiable 1, begin by rating Metric 1A. Since Metric 1A is
Non-Negotiable 1
Freedom from Obstacles to Focus

Metric

NN Metric 1A:
Materials reflect the basic architecture of the Standards by not assessing the listed topics before the grade level indicated.

• Probability, including chance, likely outcomes, probability models. (Introduced in the CCSSM in grade 7)

• Statistical distributions, including center, variation, clumping, outliers, mean, median, mode, range, quartiles; and statistical association or trends, including two-way tables, bivariate measurement data, scatter plots, trend line, line of best fit, correlation. (Introduced in the CCSSM in grade 6)

• Similarity, congruence, or geometric transformations. (Introduced in the CCSSM in grade 8)

• Symmetry of shapes, including line/reflection symmetry, rotational symmetry. (Introduced in the CCSSM in grade 4)

How to Find the Evidence

Evaluate the table of contents, all chapter tests, all unit tests, and other such assessment components (including rubrics).

For context, read Criterion #2 from the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013). NOTE: Grade alignments of other topics are addressed in Non-Negotiable 2, Focus and Coherence.

Evidence

McGraw-Hill’s *Glencoe Math* follows the intended scope and conceptual development as prescribed by the Common Core State Standards for Mathematics (CCSS). The program does not hold students or teachers accountable for topics not introduced by the Standards. For example, there are no chapter tests, unit tests, or other assessment components that make students or teachers responsible for probability before Grade 7 (Course 2) or similarity, congruence, and transformations before Grade 8 (Course 3).

A listing of the standards assessed in each chapter can be found in the Teacher Wraparound Edition on page xix in Course 1, page xvii in Course 2, and page xvi in Course 3.

Rating

☑ Meets
☐ Does Not Meet
Non-Negotiable 1: Freedom from Obstacles to Focus

Non-Negotiable 1: Materials must reflect the content architecture of the Standards by not assessing the topics named before the grade level where they first appear in the Standards.

Rating for Non-Negotiable 1

If Metric 1A was rated as Meets, then rate Non-Negotiable 1 as Meets. If Metric 1A was rated as Does Not Meet, then rate Non-Negotiable 1 as Does Not Meet. Check the final rating.

Then, briefly describe the strengths and weaknesses of these materials in light of the above Criterion.

Strengths / Weaknesses:

McGraw-Hill's *Glencoe Math* concentrates on the essential topics and clusters as required by the CCSS. No assessments of topics appear before the grade level where they first appear in the Standards. This can be easily verified because grade-level standards are clearly articulated throughout the program. This allows districts to feel confident that by following the *Glencoe Math* series, their teachers will meet the expectations of the CCSS and the requirements for success on the new assessments.

Before moving to Non-Negotiable 2, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 37.
Directions for Non-Negotiable 2
Focus and Coherence

Non-Negotiable 2: Materials must focus coherently on the Major Work of the grade in a way that is consistent with the progressions in the Standards.

Focus and coherence are the two major evidence-based design principles of the Common Core State Standards for Mathematics (CCSSM, p. 3). Focus is necessary in order to fulfill the ambitious promise the states have made to their students by adopting the Standards: greater achievement at the college and career ready level; greater depth of understanding of mathematics; and a rich classroom environment in which reasoning, sense-making, applications, and a range of mathematical practices flourish. In simpler terms, a mile-wide, inch-deep curriculum translates to less time per topic. Less time means less depth and moving on without many students. Thus, materials must focus coherently on the Major Work of the grade in a way that is consistent with the progressions in the Standards.

Required Materials

• Common Core State Standards for Mathematics (http://corestandards.org/wp-content/uploads/Math_Standards.pdf)


• Focus by Grade Level for the grade being evaluated (www.achievethecore.org/focus)

• From the materials being evaluated: teacher guides, student texts and workbooks

Rating this Criterion

Non-Negotiable 2 is rated as Meets or Does Not Meet.

To rate Non-Negotiable 2, first rate metrics 2A–2H. Each of these eight metrics must be rated as Meets in order for Non-Negotiable 2 to be rated as Meets. Rate each metric 2A-2H as Meets or Does Not Meet/Insufficient Evidence. If the evidence examined shows that the Criterion is met, then mark the Criterion Meets. If the evidence examined shows that the Criterion is not met—or if there is insufficient evidence to make a determination—then mark the Criterion as Does Not Meet/Insufficient Evidence. Support all ratings with evidence.
Non-Negotiable 2
Focus and Coherence

Metric

NN Metric 2A: In each grade K–8, students and teachers using the materials as designed devote the large majority of time to the Major Work of the grade.

How to Find the Evidence

Familiarize yourself with the Major Work of the grade being evaluated (see the Focus by Grade Level documents.)

Evaluate the table of contents and any pacing guides. Do not stop there; also evaluate units, chapters, lessons, homework assignments, and assessments. (Evaluate both student and teacher materials.)

Consider time spent on the Major Work of the grade and judge qualitatively whether students and teachers using the materials as designed will devote the large majority of time to the Major Work of the grade.

For context, read Criterion #1 in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

Evidence

The development of the content of McGraw-Hill’s Glencoe Math was built around the CCSS. Its organization reflects the emphasis at each grade level on the major work or clusters. The Teacher Walkaround Edition provides a complete correlation to the CCSS and identification of the clusters for each domain. (pages T23-T31)

The large majority of lessons have focus instruction or practice on a major cluster standard. In Course 1 (Grade 6), 75% of lessons have focus instruction or practice on the major clusters; Course 2 (Grade 7) - 81%; Course 3 (Grade 8) - 81%.

Glencoe Math’s online portal, ConnectED, can be accessed at www.connected.mcgraw-hill.com. The flexibility of ConnectED allows teachers to reposition lessons as needed. This unique feature provides for greater customization to meet individual district pacing and curriculum goals. This navigation ensures that students can spend the necessary time on task and meets the criterion.

Please refer to page 8a for a detailed breakdown of the major clusters in Glencoe Math.

Rating

✓ Meets

☐ Does Not Meet / Insufficient Evidence
**Page 8a – Additional Evidence**

In *Glencoe Math*, students spend the majority of their time understanding and applying the major work of each grade. An important subset of the major work is the progression that leads to success in algebra.

The following tables indicate the number of lessons that have focus instruction or practice on the major clusters compared to the total number of lessons in each grade. *The clusters leading to success in algebra are indicated by an asterisk.*

| **Course 1** |  |  |
| Major Cluster Standards | Number of Lessons |  |
| 6.RP.A* | 16 |  |
| 6.NS.A* | 7 |  |
| 6.NS.C* | 8 |  |
| 6.EE.A* | 12 |  |
| 6.EE.B* | 13 |  |
| 6.EE.C* | 4 |  |
| **Total** | 60 |  |

In Course 1, 60 out of 79 (76%) of the lessons focus on major clusters.

| **Course 2** |  |  |
| Major Cluster Standards | Number of Lessons | Number of Lessons |
| 7.RP.A* | 18 |  |
| 7.NS.A* | 13 |  |
| 7.EE.A* | 8 |  |
| 7.EE.B* | 19 |  |
| **Total** | **Total** |  |

In Course 2, 58 out of 72 (81%) of the lessons focus on major clusters.

| **Course 3** |  |  |
| Major Cluster Standards | Major Cluster Standards |
| 8.EE.A* | 9 |  |
| 8.EE.B* | 5 |  |
| 8.EE.C* | 9 |  |
| 8.F.A* | 4 |  |
| 8.F.B* | 5 |  |
| 8.G.A | 15 |  |
| 8.G.B | 3 |  |
| **Total** | 50 |  |

In Course 3, 50 out of 62 (81%) of the lesson focus on major clusters.
### Metric

**NN Metric 2B:**
Supporting Work, where present, enhances focus and coherence simultaneously by also engaging students in the Major Work of the grade.

### How to Find the Evidence

Familiarize yourself with the Major Work and Supporting Work of the grade being evaluated (see the Focus by Grade Level documents.)

Evaluate chapters and lessons that focus on Supporting Work. NOTE: Example of evaluating this Criterion might include looking at whether materials for K–5 generally treat data displays as an occasion for solving grade-level word problems using the four operations (e.g., see 3.MD.B.3); or whether materials for grade 7 take advantage of opportunities to use probability to support ratios, proportions, and percentages.

For context, read Criterion #3 in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

### Evidence

The supporting content found in McGraw-Hill’s *Glencoe Math* enriches the focus of the major work in each grade. **Supporting content occurs primarily after the major work in each grade is completed.** This positioning provides opportunities to use supporting work to enhance the major work of each grade.

<table>
<thead>
<tr>
<th>Course</th>
<th>Major Work</th>
<th>Supporting or Additional Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course 1</td>
<td>Chapters 1, 2, 4-8</td>
<td>Chapters 3*, 9-12</td>
</tr>
<tr>
<td>Course 2</td>
<td>Chapters 1-6</td>
<td>Chapters 7-10</td>
</tr>
<tr>
<td>Course 3</td>
<td>Chapters 1-7</td>
<td>Chapters 8, 9</td>
</tr>
</tbody>
</table>

*Chapter 3 is positioned early in Course 1 to meet the required fluencies in multi-digit division and multi-digit decimal operations.*

The selected examples on page 9a provide evidence of how supporting work is used to enhance focus and coherence in *Glencoe Math*.

### Rating

- Meets
- Does Not Meet/ Insufficient Evidence
Page 9a – Additional Evidence

The following examples show how supporting work is used to enhance focus and coherence in *Glencoe Math*.

**Course 1**

When students find a missing dimension of a rectangular prism, they solve a one-variable equation. (page 742)

- Major Cluster 6.EE.B: Reason about and solve one-variable equations and inequalities.

