HQIM²R²

EVIDENCE GUIDES

K-8 Mathematics

MISSISSIPPI DEPARTMENT OF EDUCATION
Ensuring a bright future for every child

Gateway 1

GUIDANCE FOR Indicator 1a

CRITERION	Materials do not assess topics before the grade-level in which the topic should be introduced.
INDICATOR	The instructional material assesses the grade-level content and, if applicable, content from earlier grades. Content from future grades may be introduced but, students should not be held accountable on assessments for future expectations.

Do assessment questions address grade-level Standards?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator, along with indicator 1b, determines the **shift of Focus**. In order to maintain Focus, materials concentrate on grade-level Standards. Assessments are determined by the publisher and are series specific.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do K-5 assessments include questions addressing the following topics?
  - Probability (including chance, likely outcomes, probability models).
  - 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).
  - Similarity, transformations, and congruence.
- Do materials include many above-grade-level items on assessments that would require major modifications to fix?
- Do materials include above grade-level items whose removal or modification would change the underlying structure or intent of the materials?
- Do materials include above-grade-level items on assessments that do not require major modifications to fix or are mathematically reasonable?

Record all evidence including span of instructional time of associated lessons/activities and record the above-grade-level Standards for ALL of these questions.

Evidence Collection: Locating evidence sources

- Look at all interim, unit, and/or summative assessments.
- Look at scoring rubrics, if available, to determine acceptable responses for the items. If all questions are on grade-level, provide evidence of assessment items that are representative of the instructional materials.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

Verify with the team that the assessment items noted by individual reviewers assess above grade-level Standards.

- Include each above grade-level assessment question.
- For each question, list the above grade-level Standard to which the item aligns and explain why the assessment item is above grade-level.

For each above grade-level assessment item listed, discuss the following questions:

1. Are the above grade-level Standards in the next grade-level or several grades beyond? (Assessing Standards that are one grade-level away from the current one could be mathematically reasonable. More than one grade-level away is probably not mathematically reasonable.) Is the assessment item clearly identified as above grade-level?
2. Would skipping the above grade-level assessment item (and, therefore, the associated lessons and activities) still maintain the integrity of the instructional materials?
3. Is the above grade-level assessment item included at the beginning of the year or at the end of the year?

SCORING

2 points	Topics from probability, statistics, similarity or congruence are NOT assessed in K - 5. **AND** Materials assess grade-level Standards OR include above-grade level assessment items that could be removed or modified without impacting the structure or intent of the materials. **AND** Above-grade level items are mathematically reasonable.
0 points	Topics from probability, statistics, similarity or congruence ARE assessed in K - 5. **OR** Materials include above-grade level assessments items that would require major modifications to fix. **OR** Above-grade level items are not mathematically reasonable.

GUIDANCE FOR Indicator 1b

CRITERION	Students and teachers using the materials as designed devote the large majority of class time in each grade, K – 8, to the Major Work* of the grade.
INDICATOR	The majority of the MS CCRS-M K-8 are incorporated, across a grade-level.

Is at least 65% of instructional time address the Major Work* of the grade?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator, along with indicator 1a, determines the **shift of Focus**. In order to maintain Focus, materials concentrate on grade-level Standards, and a large majority of class time is dedicated to lessons or activities from materials that align to the Major Work of the grade-level being reviewed. (Major Work of the grade refers to those Standards identified in the Critical Areas. While all grade-level Standards are important, an emphasis on Major Work of the grade ensures that meaningful connections are made within and between Standards across the grade-level).

Note: *ALL Standards in MS CCRS-M are accounted for in evidence gathered between indicators 1b, 1c, 1e, and 1f. Indicator 1c addresses the* ***connections*** *within and between domains and Standards for each grade-level. Indicator 1e addresses the* ***progressions*** *of the Standards within and between grade-levels, as well as extensive work with grade-level Standards. Indicator 1f addresses how materials demonstrate* ***coherence*** *between the domains and Standards of grade-level Standards including learning objectives.*

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- When considering units/chapters, what percent focus on addressing the Major Work of the grade?
- When considering lessons/activities, what percent focus on addressing the Major Work of the grade?
- When considering the amount of instructional time in material (including assessments), what percent is spent on the Major Work of the grade?
- When considering the supporting work in material (including assessments), what percent connects and addresses the Major Work of the grade?

Please Note:

- If it is not possible for a reviewer to capture data for each of these perspectives, then the reviewer should provide an explanation as to why a perspective was not feasible. (For example, a set of materials is not divided into units/chapters, so a calculation from that perspective is not possible.)
- If a perspective other than the three that already have been given is a better representation for the materials, then the reviewer should clearly explain why the other perspective is better and include evidence and calculations to accompany the additional perspective.

Evidence Collection: Preparing to Collect Evidence

- Familiarize yourself with the Major Work of the grade being reviewed. (See the EdReports Quality Instructional Materials Tool: Grades K-8 Mathematics).

Evidence Collection: Locating Evidence Sources

- List all units/chapters/lessons/activities and assessments focused primarily on Major Work of the grade and list all units/chapters/lessons/activities and assessments that include connections between supporting and Major Work of the grade.
- Explain evidence that is listed including specific Standards.
- Explain how calculations were performed and include all calculations on the evidence collection worksheet.

Note: Collect evidence for 1b, 1c, 1f simultaneously.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Which perspective is most representative of the instructional materials? Why?
2. How similar are each reviewer's calculations percents?
3. In which lessons does supporting work increase the focus on the Major Work of the grade?
4. Evidence that reflects difficulty in calculating percents for the materials should be moved to Gateway 3.

SCORING

4 points	The materials should devote at least 65%. For those materials on the borderline (e.g., 60% - 64%), evidence should clearly explain how non-Major Work supports the Major Work of the grade and increases the materials' attention to Focus.
0 points	The materials do not devote at least 65% of class time to the Major Work of the grade. For those materials on the borderline (e.g., 60% - 64%), evidence should clearly explain how non-Major Work does not support the Major Work of the grade and does not increase the materials' attention to Focus.

***Standards considered as Major Work by Grade:**

GRADE	MAJOR WORK	SUPPORTING
Kindergarten	K.CC.1, 2, 3, 4, 5, 6, 7 K.OA.1, 2, 3, 4, 5 K.NBT.1	K.MD.1, 2, 3 K.G.1, 2, 3, 4, 5, 6
Grade 1	1.OA.1, 2, 3, 4, 5, 6, 7, 8 1.NBT.1, 2, 3, 4, 5, 6 1.MD.1, 2	1.MD.3a, 3b, 4, 5 1.G.1, 2, 3
Grade 2	2.OA.1, 2 2.NBT.1, 2, 3, 4, 5, 6, 7, 8, 9 2.MD.1, 2, 3, 4, 5, 6	2.OA.3, 4 2.MD.7, 8a, 8b, 9, 10 2.G.1, 2, 3
Grade 3	3.OA.1, 2, 3, 4, 5, 6, 7, 8, 9 3.NF.1, 2, 3 3.MD.1, 2, 5, 6, 7	3.NBT.1, 2, 3 3.MD.3, 4, 8 3.G.1, 2
Grade 4	4.OA.1, 2, 3 4.NBT.1, 2, 3, 4, 5, 6 4.NF.1, 2, 3, 4, 5, 6, 7	4.OA.4, 5 4.MD.1, 2, 3, 4, 5, 6, 7 4.G.1, 2, 3
Grade 5	5.NBT.1, 2, 3, 4, 5, 6, 7 5.NF.1, 2, 3, 4, 5, 6, 7 5.MD.3, 4, 5	5.OA.1, 2, 3 5.MD.1, 2 5.G.1, 2, 3, 4
Grade 6	6.RP.1, 2, 3 6.NS.1, 5, 6, 7, 8, 9 6.EE.1, 2, 3, 4, 5, 6, 7, 8, 9	6.NS.2, 3, 4 6.G.1, 2, 3, 4 6.SP.1, 2, 3, 4, 5
Grade 7	7.RP.1, 2, 3 7.NS.1, 2, 3 7.EE.1, 2, 3, 4	7.G.1, 2, 3, 4, 5, 6 7.SP.1, 2, 3, 4, 5, 6, 7, 8, 9
Grade 8	8.EE.1, 2, 3, 4, 5, 6, 7, 8 8.F.1, 2, 3, 4, 5 8.G.1, 2, 3, 4, 5, 6, 7, 8	8.NS.1, 2 8.G.9 8.SP.1, 2, 3, 4

GUIDANCE FOR Indicator 1c

CRITERION	Each grade's instructional materials are coherent and consistent with the Standards.
INDICATOR	Supporting content enhances focus and coherence simultaneously by engaging students in the Major Work of the grade.