**Course 2**

When students make predictions from samples of data, they use proportional relationships. (page 794)

- Supporting Cluster 7.SP.A: Use random sampling to draw inferences about a population.
- Major Cluster 7.RP.A: Analyze proportional relationships and use them to solve real-world and mathematical problems.

**Course 3**

When students construct a scatter plot and draw a line of best fit, they write equations in slope-intercept form. (page 679)

- Supporting Cluster 8.SP.A: Investigate patterns of association in bivariate data.
- Major Cluster 8.EE.B: Understand the connections between proportional relationships, lines, and linear equations.
**Non-Negotiable 2**
Focus and Coherence

**Metric**

NN Metric 2C:
Materials base content progressions on the grade-by-grade progressions in the Standards. Content from previous or future grades does not unduly interfere with or displace on-grade-level content.

**How to Find the Evidence**

Evaluate the table of contents and any pacing guides. Do not stop there; also evaluate units, chapters, and lessons in both student and teacher materials. NOTE: In some cases it may be possible that aligned materials might address some aspects of a topic in a strategic way before or after the grade level in which the topic is central in the Standards’ progressions; for example, a curriculum author might purposefully choose to explore adding fractions with unlike denominators in a way appropriate to grade four, recognizing that this work is not really required until the next grade. However, any such purposeful discrepancies in content progressions should enhance the required learning in each grade; not unduly interfere with or displace grade-level content; and be clearly aimed at helping students meet the Standards as written rather than effectively rewriting the progressions in the Standards. And in all cases, note that Non-Negotiable 1 must be met for materials to be aligned.

For context, read Criterion #5a in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

**Evidence**

The content in McGraw-Hill’s *Glencoe Math* is based on the grade-by-grade progressions in the Standards. As indicated in the table on page 9a of this document, *grade-level work begins at the start of each year, allowing students ample time to make tangible progress during each year*. Teachers and students can identify their specific responsibility for each year in the Track Your Common Core Progress chart.

- **Course 1**: pages xix - xxii
- **Course 2**: pages xvii - xx
- **Course 3**: pages xvii - xviii

The deliberate progression of the standards in *Glencoe Math*, both within and across grades, is important for ensuring student success. **To see the complete grade-by-grade progression, please see Glencoe’s 6-8 Scope and Sequence in the Alignment Guide to the K-8 Common Core State Standards.** This document is intended for curriculum planning, particularly to demonstrate how McGraw-Hill’s *My Math* and *Glencoe Math* programs adhere to the new progression of concepts and skills across all grades K-8 as required by the CCSS.

**Rating**

- [x] Meets
- [ ] Does Not Meet / Insufficient Evidence

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Non-Negotiable 2
Focus and Coherence

Metric

NN Metric 2D:
Materials give all students extensive work with on-grade-level problems.

How to Find the Evidence

Evaluating both student and teacher materials.

If the materials provide resources for differentiated learning, consider whether lower-performing students have opportunities to engage with grade-level problems. Also consider whether higher-performing students are given opportunities to learn current grade-level content in greater depth.

For context, read Criterion #5b in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

Evidence

In McGraw-Hill’s Glencoe Math, a variety of resources support teachers in maintaining the grade-level focus while ensuring that no student’s conceptual understanding is disregarded. Every regular lesson includes activities and problems that address the focus standards for approaching-level (AL), on-level (OL), and beyond-level (BL) students. The approaching-level activities and problems are designed to prepare students who need more scaffolding for the mathematical thinking necessary for the main tasks of the lesson, whereas the beyond-level activities and problems extend the thinking of higher-performing students.

Please refer to page 11a for additional evidence.

Rating

☑ Meets

☐ Does Not Meet/ Insufficient Evidence
Page 11a – Additional Evidence

Opportunities for differentiation while maintaining the grade-level focus are available within Independent Practice. The Teacher Walkaround Edition provides Differentiated Homework Options for approaching-level, on-level, and beyond-level students. In general, the assignments are differentiated as follows:

- **Approaching-level**: more skill problems to provide scaffolding support; practice exercises mimic examples; at least one higher-order thinking (H.O.T.) problem; includes Power Up! Common Core Test Practice.

- **On-Level**: fewer skill problems; practice exercises extend examples; several higher-order thinking (H.O.T.) problems; includes Power Up! Common Core Test Practice.

- **Beyond-Level**: very few skill problems; more practice exercises that extend examples; all of the higher-order thinking (H.O.T.) problems; includes Power Up! Common Core Test Practice.

Exercises that review Common Core Standards are embedded at the end of each exercise set to provide a quick way to ensure that students retain concepts from year to year. In addition, the Teacher Wraparound Edition also provides differentiated activities for instruction in the Focus, Teach, and Guided Practice sections of each lesson.

Any regular lesson can be examined as evidence for this metric, but specific examples supporting NN Metric 2D include:

- Course 1: pages 43, 367, 629
- Course 2: pages 219, 399, 547
- Course 3: pages 315, 415, 513
**Metric**

**NN Metric 2E:**
Materials relate on-grade-level concepts explicitly to prior knowledge from earlier grades.

**How to Find the Evidence**

Evaluate both student and teacher materials. NOTE: Examples of evaluating this Criterion might include looking at the way the materials extend basic ideas of place value across the decimal point; or the role that properties of operations play when the materials extend arithmetic beyond whole numbers to fractions, variables, and expressions. More generally, cluster headings in the Standards sometimes signal key moments where reorganizing and extending previous knowledge is important in order to accommodate new knowledge (e.g., see cluster headings that use the phrase “apply and extend previous understanding”).

For context, read Criterion #5c in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

**Evidence**

The materials in *Glencoe Math* relate grade-level concepts to prior knowledge. One example can be found in the Previous/Now/Next section of the Teacher Walkaround Edition for each lesson and chapter of *Glencoe Math*.

- Course 1: pages 3, 339, 625
- Course 2: pages 187, 445, 481
- Course 3: pages 3, 145, 521

In addition, each chapter opener contains a section called What Do You Already Know? in which students assess their prior knowledge in graphic organizers.

- Course 1: pages 5, 551, 733
- Course 2: pages 259, 431, 553
- Course 3: pages 109, 265, 367

Several grade-level standards use the phrase “apply and extend previous understanding” to connect grade-level concepts to prior knowledge. Please see page 12a for some specific examples from *Glencoe Math*.

**Rating**

- [x] Meets
- [ ] Does Not Meet / Insufficient Evidence

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Page 12a – Additional Evidence

The following two examples show how prior knowledge is extended to acquire new knowledge in *Glencoe Math*.

**Course 1**

Apply and extend previous understandings of arithmetic to algebraic expressions (6.EE.A).

In Course 1 Chapter 6, students connect arithmetic to algebra through the use of bar diagrams. Students study the structure of numerical expressions before writing algebraic expressions. (pages 429-432 and 457-460) In the same chapter, students extend their knowledge of properties with whole numbers to include properties with variables. (pages 474 and 481-487)

**Course 2**

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers (7.NS.A).

In Course 2 Chapter 4, students recall previous knowledge about operations with positive fractions from Grade 5 and knowledge about operations with integers from Chapter 3 to perform operations with rational numbers. (pages 279-298 and 311-318) Students have used number lines with positive fractions and integers. In Chapter 4, they extend those models to include all rational numbers. (pages 279-282)
**Non-Negotiable 2**  
Focus and Coherence

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**Metric**

**NN Metric 2F:**  
Review of material from previous grades is clearly identified as such to the teacher, and teacher and students can see what their specific responsibility is for the current year.

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**How to Find the Evidence**

Evaluate the table of contents, but do not stop there; also evaluate units, chapters, lessons, homework assignments and assessments. (Evaluate both student and teacher materials.) Identify any content from previous grades and check whether it is identified as such.

For context, read Criterion #5a in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

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**Evidence**

As indicated in the table on page 9a of this document, grade-level work in *Glencoe Math* is expected to begin at the start of each year, without spending time reviewing material from previous years. When present, review material is used as differentiation support and is clearly identified as such.

- The Quick Review and Quick Check portions of the Are You Ready? pages in the Student Edition prepare students for the chapter’s core content. Student responses reveal which skills and understandings are secure, and which need more support.

- Each lesson contains a Common Core Spiral Review section so that students may reinforce their understanding of previously-learned concepts.

In addition, *Glencoe Math* also provides an adaptive online resource for differentiated instruction—ALEKS. Embedded within *Glencoe Math*, ALEKS uses open-response questioning to pinpoint gaps in student learning and deliver a personalized learning path and real-time reports on student progress. Students take the pre-assessment to identify which topics they are ready to learn. ALEKS can be accessed directly from ConnectED (www.connected.mcgraw-hill.com).

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**Rating**

☑ Meets  
☐ Does Not Meet/ Insufficient Evidence

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Non-Negotiable 2
Focus and Coherence

Metric

NN Metric 2G:
Materials include learning objectives that are visibly shaped by CCSSM cluster headings.

How to Find the Evidence

Select several clusters from the Major Work in the grade being evaluated. Evaluate teacher and student materials in relation to these clusters.

For context, read Criterion #6a in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

Evidence

The correlation documentation provided in the Teacher Walkaround Edition (pages T23-T31) clearly demonstrates how the organization of the program is built to support the goals of the CCSS. This correlation document highlights how the CCSS clusters and their associated lessons are grouped.

The majority of the lessons in a given cluster are grouped within a single chapter, but in some cases, it is important to develop concepts additional clusters and domains. This showcases how the clusters are interrelated. Please see the table of contents in the Teacher Walkaround Edition for examples of chapters that include interrelated clusters or domains.

Course 1: pages vi, ix, xi, xiv,
Course 2: pages vi, vii, viii, ix, x
Course 3: pages vi, viii, xxii

Rating

☑ Meets

☐ Does Not Meet/ Insufficient Evidence
Non-Negotiable 2
Focus and Coherence

Metric

NN Metric 2H:
Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade, in cases where these connections are natural and important.