Is supporting content connected to the Major Work of the grade? Is supporting content addressed independently?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator, along with indicators 1d, 1e, and 1f, determines the **shift of Coherence**. In order to maintain coherence, materials should link to the mathematical content across grades and within grades. The chapters and lessons should show how learning is built on previous learning and builds towards future learning. Within the grade-level, Supporting Work is connected to Major Work of the grade.

Note: *ALL Standards in MS CCRS-M are accounted for in evidence gathered between indicators 1b, 1c, 1e, and 1f. Indicator 1b addresses how Major Work of the grade is attended to in the instructional materials. Indicator 1e addresses the progressions of the Standards within and between grade levels, as well as extensive work with grade-level Standards. Indicator 1f addresses how materials demonstrate coherence between the domains of grade-level Standards including learning objectives.*

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- When are supporting Standards connected to the Major Work of the grade? How are they connected?
- When supporting Standards are not connected to the major Standards of the grade, is the separation mathematically reasonable?
- Are there natural connections between supporting and major Standards of the grade that are entirely absent from the materials?

Evidence Collection: Preparing to Collect Evidence

- Familiarize yourself with the Major Work of the grade being reviewed. (See the EdReports Quality Instructional Materials Tool: Grades K-8 Mathematics).

Evidence Collection: Locating Evidence Sources

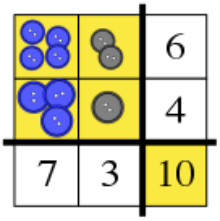
- Review all parts of the instructional materials to see if connections are truly being made. Note when connections are made, when they are present, but the Major Work of the grade is not explicitly mentioned, and when connections are entirely absent from the materials.
- Evidence must include specific examples from the instructional materials; examples should include chapters, lessons, and page numbers. Each piece of evidence must list specific Standards and explain the connections made/missing between supporting and major Standards within the materials.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. What connections between supporting and major Standards of the grade were identified?
2. Where were connections of supporting and major Standards of the grade found?
3. How were the connections made in the instructional materials?

SCORING

2 points	Supporting content is used to enhance the focus on Major Work of the grade, when appropriate.
1 point	Some connections are missed. **AND/OR** Connections are not fully explored.
0 points	Supporting content is treated separately and does not include connections to Major Work of the grade.

KINDERGARTEN	
Big Ideas: **Counting, Cardinality, comparing numbers.**	
K.MD.3 ***K.CC.5** ***K.OA.3** **Using objects to classify and count in different arrangements, and decompose using objects**	K.MD.3 offers a context in which to decompose 10 in more than one way (see K.OA.3). For example, given a collection of 10 buttons, children could classify by color and size to answer (K.CC.5) questions such as "how many small buttons do you have", "how many blue buttons do you have", or "how many large gray buttons do you have?". Such a decomposition of objects can show both that 10 = 7 + 3 and that 10 = 6 + 4. (See figure.) 
***K.CC.5** ***K.CC.6** **K.G.2** **K.G.4** **Name and count attributes of shapes, compare size of groups of objects by counting**	Students can count (see K.CC.5) vertices as a strategy for recognizing shapes in different orientations (see K.G.2) and can use shapes as a setting in which to compare numbers. (see K.CC.6: e.g., count to see which has more vertices, an octagon or a hexagon — see K.G.4)

FIRST GRADE	
Big Ideas: **Addition and subtraction – concepts, skills, and problem solving; place value**	
1.MD.4 ***1.OA** **Using data to practice adding and subtracting**	When students work with organizing, representing and interpreting data, the process includes practicing using numbers and adding and subtracting to answer questions about the data (see the part of 1.MD.4 after the semicolon, and see the K–5 MD Progression document, especially Table 1 on page 4 and the discussion of categorical data on pages 5 and 6).
1.MD.3 ***1.NBT.1** **Telling and writing time to practice reading numbers.**	Telling and writing time on digital clocks (1.MD.3) is a context in which one can practice reading numbers (1.NBT.1), a kind of "application," but no more. Relating those times to meanings — events during a day — is not part of 1.MD.3, but making sense of what one is doing (MP.1) and contextualizing (MP.2) are essential elements of good mathematical practice and should always be part of the instructional foreground.

SECOND GRADE	
Big Ideas: **Addition and subtraction – concepts, skills, and problem solving; place value**	
2.MD.7, 8a, 8b, 9, 10 ***2.NBT.1, 2, 3, 4, 5, 6, 7, 8, 9, 10** **Time and money are used to develop place value understanding.**	When students work with time and money (2.MD.7-8), their work with dollars, dimes, and pennies should support their understanding and skill in place value (2.NBT). Their work with nickels, with telling time to the nearest five minutes on analog clocks, with counting by 5s (2.NBT.2), and with arrays of five rows and/or five columns (2.OA.3-4) should be taken together.
2.MD.10 ***2.O1** **Using data to solve addition and subtraction problems.**	2.MD.10 particularly represents an opportunity to link to the Major Work of grade 2. Picture graphs and bar graphs can add variety as contexts for solving addition and subtraction problems. The language in 2.MD.10 mentions word problems (2.OA) explicitly. See the Progression document for K–5 Measurement and Data for more on the connections between data work and arithmetic in the early grades.
2.MD.9 ***2.MD.1** **Generate measurement data as a way to teach standard unit measurement.**	2.MD.9 is a potential context for 2.MD.1 and gives students a first taste of visual comparison of numerical information (though the fact that this numerical information was derived from length makes the representation more about scaling the information than about visualizing it).

THIRD GRADE	
Big Ideas: **Multiplication and division of whole numbers and fractions.**	
***3.OA.1, 2, 3, 4** **3.MD.3** **Scaled bar graphs; multiplication and division**	Represent and interpret data: Students multiply and divide to solve problems using information presented in scaled bar graphs (3.MD.3). Pictographs and scaled bar graphs are a visually appealing context for one- and two-step word problems.
3.G.2 ***3.NF.1, 2, 3** ***3.MD.5, 6, 7** **3.MD.4** **Measurement, area, and fractions**	Reason with shapes and their attributes: Work toward meeting 3.G.2 should be positioned in support of area measurement and understanding of fractions.

FOURTH GRADE	
Big Ideas: **Multi-digit arithmetic; fraction equivalence; add/sub fractions**	
4.OA.4 ***4.NBT.4, 5, 6** ***4.NF.1, 2** **Factors and multiples; fraction equivalence**	Gain familiarity with factors and multiples: Work in these Standards supports students' work with multi-digit arithmetic as well as their work with fraction equivalence.
4.MD.4 ***4.NF.1, 2, 3, 4** **Add/sub fractions; measurements in fractions of a unit**	Represent and interpret data: The Standards here requires students to use a line plot to display measurements in fractions of a unit and to solve problems involving addition and subtraction of fractions, connecting it directly to the Number and Operations — Fractions clusters.

FIFTH GRADE	
Big Ideas: **Computation with decimals; operations on fractions**	
5.MD.1 ***5.NBT.4, 5, 6** **Convert measurement units; computation with decimals**	Convert like measurement units within a given measurement system: Work in these Standards supports computation with decimals. For example, converting 5 cm to 0.05 m involves computation with decimals to hundredths.
5.MD.4 ***5.NF.1, 2, 3, 4** **Data sets in fractions; operations on fractions**	Represent and interpret data: The Standards here provide an opportunity for solving real-world problems with operations on fractions, connecting directly to both Number and Operations — Fractions clusters.

SIXTH GRADE	
Big Ideas: **Ratio and proportional reasoning, connecting arithmetic to expressions and equations**	
6.NS.4 ***6.EE.3** **Factors and multiples; equivalent expressions**	Identifying greatest common factor and least common multiple. Recognizing common factors will allow students to represent expressions in different forms.
6.G.1, 2, 3, 4 ***6.EE.1, 2, 3, 4** ***6.EE.5, 6, 7, 8** **Surface area and volume; expressions, equations and inequalities**	Writing, reading, evaluating, and transforming variable expressions (6.EE.1-4) and solving equations and inequalities (6.EE.7-8) can be combined with use of the volume formulas V = lwh and V = Bh (6.G.2).

SEVENTH GRADE	
Big Ideas: **Ratio and proportional reasoning, operations with rational numbers**	
7.G.A.1 ***7.RP.1, 2, 3** **Scale drawings, proportional reasoning**	Students use proportional reasoning when they analyze scale drawings.
7.SP.5, 6, 7, 8 ***7.RP.1, 2, 3** **Sampling and probability, proportional reasoning**	Students use proportional reasoning and percentages when they extrapolate from random samples and use probability.