How to Find the Evidence

In the grade being evaluated, choose two or more clusters or two or more domains for which connections are natural and important.

Evaluate the units, chapters, and lessons that deal with the chosen topics, looking for problems and activities that serve to connect the chosen clusters or domains. NOTE: An example of evaluating this Criterion might include looking at whether problems in grade 4 sometimes or often involve students applying their developing computation skills (detailed in domain NBT) in the context of solving word problems (detailed in domain OA).

For context, read Criterion #6b in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

Evidence

The natural place for connecting clusters and domains is with multiple representations. Multiple representation problems and activities are embedded throughout McGraw-Hill’s Glencoe Math. For example, in Course 1 Chapter 1, students learn about ratios and graph ratio tables. By Chapter 8, they are making tables and writing equations for real-world situations—thus connecting the Ratios and Proportional Relationships domain with the Expressions and Equations domain. Multiple representations are extended into Chapter 10 as students construct multiple representations for geometry situations. (Course 1, pages 666 and 677) By the time students are in Course 3, they will compare, construct, and analyze linear functions—connecting multiple domains. (Course 3, pages 309-326)

Inquiry Labs also provide opportunities to connect clusters and domains. For example, in the Inquiry Lab about circumference in Course 2, students do an activity that connects Ratios and Proportional Relationships, The Number System, Expressions and Equations, and Geometry. (Course 2, pages 611-612)

Rating

✔ Meets

☐ Does Not Meet/Insufficient Evidence

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Non-Negotiable 2
Focus and Coherence

Non-Negotiable 2: Materials must focus coherently on the Major Work of the grade in a way that is consistent with the progressions in the Standards.

Rating for Non-Negotiable 2

If all Metrics 2A – 2H were rated as Meets, then rate Non-Negotiable 2 as Meets. If one or more Metric was rated Does Not Meet/Insufficient Evidence, then rate Non-Negotiable 2 as Does Not Meet. Check the final rating.

Then, briefly describe the strengths and weaknesses of these materials in light of the above Criterion.

Rating

☑ Meets
☐ Does Not Meet

Strengths / Weaknesses:

McGraw-Hill’s *Glencoe Math* concentrates on the essential topics and clusters as required by the CCSS. Its organization reflects the emphasis at each grade level on the major work or clusters. The supporting content found in *Glencoe Math* enriches the focus of the major work in each grade. Grade-level work begins at the start of each year, allowing students ample time to make tangible progress during each year. All students have opportunities for meaningful engagement with grade-level problems. In summary, the lessons clearly address the progressions with support for differentiation.

Before moving to Alignment Criterion 1, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 37.

Now continue by evaluating the Alignment Criterion 1 for Rigor and Balance
Directions for Alignment Criterion 1

Rigor and Balance

Alignment Criterion 1: Materials must reflect the balances in the Standards and help students meet the Standards’ rigorous expectations.

The Standards set expectations for attention to all three aspects of rigor: conceptual understanding, procedural skill and fluency, and applications. Thus, materials must reflect the balances in the Standards and help students meet the Standards’ rigorous expectations.

Required Materials

- Focus by Grade Level for the grade being evaluated (achievethecore.org/focus)
- Situation Types for the Operations in Word Problems (achievethecore.org/situation-types)
- From the materials being evaluated: teacher guides, student texts and workbooks

- Choose a cluster/Standard from the Major Work that is aligned to each aspect of rigor and use it to evaluate these metrics. It is most helpful if the same clusters/Standards are chosen for all of the programs being evaluated. (Guidance in choosing clusters/Standards is included in “How to Find the Evidence” below.)

Rating this Criterion

Alignment Criterion 1 is rated as Meets or Does Not Meet.

To rate Alignment Criterion 1, first rate metrics 1A, 1B, and 1C. Rate each metric as Meets (2 points), Partially Meets (1 point), or Does Not Meet (0 points). For each metric, guiding questions are provided to aid in gathering evidence.

Since there are three metrics, and each metric is worth up to 2 points, the maximum possible rating across all three metrics is 6 points. Ideally, aligned materials will earn all 6 points; materials are judged to have met Alignment Criterion 1 if the materials rate 5 or 6 points. This threshold recognizes that evaluators sometimes differ in how they assess features such as rigor and balance, while at the same time ensuring that no single metric can receive a rating of zero and be aligned to the Shifts and major features of the CCSSM.
Alignment Criterion 1
Rigor and Balance

Use the questions on this page to evaluate Metric 1A. On page 19, record evidence for each question and rate Metric 1A.

<table>
<thead>
<tr>
<th>Metric</th>
<th>How to Find the Evidence</th>
<th>Questions for Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Metric 1A:</td>
<td>Select one or more cluster(s) or Standard(s) from the Major Work for the grade being evaluated that relate specifically conceptual understanding to use throughout the questions associated with this metric. NOTE: Some examples of clusters or Standards that call for conceptual understanding include: K.OA.A.1, (1.NBT.B, 1.NBT.C), (2.NBT.A, 2.NBT.B), (3.OA.A.1, 3.OA.A.2), 4.NFA, (4.NBT.A, 4.NBT.B), 5.NFB, (5.NBT.A, 5.NBT.B), 6.RPA, 6.EE.A.3, 7.NS.A, 7.EE.A, 8.EE.B, 8.FA, 8.GA</td>
<td>Is conceptual understanding attended to thoroughly where the Standards set explicit expectations for understanding or interpreting? Evaluate lessons, chapter/unit assessments and homework assignments, paying attention to work aligned to Standards that explicitly call for understanding or interpreting. NOTE: Examples of evaluating this Criterion might include looking at how well the multi-digit addition and subtraction algorithms are developed and explained on the basis of place value and properties of operations; or how well the multi-digit multiplication and division algorithms are developed and explained on the basis of place value and properties of operations; or how well solving equations is presented and explained as a process of reasoning. Do the materials feature high-quality conceptual problems and conceptual discussion questions? Evaluate lessons, chapter/unit assessments, and homework assignments. NOTE: Example of conceptual problems might include such questions as “Find a number greater than 1/5 and less than 1/4,” or “If the divisor does not change and the dividend increases, what happens to the quotient?” Do the materials feature opportunities to identify correspondences across mathematical representations? Evaluate lessons, chapter/unit assessments and homework assignments. NOTE: Examples of evaluating this Criterion might include looking at whether students are supported in identifying correspondences among: the verbal description of a situation, the diagrams that distill its mathematical features, and the equations that model it; or equivalent forms of numbers (e.g., 3 and 9/3) and the number line; or rational number operations and representations of them via models such as the vector model; or the expression that defines a function and the graph that shows the relationship.</td>
</tr>
</tbody>
</table>

Clusters or Standards grouped by parentheses are closely connected and could be analyzed together.

### Alignment Criterion 1

**Rigor and Balance**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AC Metric 1A:</strong> The materials support the development of students’ conceptual understanding of key mathematical concepts, especially where called for in specific content Standards or cluster headings.</td>
<td>Is conceptual understanding attended to thoroughly where the Standards set explicit expectations for understanding or interpreting? Yes. In <em>Glencoe Math</em>, conceptual understanding is developed through Inquiry Labs, Higher-Order Thinking (H.O.T.) problems, virtual manipulatives, The Geometer’s Sketchpad, and problem-based learning activities. Please see page 19a for specific examples. Do the materials feature high-quality conceptual problems and conceptual discussion questions? Yes. The level of complexity of the problems in each lesson and Inquiry Lab increases, beginning with conceptual problems having a low level of complexity, and progressing to higher levels of complexity. Higher-Order Thinking (H.O.T.) problems provide opportunities for students to engage in discourse to describe or defend their solutions and reasoning as they exhibit their increasing levels of critical thought. Please see page 19a for specific examples. Do the materials feature opportunities to identify correspondences across mathematical representations? Yes. The Key Concept boxes in the interactive Student Edition support students in understanding multiple representations. The interactive nature of <em>Glencoe Math</em> provides other opportunities to identify correspondences across mathematical representations, such as graphic organizers that the students are required to complete, and Dinah Zike’s Foldables that are three-dimensional personalized graphic organizers. Please see page 19a for specific examples.</td>
</tr>
</tbody>
</table>

### Rating

- [x] Meets (2)
- [ ] Partially Meets (1)
- [ ] Does Not Meet (0)
Conceptual understanding in *Glencoe Math* is developed both within one grade and across multiple grades. Some examples from major clusters follow.

**Grade 6: Major Cluster 6.EE.A**

In Course 1, Chapter 6, students extend their previous understandings of arithmetic to understand the structure of algebraic expressions. Students are introduced to algebraic expressions in Inquiry Labs that are based on bar diagrams (pages 429-432, 457-460), use area models both arithmetically and algebraically with the Distributive Property (pages 481-484), and finally simplify algebraic expressions using properties (pages 496-497).

Examples of conceptual discussion questions include #12 on page 466, #17 and 18 on page 490, and #17 on page 500. Students are supported in their understanding of multiple representations with the graphic organizers on page 449, 462-463, 486, and 508, Exercise #6 on page 465, and the Foldables on pages 506 and 646.

**Grade 7: Major Cluster 7.NS.A**

In Course 2, Chapters 3 and 4, students extend their previous understandings of fractions to rational numbers. Students are introduced to operations with integers in Inquiry Labs using counters (pages 199-202, 211-214, 229-232) and connect the conceptual development to symbolic methods in following lessons. Students may also use virtual manipulatives and/or problem-based learning activities, available in the Student Center of ConnectED (www.connected.mcgraw-hill.com). Operations with rational numbers are introduced using number lines. (pages 279-282)

Examples of conceptual discussion questions include #17 on page 202, #20 on page 220, #14 on page 238, #13 on page 276, and #6 on page 316. Multiple representations are highlighted in the graphic organizers on page 203 and 271, and number lines on pages 204, 205, 261-262, and 284. The Foldables on pages 254 and 339 also promote fluency.