EIGHTH GRADE	
Big Ideas: **Linear equations and functions**	
***8.EE.5, 6** **8.SP.1, 2, 3, 4** **Proportional relationships and linear equations; association in bivariate data**	Students' work with proportional relationships, lines, linear equations, and linear functions can be enhanced by working with scatter plots and linear models of association in bivariate measurement data.

GUIDANCE FOR Indicator 1d

CRITERION	Each grade's instructional materials are coherent and consistent with the Standards.
INDICATOR	The amount of content designated for one grade level is viable for one academic school year in order to foster coherence between grades.

Can the instructional materials reasonably be completed in one academic school year?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator along with indicators 1c, 1e, and 1f, determines the **shift of Coherence**. This indicator examines the materials to determine if the amount of time suggested in the materials is appropriate for one academic school year and if the expectations of the materials are reasonable for both teachers and students to complete in the suggested timeframe.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Can the instructional materials be completed in a school year (approximately 140-190 days of instruction)?
- What is the length of the lesson according to the publisher? (For example, 60 minutes)

Evidence Collection: Locating Evidence Sources

Review the table of contents, any pacing guides, and scope and sequence provided by the publisher.

- Consider the days spent on lessons/activities and assessments.
- Examine the number of days recommended for re-teaching or extensions.
- Note lessons marked as optional or supplementary, but do not include these days in total days required for the material.

- Examine the lessons to see if the timing suggested by the publisher is viable.
- Note if the requirements of the lessons seem reasonable for teachers and students to complete in the suggested amount of time.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Can students master ALL grade-level Standards in the time frame stated?
2. Is there is too much or too little material to cover in one academic school year?
3. Was there any information you learned from the publisher's orientation that was valuable for this indicator? If so, include this information in the report.

SCORING

2 points	The suggested amount of time and expectations for teachers and students of the materials are viable for one academic school year as written and would not require significant modifications. For those materials on the borderline of having too little or too much content (130-139 days or 191-200 days), evidence should clearly explain how students would be able to master ALL the grade-level Standards within one academic school year.
1 point	The suggested amount of time provided by the materials raises some concerns as to whether coverage of the materials and/or the expectations for teachers and students are viable. Some significant modifications would be necessary for materials to be viable for one academic school year.
0 points	The suggested amount of time for the materials is not viable for one academic school year, and/ or the expectations for teachers and students are unreasonable. Significant modifications would be necessary for the materials to be viable for one academic school year.

GUIDANCE FOR Indicator 1e

CRITERION

Each grade's instructional materials are coherent and consistent with the Standards.

INDICATOR

Materials are consistent with the progressions in the Standards.

1e.i. Materials develop according to the grade-by-grade progressions in the Standards. Content from prior or future grades is clearly identified and related to grade-level work.

1e.ii. Materials give all students extensive work with grade-level problems.

1e.iii. Materials relate grade-level concepts explicitly to prior knowledge from earlier grades.

1e: Are the materials consistent with the progressions in the Standards?

- **1ei: Do the materials concentrate on the mathematics of the grade as referenced in the Standards and Progression Documents?**
- **1eii: Are all grade-level Standards present? Do the materials address the full intent of the Standards? Is there above/below grade-level content present? Is it a plausible extension or reinforcement of grade-level Standards? Does it take time away from the work of the grade?**
- **1eiii: Is grade-level content connected to specific Standards from earlier grades?**

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator, along with indicators 1c, 1d, and 1f, determines the **shift of Coherence**. The indicator examines the coherence across grade-levels (vertically).

Note: *ALL Standards in MS CCRS-M are accounted for in evidence gathered between indicators 1b, 1c, and 1f. Indicator 1b addresses how Major Work of the grade is attended to in the instructional materials. Indicator 1c addresses the connections within and between domains and Standards for each grade-level. Indicator 1f addresses how materials demonstrate coherence between the domains and grade-level Standards including learning objectives.*

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Does the design of the materials concentrate on the mathematics of the grade as referenced in the ***Standards and Progression Documents***?
- Are all grade-level Standards present? Do the materials address the full intent of the Standards? Include evidence of missing Standards and/or Standards where the full intent is not met.
- Is there above/below grade-level content present? If so, is it clearly identified as such in the materials? Is it a plausible extension or reinforcement of grade-level Standards? Does it unduly interfere with the Major Work of the grade? Does it take time away from the Major Work of the grade?
- Is grade-level content connected to specific Standards from earlier grades?
- If the materials include activities that have differentiation suggestions, are they engaging all students with GRADE-LEVEL problems? Note: The quality and types of the differentiation provided by the materials is examined in Gateway 3.
- Are connections to prior learning explicit, and do the materials include an explanation for teachers? For example:
    - Evaluating this indicator can include looking at the way the materials extend basic ideas of place value, i.e. across the decimal point, or the role that the properties of operations play when the materials extend arithmetic beyond whole numbers to fractions, variables and expressions.

Evidence Collection: Locating Evidence Sources

- Headings in the Standards can signal key moments where reorganizing and extending previous knowledge is important in order to accommodate new knowledge (e.g., see Standard headings that use the phrase “apply and extend previous understanding”).

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Is grade-level material reaching the full intent of the Standards? If not, how does that impact the progression of the mathematics?
2. What content from other grade-levels are present? Does it enhance or distract from grade-level work?
3. How was indicator 1.e.ii taken into account in the scoring? Be able to justify why the materials do or do not provide extensive work and how it was decided. "Extensive work" requires professional judgment but should consider that the work is sufficient for students to demonstrate the full intent of the grade-level Standard by the end of the grade.
4. Are they spending a good portion of time on all areas of Major Work of the grade? Are there only a few opportunities for grade-level work in one domain, but many opportunities in another domain?

SCORING

Note: 1.e.i, 1.e.ii, and 1.e.iii are scored together as one item.

2 points	Content from prior and future grade-levels is clearly identified and supports the progressions of the grade-level Standards. **AND** Materials meet the full depth of the grade-level Standards. **AND** All students are given extensive work with grade-level problems. **AND** Materials explicitly relate grade-level concepts to prior knowledge from earlier grades.
1 point	Prior or future grade-level content is not clearly identified or does not support the progressions of the grade-level Standards. **OR** Materials do not meet the full depth of the grade-level Standards. **OR** All students are not given extensive work with grade-level problems. **OR** Materials do not explicitly relate grade-level concepts to prior knowledge from earlier grades.

0 points	Prior and future grade-level content is not clearly identified and does not support the progressions of the grade-level Standards. **AND** Materials do not meet the full depth of the grade-level Standards. **AND** All students are not given extensive work with grade-level problems. **AND** Materials do not explicitly relate grade-level concepts to prior knowledge from earlier grades.

GUIDANCE FOR Indicator 1f

CRITERION	Each grade's instructional materials are coherent and consistent with the Standards.
INDICATOR	Materials foster coherence through connections at a single grade, where appropriate and required by the Standards. 1fi. Materials include learning objectives that are visibly shaped by MS CCRS-M. 1fii. Materials include problems and activities that serve to connect two or more headings (clusters) in a domain, or two or more domains in a grade, in cases where these connections are natural and important.

Are Standards connected or are they presented as separate ideas?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator, along with indicators 1c, 1d, and 1e, determines the **shift of Coherence**. This indicator examines coherence within the grade-level (horizontally).

Note: *ALL Standards in MS CCRS-M are accounted for in evidence gathered between indicators 1b, 1c, 1e, and 1f. Indicator 1b addresses how Major Work of the grade is attended to in the instructional materials. Indicator 1c addresses the connections within and between domains and Standards for each grade-level. Indicator 1e addresses the progressions of the Standards within and between grade levels, as well as extensive work with grade-level Standards.*

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Does the mathematics in the materials make connections to Standards?
- Are there natural connections between any domains or Standards? (This indicator is not limited to connections between major and supporting work.)
- If connections are identified, are they natural? Do connections truly support each other, or are the connections superficial?

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Where are lessons and problems shaped by the MS CCRS-M?
2. Where are lessons and problems connected across Standards?
3. Are there natural and mathematically important connections missed? If so, which connections were missed and where?

SCORING

Note: 1.f.i and 1.f.ii are scored together as one item.

2 points	The materials are visibly shaped by the MS CCRS-M. **AND** Lessons and problems connect across domains and Standards.
1 point	Important connections are missed. **OR** The materials are not visibly shaped by the MS CCRS-M. **OR** Lessons and problems do not connect.
0 points	Materials are not shaped by the MS CCRS-M. **AND** Important connections are not made in the materials.