**Grade 8: Major Cluster 8.G.A**

In Course 3, Chapter 6 and 7, students extend their understanding of transformations to the study of congruence and similarity. Students use tracing paper, grid paper, and geometry software in inquiry labs. (pages 449-452, 483-486, 505-508, and 529-530) Additional explorations using The Geometer’s Sketchpad provide opportunities for more in-depth investigations. Sketchpad investigations, including student worksheets and teacher notes, can be found in ConnectED for most lessons in these chapters.

Examples of conceptual discussion questions include #9 on page 526 and #9-#10 on page 550. Both geometric representations and algebraic representations are highlighted in these chapters, as students not only use physical objects to describe transformations but also show transformations on a coordinate plane and describe their properties. (pages 453-455, 461-463, 475-477, and 537-539)
Alignment Criterion 1
Rigor and Balance

Use the questions on this page to evaluate Metric 1B. On page 21, record evidence for each question and rate Metric 1B.

**Metric**

**How to Find the Evidence**

AC Metric 1B:
The materials are designed so that students attain the fluencies and procedural skills required by the Standards.

Select one or more cluster(s) or Standard(s) from the Major Work for the grade being evaluated that relate specifically to fluency and procedural skill to use throughout the questions associated with this metric. NOTE: Some examples of Standards that call for procedural skill and fluency include:


**Questions for Metric**

Is progress toward fluency and procedural skill interwoven with students’ developing conceptual understanding of the operations in question? Evaluate lessons, chapter/unit assessments, daily routines, and homework assignments for evidence that the development of fluency and procedural skill is supported by conceptual understanding.

Are purely procedural problems and exercises present that include cases in which opportunistic strategies are valuable and generic cases that require efficient algorithms present? Evaluate lessons, chapter/unit assessments, daily routines, and homework assignments. NOTE: Examples of problems in which opportunistic strategies are valuable might include the sum 698 + 240 or the system x + y = 1, 2x + 2y = 3. Examples of generic cases that require efficient algorithms might include the sum 8767+2286 or the system 6y + x = 3 x + 3, – 1 x = 1 + 2y.

### Alignment Criterion 1

**Rigor and Balance**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Metric 1B: The materials are designed so that students attain the fluencies and procedural skills required by the Standards.</td>
<td>Is progress toward fluency and procedural skill interwoven with students’ developing conceptual understanding of the operations in question? Yes. Each regular lesson in <em>Glencoe Math</em> contains step-by-step examples that lead to fluency. The methods and algorithms presented are based on principles of mathematics, not on tricks. These properties and principles are shown with each step in the examples. Please see page 21a for specific examples. Are purely procedural problems and exercises present that include cases in which opportunistic strategies are valuable and generic cases that require efficient algorithms present? Yes. Each lesson provides a sufficient number of exercises in the Guided Practice, Independent Practice, and Extra Practice sections of the Student Edition so that students can practice algorithms before applying them in more complex problems. Online digital resources, including leveled worksheets and fluency masters provide a direct and immediate opportunity for teachers to dedicate time for practice when necessary for approaching-level or on-level students. Please see page 21a for specific examples. Do the materials in grades K–6 provide repeated practice toward attainment of fluency Standards? Yes. In Course 1 Chapter 3, students build on concepts from Grades 4 and 5 to develop the traditional algorithms for operations with multi-digit decimals. These skills are used in subsequent examples and are reinforced in the Common Core Spiral Review section of the exercise sets.</td>
</tr>
</tbody>
</table>

### Rating

- [x] Meets (2)
- [ ] Partially Meets (1)
- [ ] Does Not Meet (0)

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*Glencoe Math ©2015*
Page 21a – Additional Evidence

Developing fluency with algebraic operations is an important goal of any middle school mathematics program as algebraic fluency is often the gateway to higher mathematics. *Glencoe Math* provides ample opportunity for students to understand and practice algebraic skills to fluency.

**Grade 6: Major Cluster 6.EE.B**

In Course 1, students are introduced to one-step equations in a very thoughtful process. Initially, students apply previous understandings of bar diagrams to solve equations, then extend the concept to include manipulatives and properties of equality. Please refer to pages 526-527, 536-537, 552-553, and 562-563 to see how *Glencoe Math* connects the models, examples, and properties. Note that the Words/Variable/Bar Diagram/Equation box starts to develop multiple representations in this major cluster.

Opportunities for practice are included in Got It? problems, Guided Practice exercises, Independent Practice exercises, and Extra Practice. Please note that many exercises require students to compute fluently with decimals. (page 539 #4-6, page 541 #22-24, page 555 #4-6, page 557 #24-26, page 565 #3, and page 567 #18-20)

**Grade 7: Major Cluster 7.EE.B**

Developing fluency with algebraic operations continues in Course 2 and is based on the work students completed in Grade 6. After having completed the Inquiry Lab on pages 477-480, students can model two-step equations and their solutions using algebra tiles and the properties of equality—and many of them may be solved mentally. The examples on pages 482-483 provide step-by-step solutions for more difficult two-step equations. The blue annotations provide guidance as to the mathematical principles used.

Ample opportunities for practice are given in the Got It? problems on pages 482-483, Guided Practice exercises on page 484, Independent Practice exercises on page 485 and Extra Practice on page 487.

**Grade 8: Major Cluster 8.EE.C**

By the time students are using Course 3, they rely less and less on physical manipulatives for conceptual understanding. Instead, they may begin to use graphing technology, such as in the Inquiry Lab on pages 231-232 where they first encounter systems of linear equations. In addition, students are becoming fluent with the process of using multiple representations to develop concepts—in this case, going from tables, to equations, to graphs to solve a simple system of equations, (pages 233-241) and finally becoming fluent in solving them through algebraic methods. (pages 243-249)

As with Course 1 and Course 2, ample opportunities for practice are provided in the Student Edition and online at ConnectED (www.connected.mcgraw-hill.com).
Alignment Criterion 1
Rigor and Balance

Use the questions on this page to evaluate Metric 1C. On page 23, record evidence for each question and rate Metric 1C.

<table>
<thead>
<tr>
<th>Metric</th>
<th>How to Find the Evidence</th>
<th>Questions for Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Metric 1C:</td>
<td>The 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. Select one or more cluster(s) or Standard(s) from the Major Work for the grade being evaluated that relate specifically to application to use throughout the questions associated with this metric. Note: Some examples of clusters or Standards that call for application include: K.OA.A.2, 1.OA.A, 2.OA.A, 3.OA.A.3, 3.OA.D.8, 4.OA.A.3, 4.NF.B.3d, 4.NF.B.4c, 5.NF.B.6, 5.NF.B.7c, 6.RP.A.3, 6.NS.A.1, 6.EE.B.7, 6.EE.C.9, 7.RP.A, 7.NS.A.3, 7.EE.B.3, 8.EE.C.8c, 8.F.B.</td>
<td>Are there single- and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade, afford opportunities for practice, and engage students in problem solving? Do the problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit? Evaluate lessons, chapter/unit assessments, and homework assignments. Do application problems particularly stress applying the Major Work of the grade? Evaluate lessons, chapter/unit assessments, and homework assignments. Note: Examples of evaluating this Criterion might include looking at: how well, by the end of grade 2, students using the materials as designed can represent and solve a full range of one-step addition and subtraction word problems; or how well, by the end of grade 3, students using the materials as designed can represent and solve a full range of one-step multiplication and division word problems; or how well these basic situation types for each operation are carried coherently across the grades, (e.g., with fractions and algebraic expressions); or, in all grades, whether the problems connect concepts, Standards, and domains in ways that are natural and important. For a list of situation types for one-step addition, subtraction, multiplication, and division problems, see Situation Types for the Operations in Word Problems. Does modeling build slowly across K–8, with applications that are relatively simple in earlier grades and when students are encountering new content? In grades 6–8, do the problems begin to provide opportunities for students to make their own assumptions or simplifications in order to model a situation mathematically? Read Standard for Mathematical Practice 4, Model with Mathematics. Evaluate lessons, chapter/unit assessments, and homework assignments.</td>
</tr>
</tbody>
</table>

For context, read Criterion #4c in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).
Alignment Criterion 1
Rigor and Balance

Metric

AC Metric 1C:
The 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.

Evidence

Are there single- and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade, afford opportunities for practice, and engage students in problem solving? Do the problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit?

Yes. McGraw-Hill’s Glencoe Math provides an ample number of single- and multi-step contextual problems to engage students in meaningful and realistic problem-solving experiences while allowing them to increase their fluency. Each lesson includes applications of the lesson’s core concept in contextual problem-solving scenarios. Each chapter contains a Problem-Solving Investigation, which includes non-routine problems, as well as a problem-solving scenario presented as a graphic novel. The Common Core Practice Masters ancillary, available in print and online at ConnectED, (www.connected.mcgraw-hill.com) provides additional rigorous multi-step problems for each lesson with scaffolded examples. Please see page 23a for specific examples.

Do application problems particularly stress applying the Major Work of the grade?
Yes. For more in-depth and sophisticated problem-solving experiences that require students to apply the major work of each grade, the series includes 21st Career Careers and Unit Projects in the Student Edition. STEM Projects, available online at ConnectED, allow students to use the engineering design process to solve problems. Please see page 23a for specific examples.

Does modeling build slowly across K–8, with applications that are relatively simple in earlier grades and when students are encountering new content? In grades 6–8, do the problems begin to provide opportunities for students to make their own assumptions or simplifications in order to model a situation mathematically?
Yes. The interactive text affords students the ability to create their own concrete representations in diagrams and pictures in order to connect their own conceptual understandings with more abstract symbolic notations. Modeling builds slowly across the program. For example, in Course 1 students use counters and algebra tiles primarily, with some simple graphing, to represent problem-solving situations. By Course 3, students have transitioned to graphs and other multiple representations for problem solving.

Rating

☑ Meets (2)
☐ Partially Meets (1)
☐ Does Not Meet (0)
Page 23a – Additional Evidence

*Glencoe Math* contains high-quality contextual problems that develop the mathematics of the grade and engage students in problem solving at many levels. Some examples from the Ratios and Proportional Relationships and Functions major clusters follow. Unless otherwise specified, page references refer to the Student Edition.

**Grade 6: Major Cluster 6.RP.A**
- Contextual Problems within Lessons: pages 43-45, 51-53, 75-77
- 21st Century Career—Cosmetic Chemist: pages 79-80
- Problem-Solving Investigation—The Four-Step Plan: pages 55-57
- Graphic Novel—Squeezing Lemons: page 5
- *Common Core Practice Masters*: pages 3-14
- Unit Project—Compare Population Data: pages 2 and 169-170
- STEM Project—Bridge Building: See ConnectED under the Plan & Present Tab.

**Grade 7: Major Cluster 7.RP.A**
- 21st Century Career—Biomedical Engineering: pages 89-90
- Problem-Solving Investigation—The Four-Step Plan: pages 41-43
- Graphic Novel—Go-Kart Race: page 5
- *Common Core Practice Masters*: pages 1-18
- Unit Project—Travel Costs: pages 2 and 183-184
- STEM Project—Community Design: See ConnectED under the Plan & Present Tab.

**Grade 8: Major Cluster 8.F.B**
- 21st Century Career—Physical Therapist: pages 355-356
- Problem-Solving Investigation—Make a Table: pages 305-307
- Graphic Novel—Picture This: page 265
- *Common Core Practice Masters*: pages 47-64
- Unit Project—Community Garden: pages 262 and 361-362
- STEM Project—School Renovation: See ConnectED under the Plan & Present Tab.
Alignment Criterion 1
Rigor and Balance

Alignment Criterion 1: Materials must reflect the balances in the Standards and help students meet the Standards’ rigorous expectations.

Points Assigned for Alignment Criterion 1

Materials must earn at least 5 out of 6 points to meet this Alignment Criterion. If materials earn less than 5 out of 6 points, the Criterion has not been met. Check the final rating.

Then, briefly describe the strengths and weaknesses of these materials in light of the above Criterion.

Rating

6  Total (6 points possible)

Strengths / Weaknesses:

The organization of McGraw-Hill’s *Glencoe Math* program was purposefully designed to support a balance between the development of conceptual understandings, the need for instilling proficiency, and the desire to make the mathematics rich and meaningful to every student.

The materials feature high-quality conceptual problems and conceptual discussion questions and feature frequent opportunities to identify multiple representations. Progress toward fluency—particularly fluency in algebraic operations—is interwoven with conceptual understanding and applied within and across courses. *Glencoe Math* contains high-quality contextual problems that develop the mathematics of the grade and engage students in problem solving at many levels.

Before moving to Alignment Criterion 2, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 37.
Directions for Alignment Criterion 2
Standards for Mathematical Practice

Alignment Criterion 2: Materials must demonstrate authentic connections between content Standards and practice Standards.

The Standards require that designers of instructional materials connect the mathematical practices to mathematical content in instruction. Thus, materials must demonstrate authentic connections between content Standards and practice Standards.

Required Materials

• Common Core State Standards for Mathematics (http://corestandards.org/wp-content/uploads/Math_Standards.pdf)


• Focus by Grade Level for the grade being evaluated (www.achievethecore.org/focus)

• From the materials being evaluated: teacher guides, student texts and workbooks

Rating this Criterion

Alignment Criterion 2 is rated as Meets or Does Not Meet.

To rate Alignment Criterion 2, first rate metrics 2A, 2B, and 2C. Rate each metric as Meets (2 points), Partially Meets (1 point), or Does Not Meet (0 points). For each metric, guiding questions are provided to aid in gathering evidence.

Since there are three metrics, and each metric is worth up to 2 points, the maximum possible rating across all three metrics is 6 points. Ideally, aligned materials will earn all 6 points; materials are judged to have met Alignment Criterion 2 if the materials earn 5 or 6 points. This threshold recognizes that evaluators sometimes differ in how they assess features such as mathematical practices, while at the same time ensuring that no single metric can receive a rating of zero and be aligned to the Shifts and major features of the CCSSM.

Glencoe Math ©2015
Alignment Criterion 2
Standards for Mathematical Practice

AC Metric 2A:
Materials address the practice Standards in such a way as to enrich the Major Work of the grade; practices strengthen the focus on Major Work instead of detracting from it, in both teacher and student materials.

How to Find the Evidence

Familiarize yourself with the Major Work of the grade being evaluated (see the Focus by Grade Level documents.)

Evaluate teacher and student materials for evidence that the mathematical practices support and connect to the focus of the grade. NOTE: Examples of evaluating this Criterion might include looking at whether, in grades K–5, students using the materials are supported to look for and express regularity in repeated reasoning about the addition table, the multiplication table, the properties of operations, the relationship between addition and subtraction or multiplication and division, and the place value system; or whether, in grades 6–8, students using the materials are supported to look for and express regularity in repeated reasoning about proportional relationships and linear functions.


Evidence

McGraw-Hill’s Glencoe Math provides a structured and focused approach to the development of the practice Standards. Each course begins with a Mathematical Practices Handbook, the purpose of which is to introduce students to each of the practices that they will use throughout the year. (pages MP1-MP20) Every lesson, Inquiry Lab, and Problem-Solving Investigation in Glencoe Math integrates content and practice Standards in both the Student Edition and Teacher Walkaround Edition, ensuring students at all levels meaningfully engage with the practice Standards as they explore major work.

The labeling of the practice Standards with an ‘MP’ icon at key points in the H.O.T. Problem section of the Student Edition and in the differentiation strategies in the Launch the Lesson and Guided Practice sections of the Teacher Walkaround Edition is purposeful. It provides an indication of a clear and specific example for teachers to use in drawing student attention to the practice without making it overwhelming. Similar labeling is included in Inquiry Labs and Problem-Solving Investigations.

Rating

☑ Meets (2)
☐ Partially Meets (1)
☐ Does Not Meet (0)

Publisher: Glencoe Math ©2015
Alignment Criterion 2
Standards for Mathematical Practice

Use the questions on this page to evaluate Metric 2B. On page 28, record evidence for each question and rate Metric 2B.

<table>
<thead>
<tr>
<th>Metric</th>
<th>How to Find the Evidence</th>
<th>Questions for Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Metric 2B: Materials attend to the full meaning of each practice Standard.</td>
<td>For context, read Criterion #7 and Criterion #9 in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).</td>
<td>Over the course of any given year of instruction, is each mathematical practice Standard meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice Standard? Evaluate lessons, chapter/unit assessments, and homework assignments for evidence of each mathematical practice being meaningfully present in instruction. Do the materials treat the practice Standards as developing across grades or grade bands? Are the practice Standards in early grades appropriately simple? Do they display an arc of growing sophistication across the grades? Evaluate lessons, chapter/unit assessments, and homework assignments. Are there teacher-directed materials that explain the role of the practice Standards in the classroom and in students’ mathematical development? Are alignments to practice Standards accurate? Evaluate teacher materials, paying attention to explanations of the role of the practice Standards in the classroom and in students’ mathematical development. Evaluate documents aligning lessons to practice Standards for accuracy. NOTE: Examples to look for when evaluating this metric might include the following: a highly scaffolded problem should not be aligned to MP.1; or a problem that directs a student to use a calculator should not be aligned to MP.5; or a problem about merely extending a pattern should not be aligned to MP.8.</td>
</tr>
</tbody>
</table>
Alignment Criterion 2
Standards for Mathematical Practice

Metric

AC Metric 2B:
Materials attend to the full meaning of each practice Standard.

Evidence

Over the course of any given year of instruction, is each mathematical practice Standard meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice Standard?

Yes. In order for students to fully realize the importance of each practice standard, McGraw-Hill’s *Glencoe Math* developed a thoughtful and strategic approach to the instruction and application of each one.

See page 28a for evidence.

Do the materials treat the practice Standards as developing across grades or grade bands? Are the practice Standards in early grades appropriately simple? Do they display an arc of growing sophistication across the grades?

Yes. The *Alignment Guide to the K-8 Standards for Mathematical Practice* contains a standard-by-standard analysis of each practice Standard, including its meaning, what it looks like when applied in the classroom setting for different grade bands, and the types of questions teachers should pose in order to foster the students’ mathematical development.

Are there teacher-directed materials that explain the role of the practice Standards in the classroom and in students’ mathematical development?

Yes. Professional development teacher support is found in the *Standards for Mathematical Practices in Action* videos that reside in the PD tab on ConnectEd (www.connected.mcgraw-hill.com). A companion online guide describes the routine used for each viewing session and provides discussion questions, reflection activities, and extension activities for each practice Standard tailored to grade-level appropriate expectations.

Rating

- [x] Meets (2)
- [ ] Partially Meets (1)
- [ ] Does Not Meet (0)
Page 28a – Additional Evidence

Every lesson, Inquiry Lab, and Problem-Solving Investigation integrates content and practice Standards, ensuring students at all grade levels meaningfully engage with the practice Standards.

**Practice 1** A strong problem-solving strand is present throughout the course with an emphasis on strategies in the Problem-Solving Investigation lessons. This practice is emphasized in every lesson.

**Practice 2** Students are routinely asked to write an equation or an expression in order to solve a real-world problem.

**Practice 3** Students are required to justify their reasoning in problems and to find the errors in samples of other’s work. This practice is emphasized in every lesson.

**Practice 4** Real-world applications in problem solving are woven throughout every lesson. This practice is emphasized in every lesson.