Examples for 1.f.ii: This is not a complete list. Reviewers may find other connections.
***Denotes Major Work of the Grade**

KINDERGARTEN	
Big Ideas: **Counting, Cardinality, comparing numbers.**	
***K.NBT** ***K.CC.5** ***K.CC.3**	In addition to laying the groundwork for place value in grade 1, working with numbers 11–19 (K.NBT) provides opportunities for cardinal counting beyond 10 (see K.CC.5) and for writing two- digit numbers (see K.CC.3).
K.MD.3 ***K.CC.5** ***K.CC.6** ***K.OA.3**	K.MD.3 provides opportunities for cardinal counting (see K.CC.5) and for comparing numbers (see K.CC.6). K.MD.3 also offers a context in which to decompose 10 in more than one way (see K.OA.3).
K.G.2 **K.G.4**	K.G.2 and K.G.4 offer some opportunities for counting and comparing numbers.

FIRST GRADE	
Big Ideas: **Addition and subtraction – concepts, skills, and problem solving; place value**	
	A thorough understanding of how place value language and notation represent number (1.NBT.1) serves calculation (1.NBT.2, 1.NBT.3) in many ways — not just pencil-and-paper calculation, but mental calculation as well. It is valuable for purposes of calculation to know that numbers are named so that “twenty-eight” is 20 + 8 and “forty-one” is 40 + 1. That is, the names are designed to make such calculations easy so that we can base calculations like 28 + 41 on it using properties of the operations (1.OA.4). This kind of flexible mental arithmetic is a sign of mastery and complements fluency with more algorithmic methods.
***1.OA.1,2** ***1.OA.6** ***1.NBT**	The study of word problems in grade 1 (1.OA.1, 1.OA.2) can be coordinated with students’ growing proficiency with addition and subtraction within 20 (1.OA.6) and their growing proficiency with multi-digit addition and subtraction (1.NBT).
***1.OA.1,2** ***1.OA.3,4**	Word problems can also be linked to students’ growing understanding of properties of addition and the relationship between addition and subtraction. For example, put together/take apart problems with addend unknown can show subtraction as finding an unknown addend.

***1.NBT** ***1.MD.1, 2**	Units are a connection between place value (1.NBT) and measurement (1.MD). Working with place value depends on having a sense of the sizes of the base ten units and being able to see a larger unit as composed of smaller units within the system. As measurement develops through the grades, it also depends on having a sense of the sizes of units and being able to see a larger unit as composed of smaller units within the system. Grade 1 is when students first encounter the concept of a tens unit, and it is also when they first encounter the concept of a length unit.
***1.MD.1, 2** ***1.OA.1** ***1.NBT.3**	Measurement Standards 1.MD.1 and 1.MD.2 together support and provide a context for the 1.OA.1 goal of solving subtraction problems that involve comparing. To meet Standard 1.MD.1, students compare the lengths of two objects by means of a third object, e.g., a length of string that allows a "copy" of the length of one immovable object to be moved to another location to compare with the length of another movable object. When students cannot find the exact difference because of the magnitude of the numbers that arise from measurement — as may occur in comparing two students' heights — they may still compare the measurements to know which is greater (1.NBT.3).
1.G.3 **1.MD.3**	While students are dealing with the limited precision of only whole and half-hours, they can distinguish the position of the hour hand and connect this to geometry Standard 1.G.3, partitioning circles into halves and quarters.
1.G.2, 3 ***1.MD.2**	Composing shapes to create a new shape (1.G.2) is the spatial analogue of composing numbers to create new numbers. This is also connected to length measurement (1.MD.2) since students must visualize an object to be measured as being built up out of equal-sized units (see also 1.G.3). Though assembling two congruent right triangles into a rectangle does not use the same facts or reasoning that assembling two 5s into a 10 uses, the idea of looking at how objects in some domain (numbers or shapes) can be combined to make other objects in that domain and looking for new true statements one can make about these combinations is a big idea that is common across mathematics.

SECOND GRADE	
Big Ideas: **Addition and subtraction – concepts, skills, and problem solving; place value**	
***2.MD.6** ***2.MD.4** ***2.OA.1**	Representing whole numbers as lengths (2.MD.6) and comparing measurements (2.MD.4) can build a robust and flexible model for fluent subtraction (2.OA.1). For example, a good way to see the "distance" from 6 to 20 is to see the distance from 6 to 10 joined with the distance from 10 to 20.
2.MD.8 ***2.NBT.1**	Problems involving dollars, dimes and pennies (2.MD.8) should be connected with the place value learning of 100s, 10s and 1s (2.NBT.1). Though the notation is different, a dollar is 100 cents or a "bundle" of 10 dimes, each of which is a "bundle" of 10 pennies. Work with dollars, dimes and pennies (without the notation) can support methods of whole-number addition (e.g., dimes are added to dimes). Addition that is appropriate with whole numbers can be explored in the new notation of money contexts (though fluency with that notation is not a Standard at this grade).