**Practice 5** In addition to the traditional mathematical tools like estimating, using mental math, or measuring, students are encouraged to use software and the Internet in problem solving.

**Practice 6** Solutions are not just numbers, but include measurements to give the solution meaning.

**Practice 7** Emphasizing the structure of mathematics is present through the use of classifying, explaining, and giving examples and nonexamples.

**Practice 8** Patterns in reasoning are demonstrated throughout leading students to sound mathematical conclusions.

The Teacher Walkaround Edition provides a full text of the standards in a correlation document. (pages T23-T25) Descriptions of the kinds of exercises where students use the practice Standards are included in the ‘Student Edition’ column.
Alignment Criterion 2
Standards for Mathematical Practice

Use the questions on this page to evaluate Metric 2C. On page 30, record evidence for each question and rate Metric 2C.

<table>
<thead>
<tr>
<th>Metric</th>
<th>How to Find the Evidence</th>
<th>Questions for Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Metric 2C:</td>
<td>For context, read Criterion #10 in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).</td>
<td>Do the materials support students in constructing viable arguments and critiquing the arguments of others concerning grade-level mathematics that is detailed in the content Standards? Read Standard for Mathematical Practice 3. Evaluate teacher and student materials to ensure that students are given opportunities to reason with grade-level mathematics.</td>
</tr>
<tr>
<td></td>
<td>Do the materials support students in producing not only answers and solutions, but also, in a grade-appropriate way, arguments, explanations, diagrams, mathematical models, etc., especially in the Major Work of the grade? Familiarize yourself with the Major Work of the grade being evaluated (see the Focus by Grade Level documents.) Evaluate teacher and student materials, to understand the types of work students are expected to produce.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do materials explicitly attend to the specialized language of mathematics? Is the language of argument, problem solving, and mathematical explanations taught rather than assumed? Evaluate teacher and student materials, paying attention to how mathematical language is taught. NOTE: Examples of evaluating this Criterion might include looking at whether students are supported in: basing arguments on definitions; using the method of providing a counterexample; or recognizing that examples alone do not establish a general statement.</td>
<td></td>
</tr>
</tbody>
</table>
Alignment Criterion 2
Standards for Mathematical Practice

Metric

AC Metric 2C:
Materials support the Standards’ emphasis on mathematical reasoning.

Evidence

Do the materials support students in constructing viable arguments and critiquing the arguments of others concerning grade-level mathematics that is detailed in the content Standards?
Yes. The materials contained in *Glencoe Math* support the Standards’ emphasis on mathematical reasoning. Exercises labeled Justify Conclusions, Reason Inductively, Find the Error, Construct an Argument, and others, indicate some of the places where mathematical reasoning is embedded throughout *Glencoe Math*.

See page 30a for evidence.

Do the materials support students in producing not only answers and solutions, but also, in a grade-appropriate way, arguments, explanations, diagrams, mathematical models, etc., especially in the Major Work of the grade?
Yes. Students are supported in producing grade-appropriate arguments. Please see pages MP7-MP8 in each Student Edition for examples showing how *Glencoe Math* introduces students to this standard.

Do materials explicitly attend to the specialized language of mathematics? Is the language of argument, problem solving, and mathematical explanations taught rather than assumed?
Yes. The vocabulary strand in *Glencoe Math* was designed with the understanding that students must be able to interpret the language of mathematics—symbols, non-linguistic data, numbers—in order to access meaning.

See page 30a for evidence.

Rating

- [X] Meets (2)
- [ ] Partially Meets (1)
- [ ] Does Not Meet (0)
In Inquiry Labs, students investigate, collaborate, analyze, and reflect on important new mathematical concepts. Students routinely reason inductively and justify conclusions. (See Course 1, page 304.) They also make conjectures and justify their reasoning as they move from concrete to abstract concepts. For example, after students complete several activities connecting the area of parallelograms to the area of rectangles, they are asked to write a rule for finding the area of any parallelogram, explaining how it is related to finding the area of a rectangle. (Course 1, pp. 657-660)

Due to the interactive nature of the text, both the Guided Practice and Independent Practice exercises provide numerous opportunities for students to describe and defend their work. Every Guided Practice section offers a question that builds on the Essential Question of the chapter and requires an explanation. (Course 2, page 236) Every lesson also contains Higher-Order Thinking (H.O.T.) problems that promote critical thinking. (Course 2, page 238) Students are also asked to critique given arguments in exercises such as Find the Error. (Course 2, page 239)

Finally, McGraw-Hill Glencoe Math develops students’ reasoning by requiring their arguments to increase in sophistication from Course 1 to Course 3. In Course 1, students determine whether a given statement is always, sometimes, or never true. (Course 1, page 360) By Course 3, students begin to explain reasoning through a formal and informal proof process. (Course 3, pages 379-385)

Mathematical and academic vocabulary understanding is built into the program. Vocabulary Start-Ups introduce new vocabulary with graphic organizers. (Course 2, page 191) Key concept boxes emphasize the multiple representations of words, models, and symbols. (Course 3, page 412) New vocabulary terms are highlighted in yellow for ease of use. The eGlossary contains vocabulary words and definitions in 13 languages.
Alignment Criterion 2
Standards for Mathematical Practice

Alignment Criterion 2: Materials must demonstrate authentic connections between content Standards and practice Standards.

Points Assigned for Alignment Criterion 2

Materials must earn at least 5 out of 6 points to meet this Alignment Criterion. If materials earn less than 5 out of 6 points, the Criterion has not been met. Check the final rating.

Then, briefly describe the strengths and weaknesses of these materials in light of the above Criterion.

Rating

6
Total (6 points possible)

☑ Meets

☐ Does Not Meet

Strengths / Weaknesses:

The goal of the Standards for Mathematical Practice is to instill in ALL students the abilities to be mathematically literate and create a positive disposition for the importance of using math effectively. All materials in *Glencoe Math* support instruction of the practice Standards and connects them to the focus of the grade.

Each practice standard is meaningfully present in the form of assignments, activities, or problems. In addition, the program includes teacher-directed material that explains the role of the practice standards in the classroom. The program supports students in constructing viable arguments and attends to the specialized language of mathematics.

Before moving to Alignment Criteria 3, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 37.
Directions for Alignment Criterion 3
Access to the Standards for All Students

Alignment Criterion 3: Materials must provide supports for English Language Learners and other special populations.

Because Standards are for all students, alignment requires thoughtful support to ensure all students are able to meet the Standards. Thus, aligned materials must provide supports for English Language Learners and other special populations.

Required Materials


- From the materials being evaluated: teacher guides, student texts and workbooks

Rating this Criterion

Alignment Criterion 3 is rated as Meets or Does Not Meet.

To rate Alignment Criterion 3, first rate metrics 3A, 3B, and 3C. Rate each metric as Meets (2 points), Partially Meets (1 point), or Does Not Meet (0 points).

Since there are three metrics, and each metric is worth up to 2 points, the maximum possible rating across all three metrics is 6 points. Ideally, aligned materials will earn all 6 points; materials are judged to have met Alignment Criterion 3 if the materials earn 5 or 6 points. This threshold recognizes that evaluators sometimes differ in how they assess features such as support for special population, while at the same time ensuring that no single metric can receive a rating of zero and be aligned to the Shifts and major features of the CCSSM.
Alignment Criterion 3
Access to the Standards for All Students

Metric

AC Metric 3A:
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.

How to Find the Evidence
Evaluate teacher and student materials, paying attention to supports offered for special populations.

Evidence
Content instruction is one of the most effective methods of acquiring fluency in a second language. The interactive nature of McGraw-Hill’s *Glencoe Math* ensures that students take ownership of their learning. English Language Learners benefit from visual references to new vocabulary. Graphic organizers and Foldables in the Student Edition, as well as the Virtual Word Wall and Visual Vocabulary Flashcards, provide visual, contextual, and linguistic support.

Every lesson in McGraw-Hill’s *Glencoe Math* contains multiple, specific suggestions for working with special populations of students. Small group activities, located in the Teacher Walkaround Edition at point-of-use in the Launch the Lesson and Teach the Concept sections, address the needs of approaching-level (AL), on-level (OL), beyond-level (BL) students, and English Language Learners (EL). There are a variety of activities that are designed for students working in pairs, in small groups, and for the entire class.

Additional activities can be found online at ConnectED (www.connected.mcgraw-hill.com) under the Plan & Present tab. Choose any lesson and open Additional Activities for English Learners.

*Glencoe Math* also provides a comprehensive *Interactive Guide for English Learners*—one for each course. Available in print and online, the Student Edition contains templates for word cards, three-column charts, and more. These interactive pages, one for each lesson, Inquiry Lab, and Problem-Solving Investigation, can be used before, during, or after each classroom lesson. The Teacher Edition, available online only, contains suggestions for English acquisition strategies such as sentence frames and modeled talk, scaffolded differentiated activities for emerging level, expanding level, and bridging level, and multicultural teaching tips.

The *Interactive Guide for English Learners* also includes Dinah Zike’s Visual Kinesthetic Vocabulary flashcards for English/Spanish cognates.

Rating

☑ Meets (2)
☐ Partially Meets (1)
☐ Does Not Meet (0)
Alignment Criterion 3
Access to the Standards for All Students

Metric

AC Metric 3B:
Materials provide appropriate level and type of scaffolding, differentiation, intervention, and support for a broad range of learners with gradual removal of supports, when needed, to allow students to demonstrate their mathematical understanding independently.

How to Find the Evidence

Evaluate teacher and student materials, paying attention to whether materials provide differentiation that will lead all learners to engage with on-grade-level content.

Evidence

Every chapter and lesson in Glencoe Math contains multiple differentiation options to address the needs of a broad range of learners.

Beginning with each Chapter Opener, Are You Ready? is used to determine whether students have prerequisite skills that are needed for the chapter. Differentiation options can be found in ConnectED (www.connected.mcgraw-hill.com) for Tier 1 and Tier 2 students as well as for students who would benefit from extension. For Tier 3 students, Number Worlds is a separate program from McGraw-Hill that provides intensive remediation. Each lesson week focuses on a key Common Core Standard.

Every lesson in McGraw-Hill’s Glencoe Math contains multiple, specific suggestions for working with special populations of students. Small group activities, located in the Teacher Walkaround Edition at point-of-use in the Launch the Lesson and Teach the Concept sections, address the needs of approaching-level (AL), on-level (OL), and beyond-level (BL) students. There are a variety of activities that are designed for students working in pairs, in small groups, and for the entire class.

Additional differentiation activities can be found online at ConnectED under the Plan & Present tab. Choose any lesson and open Additional Activities for Differentiated Instruction.

Finally, Glencoe Math provides an adaptive online resource for differentiated instruction—ALEKS. Embedded within Glencoe Math, ALEKS uses open-response questioning to pinpoint gaps in student learning and deliver a personalized learning path and real-time reports on student progress. Students take the pre-assessment to identify which topics they are ready to learn. ALEKS can be accessed directly from ConnectED.

Rating

☑ Meets (2)
☐ Partially Meets (1)
☐ Does Not Meet (0)
Alignment Criterion 3
Access to the Standards for All Students

Metric

AC Metric 3C:
Design of lessons recommends and facilitates a mix of instructional approaches for a variety of learners such as using multiple representations (e.g., including models, using a range of questions, checking for understanding, flexible grouping, pair-share).

How to Find the Evidence

Evaluate teacher materials, noting instructional approaches suggested for whole class and differentiated lessons and activities.

Evidence

Throughout Glencoe Math, there are numerous cooperative learning strategies for differentiated, collaborative learning activities that can be used to quickly and easily meet students' individual needs. These activities require little out-of-class preparation to better allow fluid use of grouping variations at a moment's notice. **Over 80 different strategies are presented.** A description of each strategy can be found in ConnectED (www.connected.mcgraw-hill.com) under the Plan & Present Tab in the Program Overview section. These activities may be used as follows:

- Each lesson begins with a suggested whole group, small group, or paired activity under the Ideas for Use section as part of Launch the Lesson in the Teacher Walkaround Edition. In addition, the Alternate Strategy provides more grouping strategies for approaching-level and beyond-level students.

- The Teach the Concept section includes scaffolded questions for each example to differentiate instruction. Continuing through each lesson, there are more differentiated, collaborative learning activities in Guided Practice. Differentiated Homework Options are included for every lesson as well.

In addition, each Inquiry Lab, Problem-Solving Investigation, Mid-Chapter Check, Career, Chapter Opener, and Chapter Review contain cooperative learning strategies at point-of-use for easy implementation.

Rating

- **Meets (2)***
- Partially Meets (1)
- Does Not Meet (0)
Alignment Criterion 3
Access to the Standards for All Students

Alignment Criterion 3: Materials must provide supports for English Language Learners and other special populations.

Points Assigned for Alignment Criterion 3

Materials must earn at least 5 out of 6 points to meet this Alignment Criterion. If materials earn less than 5 points, the Criterion has not been met. Check the final rating.

Then, briefly describe the strengths and weaknesses of these materials in light of the above Criterion.

**Strengths / Weaknesses:**

*Glencoe Math* includes support for English Language Learners and other special populations embedded in every lesson. The materials provide appropriate scaffolding and differentiation for a broad range of learners and include easy-to-implement cooperative learning strategies for use with a variety of grouping strategies.

Move to the Evaluation Summary on the following page to record the final Meets or Does Not Meet rating.
### IMET Evaluation Summary 1 of 2

**Program:**  
**Publisher:** McGraw-Hill Education  
**Date of Publication:** 2015

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#### Non-Negotiable Criteria

Each Non-Negotiable must be met in order for the Non-Negotiable Alignment Criteria to be met overall.

- **Non-Negotiable 1:** Freedom from Obstacles to Focus  
  - Meets  
  - Does Not Meet  

- **Non-Negotiable 2:** Focus and Coherence  
  - Meets  
  - Does Not Meet

---

#### Alignment Criteria

Each Alignment Criterion must be met with a sufficient number of points in order for Alignment Criteria to be labeled as “Meets” overall. The more points the materials receive on the Alignment Criteria, the better they are aligned.

- **Alignment Criterion 1:** Rigor and Balance  
  - Points: ___ of 6 possible.  
  - (Materials must receive at least 5 of 6 points to align.)  
  - Meets  
  - Does Not Meet

- **Alignment Criterion 2:** Standards for Mathematical Practice  
  - Points: ___ of 6 possible.  
  - (Materials must receive at least 5 of 6 points to align.)  
  - Meets  
  - Does Not Meet

- **Alignment Criterion 3:** Access to Standards for All Learners  
  - Points: ___ of 6 possible.  
  - (Materials must receive at least 5 of 6 points to align.)  
  - Meets  
  - Does Not Meet

---

#### Non-Negotiables Overall

- Meets  
- Does Not Meet

#### Alignment Criteria Overall

- Meets  
- Does Not Meet
**IMET Evaluation Summary 2 of 2**

**Program:**  
*Glencoe Math ©2015*

**Publisher:**  
McGraw-Hill Education

**Date of Publication:**  
2015

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**Summary**

If the materials meet both Non-Negotiables and relevant Alignment Criterion, they are aligned to the Shifts and major features of the CCSS.

**Do the materials meet every Non-Negotiable and Alignment Criterion?**

- [x] Yes
- [ ] No

**What are the specific areas of strength and weakness based on this evaluation?**

Publishers or others modifying or developing assessments can use this information to make improvements and/or to remedy gaps in the alignment of assessment materials.
**Indicators of Quality**

Once an evaluation for alignment to the Shifts and major features of the CCSS has been conducted using Sections 1-3, it's important to evaluate for overall quality and best practices. A starting list of Indicators of Quality are suggested below. States, districts and others evaluating instructional materials are encouraged to add to this list to ensure materials reflect local contexts. For background information on some of the Indicators of Quality in this section, refer to pp.18–21 in the Publishers’ Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Evidence</th>
<th>Rating (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lessons are thoughtfully structured and support the teacher in leading the class through the learning paths at hand, with active participation by all students in their own learning and in the learning of their classmates.</td>
<td>See page 39a for evidence.</td>
<td></td>
</tr>
<tr>
<td>2. The underlying design of the materials includes both problems and exercises. (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. NOTE: This Criterion does not require that the problems and exercises be labeled as such.</td>
<td>See page 39b for evidence.</td>
<td></td>
</tr>
<tr>
<td>3. Design of assignments is not haphazard: exercises are given in intentional sequences in order to strengthen students’ mathematical understanding.</td>
<td>See page 39c for evidence.</td>
<td></td>
</tr>
</tbody>
</table>
Page 39a – Evidence for Indicator 1

Lessons and Inquiry Labs are thoughtfully structured to lead students from simple activities to higher-order thinking. In addition, point-of-use instructional guidance is embedded in each lesson to help teachers change the course of instruction at a moment’s notice, easily moving from whole group instruction to small group discussions to partner work. Please refer to Course 1 Chapter 7 Inquiry Lab (pages 521-524) and Lesson 2. (pages 525-532)

The Inquiry Lab begins with simple Hands-On Activities, intended to be used with manipulatives as whole-group activities. The Investigate and Analyze and Reflect sections are intended to be used as small-group investigations. Cooperative learning strategies are given in the Teacher Walkaround Edition to encourage students to share their reasoning with others. Finally, the Create section is designed for students to complete independently, to reflect on the higher-order questions and to reason inductively. For example, Exercise 16 asks students to make a rule to solve an addition equation without using models.

Lessons begin with a Real-World Link that activates prior knowledge and transitions from the models presented in the Inquiry Lab to symbolic reasoning. (Some lessons begin with a Vocabulary Link.) There are ample Examples, beginning with simple skills and extending to contextual problems. Scaffolded questions are provided in the Teacher Walkaround Edition, and Got It? exercises can be used as formative assessment. Guided Practice exercises assess students’ understanding, with differentiation options provided in the Teacher Walkaround Edition, allowing students to work in smaller groups and communicate about their understandings. Watch Out! indicates common errors students may make. Independent Practice and Extra Practice exercises progress from a low level of complexity to a high level of complexity. Please refer to page 39b in this document for a discussion of exercises and problems.
Page 39b – Evidence for Indicator 2

Each Inquiry Lab contains thoughtfully designed problems that are used to introduce and develop new mathematical learning. Some examples follow.

    Course 1, page 493: “How do you know that two expressions are equivalent?”

    Course 2, page 611: “How is the circumference of a circle related to its diameter?”

    Course 3, page 409: “What is the relationship among the sides of a right triangle?”

Each lesson contains an appropriate number of exercises to practice, apply, and build mastery. These exercises include skill problems to build fluency, contextual problems where students apply and extend the skill, and H.O.T. (Higher-Order Thinking) problems that incorporate mathematical practices.

Each problem or exercise in lessons, Inquiry Labs, or Problem-Solving Investigations has a specific purpose and is categorized by a level of complexity, which is identified in the Teacher Walkaround Edition.

Level 1: Recall and Understand
This level involves the basic recall of information, such as a definition or an example, and using a procedure, algorithm, or formula.

Level 2: Apply Concepts
In this level, students demonstrate that they understand concepts. It includes solving real-world problems involving more than one step, comparing and contrasting, interpreting data, making predictions, connecting an algorithm to a model, and determining relationships between problem situations and symbolic notation.

Level 3: Analyze, Evaluate, and Create
This level involves reasoning and justifying. Students make and test conjectures, solve complex problems, including nonroutine problems, draw conclusions from data, and formulate problems given a mathematical situation.

To refer to specific examples, please see page 11a of this document.
Assignments in *Glencoe Math* are given in an intentional sequence. In general, as students work through the problems and exercises in lessons, Inquiry Labs, and Problem-Solving Investigations, they move from a lower level of complexity to a higher level of complexity—from exercises that build skill or fluency to those that engage students in mathematical practices.

Teachers may make assignments in one of three ways:

- Use the **Levels of Complexity** chart in the Teacher Walkaround Edition to assign exercises with a specific level of complexity.

- Use the **Differentiated Homework Options** chart in the Teacher Walkaround Edition to assign exercises of all levels of complexity. For additional information about this option, please see page 11a of this document.

- Use **eSolutions Manual** to make customized assignments.
## Indicators of Quality

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Evidence</th>
<th>Rating (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. 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.</td>
<td>See page 40a for evidence.</td>
<td></td>
</tr>
<tr>
<td>5. Manipulatives suggested in the materials are faithful representations of the mathematical objects they represent and are connected to written methods.</td>
<td>See page 40b for evidence.</td>
<td></td>
</tr>
<tr>
<td>6. Materials include a variety of curriculum-embedded assessments. Examples include pre-, formative, summative, and self-assessment resources.</td>
<td>See page 40c for evidence.</td>
<td></td>
</tr>
<tr>
<td>7. Assessments contain aligned rubrics, answer keys, and scoring guidelines that provide sufficient guidance for interpreting student performance.</td>
<td>See page 40d for evidence.</td>
<td></td>
</tr>
<tr>
<td>8. Materials assess student proficiency using methods that are accessible and unbiased, including the use of grade-level language in student prompts.</td>
<td>See page 40e for evidence.</td>
<td></td>
</tr>
</tbody>
</table>
Page 40a – Evidence for Indicator 4

In *Glencoe Math*, the **Teacher Walkaround Edition contains everything a teacher needs in the classroom**, including the objective of the lesson, how it connects within and across grades, answers to all problems and exercises, scaffolded questions for each example, additional examples, point-of-use differentiation activities, Watch Out! features to identify common student errors, point-of-use formative assessment, assignment options, information about mathematical practices, and a Ticket Out the Door question.

The **Teacher Center of ConnectED** ([www.connected.mcgraw-hill.com](http://www.connected.mcgraw-hill.com)) contains materials needed for in-depth planning. Open the Chapter Overview section of any chapter in the Plan & Present tab to locate pacing suggestions, notes about mathematical background, an outside reading list, directions for making the chapter Foldable, and so on. Open any lesson section to locate additional teaching notes, mathematical background information, differentiated instruction and English Language Learner support. Also note the prepared lesson plans for each lesson and the Interactive Lesson Presentations that can be customized by adding your favorite resources to your lesson.

*Glencoe Math* also provides extensive professional development, both content-specific and best practices. Through **McGraw-Hill's Professional Learning Community**, teachers can share research, instructional ideas, and best practices with other professionals. Please see pages T16-T17 of the Teacher Walkaround edition or go online at ConnectED and open the PD tab for more details.
Page 40b – Evidence for Indicator 5

The manipulatives suggested in *Glencoe Math* are appropriate representations of the mathematical concepts they represent. For example, in Course 2 Chapter 3, students use both counters and number lines to represent integers, but transition to number lines alone in Chapter 4 to represent rational numbers.

Concrete manipulatives, student-generated pictorial representations, and written methods are utilized throughout *Glencoe Math* in purposeful ways, helping students transition from concrete to abstract. Some examples from Inquiry Labs are indicated below:

- **Course 1**, page 672: “Write a formula that relates the area $A$ of a triangle to the lengths of its base $b$ and height $h$."

- **Course 2**, page 202: “Write a rule you can use to find the sum of a positive integer and a negative integer without using counters.

- **Course 3**, page 486: “Based on the Activities and Exercises, write a conjecture about the effects of a dilation on the sides and angles of a triangle.”
Page 40c – Evidence for Indicator 6
McGraw-Hill’s Glencoe Math provides a variety of assessment tools.

Pre-assessments include the Quick Review/Quick Check for each chapter in the Student Edition, as well as a Diagnostic Test and Pre-Test, available online at ConnectED.

Formative Assessments in the Student Edition include Got It? exercises, Guided Practice questions, and a Mid-Chapter Quiz. Power Up! Common Core Test Practice at the end of each lesson mimic the tech-enhanced questions (drag and drop, multiple selected response, and so on) found in Common Core Assessments and may also be used as formative assessment.

Summative Assessments include Power Up! Performance Tasks at the end of each chapter in the Student Edition. These tasks require students to solve rigorous multi-step problems that are similar to the ones found in the CCSS Assessments. Additional Performance Tasks with rubrics are available in Glencoe’s Common Core Performance Tasks ancillary.

Student Self-Assessments include Rate Yourself, following each Guided Practice, Track Your Common Core Progress, and What Do You Already Know? in each Chapter Opener.

Additional assessment options include Power Up for the PARCC Assessments, Think Smart for the Smarter Balanced Assessments, and 21st Century Assessments resources. These contain materials needed to prepare students for the new Common Core Assessments and include 20 countdowns, chapter tests that assess all of the CCSS presented in the chapter, performance tasks and four benchmark tests. All problems on each test mirror the item types found on the new assessments.

Finally, please see eAssessment in ConnectED for more assessment options aligned to the CCSS.
Page 40d – Evidence for Indicator 7

Answer keys and aligned rubrics are available for all assessment items in *Glencoe Math*.

The Teacher Walkaround Edition of *Glencoe Math* contains answers for every question, problem, and assessment item in the Student Edition. **Complete solutions are available in the eSolutions Manual.**

Rubrics for Power Up Common Core Test Practice (at the end of each lesson in the Student Edition) and Power Up Common Core Performance Task (at the end of each chapter in the Student Edition) are available in the Teacher Walkaround Edition. They provide **scoring rubrics, depth of knowledge, content and practice standards**, and describe the online experience. Similar rubrics are available for the performance tasks in the *Common Core Performance Tasks* resource.

*Power Up for the PARCC Assessments, Think Smart for the Smarter Balanced Assessments, and 21st Century Assessments* resources also have aligned rubrics. In addition, **charts for additional question analysis are available** on ConnectED for each question in the countdowns, chapter tests, and benchmark tests. Student scoring rubrics are available online for each chapter and benchmark performance task. These student rubrics include a description of tasks students should perform correctly aligned with the task's maximum number of points. The Student Scoring Rubric can be used as a guide for student expectations, a student self-evaluation tool, as well as a final teacher evaluation tool. **Student work samples are also included, along with suggestions for intervention.**
Problem contexts that are familiar to diverse learners and appropriate grade-level language are used in all instructional components of *Glencoe Math*, including assessments.
## Indicators of Quality

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Evidence</th>
<th>Rating (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Materials are carefully evaluated by qualified individuals,</td>
<td>See page 41a for evidence.</td>
<td></td>
</tr>
<tr>
<td>whose names are listed, in an effort to ensure freedom from mathematical</td>
<td></td>
<td></td>
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<tr>
<td>errors and grade-level appropriateness.</td>
<td></td>
<td></td>
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<tr>
<td>10. The visual design supports students in engaging thoughtfully with the</td>
<td>See page 41b for evidence.</td>
<td></td>
</tr>
<tr>
<td>subject. Navigation through the text is clear.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. The materials engage parents in appropriate ways. For example,</td>
<td>See page 41c for evidence.</td>
<td></td>
</tr>
<tr>
<td>homework assignments in elementary grades, consist of routine problems,</td>
<td></td>
<td></td>
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<tr>
<td>practice with getting answers, and fluency-building exercises that</td>
<td></td>
<td></td>
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<tr>
<td>parents can easily support.</td>
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<td></td>
</tr>
</tbody>
</table>
Page 41a – Evidence for Indicator 9

*Glencoe Math* was reviewed at different stages of its development by a variety of scholars and educators. These reviewers include experts in specific areas of mathematical content and practices (for example, problem solving and Understanding by Design) and experts in working with special populations of learners (for example, differentiated instruction). Additionally, materials were extensively checked by qualified teachers to ensure accuracy.

For a list of external reviewers, please see pages T20-T21 in the Teacher Walkaround Edition.
Page 41b – Evidence for Indicator 10

The interactive nature of *Glencoe Math* supports students in engaging thoughtfully with the subject. **The visual design is aimed at middle school students.** Write-on-lines and graphic organizers indicate places in which students interact with the text, making navigation through the text clear. Space is provided with each exercise to that students can show their work, and the minor column next to examples allow students to take notes directly in the text. Inquiry Labs also provide space for students to draw pictures—connecting concrete and pictorial representations of concepts. With *Glencoe Math*, students get involved with the subject and take ownership of their work.
Page 41c – Evidence for Indicator 11

Glencoe Math’s Student Center, available at www.ConnectED.mcgraw-hill.com, provides information and support for parents.

- **Home Page** When parents view the Home page, they can learn about their student’s current homework and see any messages from the teacher.

- **Homework** This tab contains information about current homework, long-range assignments, and homework history.

- **Resources** This tab contains helpful resources for parents who want to keep abreast of what their students are learning and help their students with their assignments.
  - **Family Letters** for each chapter—in both English and Spanish—include descriptions of mathematical content, vocabulary, and at-home activities.
  - **Personal Tutors** present a teacher explaining a step-by-step solutions for examples from each lesson.
  - **Step-by-Step Solutions (eHelp)** present step-by-step homework help for selected exercises from the Independent Practice section. The exercises are indicated in the Student Edition with a house icon.
  - Other resources include a Spanish Student Edition, Vocabulary Flashcards, a Multilingual Glossary of Terms, virtual manipulatives, access to worksheets, and McGraw-Hill’s *Quick Review Math Handbook*.

- **Collaborate** Parents can see messages from teachers.