***2.OA.1** ***2.OA.2** ***2.NBT.5,6,7,8,9**	Students' work with addition and subtraction word problems (2.OA.1) can be coordinated with their growing skill in multi-digit addition and subtraction (2.OA.2, 2.NBT.5, 2.NBT.6, 2.NBT.7, 2.NBT.8, 2.NBT.9).
2.MD.8 **2.MD.7** ***2.NBT.2** ***2.OA.4**	Work with nickels (2.MD.8) and with telling time to the nearest five minutes on analog clocks (2.MD.7) should be taken together with counting by 5s (2.NBT.2) as contexts for gaining familiarity with groups of 5 (2.OA.4). Recognizing time by seeing the minute hand at 3 and knowing that is 15 minutes; recognizing three nickels as 15¢; and seeing the 15-ness of a 3-by-5 rectangular array held in any position at all (including with neither base horizontal) will prepare for understanding, in grade 3, what the new operation of multiplication means.
***2.MD.6** ***2.MD.1,2,3,4**	The number line (2.MD.6) connects numbers, lengths and units. The number line increases in prominence across the grades.

THIRD GRADE	
Big Ideas: Multiplication and division of whole numbers and fractions.	
3.G.2 ***3.NF.1,2,3**	Students' work with partitioning shapes (3.G.2) relates to visual fraction models (3.NF).
***3.MD.3** ***3.OA.7**	Scaled picture graphs and scaled bar graphs (3.MD.3) can be a visually appealing context for solving multiplication and division problems.

FOURTH GRADE	
Big Ideas: Multi-digit arithmetic; fraction equivalence; add/sub fractions	
4.MD.1,2 ***4.NF.4** ***4.OA.1**	The work that students do with units of measure (4.MD.1–2) and with multiplication of a fraction by a whole number (4.NF.4) can be connected to the idea of "times as much" in multiplication (4.OA.1).
***4.NF.3** **4.MD.5,7**	Addition of fractions (4.NF.3) and concepts of angle measure (4.MD.5a and 4.MD.7) are connected in that a one-degree measure is a fraction of an entire rotation and that adding angle measures together is adding fractions with a denominator of 360.

FIFTH GRADE	
Big Ideas: Computation with decimals; operations on fractions	
***5.NF.3,4,5,6,7** ***5.NBT.5**	The work that students do in multiplying fractions extends their understanding of the operation of multiplication. For example, to multiply $^{a}/_{b} \times q$ (where q is a whole number or a fraction), students can interpret $^{a}/_{b} \times q$ as meaning a parts of a partition of q into b equal parts (5.NF.4a). This interpretation of the product leads to a product that is less than, equal to or greater than q depending on whether $^{a}/_{b} \bullet 1$, $^{a}/_{b} = 1$ or $^{a}/_{b} \bullet 1$, respectively (5.NF.5).
5.MD.3,4,5 ***5.NF.1,2,3,4,5, 6,7**	Conversions within the metric system represent an important practical application of the place value system. Students' work with these units (5.MD.1) can be connected to their work with place value (5.NBT.1).

SIXTH GRADE	
Big Ideas: **Ratio and proportional reasoning, connecting arithmetic to expressions and equations**	
***6.RP.1,2,3** ***6.EE.9**	Students' work with ratios and proportional relationships (6.RP) can be combined with their work in representing quantitative relationships between dependent and independent variables (6.EE.9).
***6.NS.8** ***6.RP.3a**	Plotting rational numbers in the coordinate plane (6.NS.8) is part of analyzing proportional relationships (6.RP.3a, 7.RP.2) and will become important for studying linear equations (8.EE.8) and graphs of functions (8.F)

SEVENTH GRADE	
Big Ideas: **Ratio and proportional reasoning, operations with rational numbers**	
***7.NS.1,2,3** ***7.EE.3,4**	Students' work with algebraic expressions and equations should include the full range of rational numbers.

EIGHTH GRADE	
Big Ideas: **Linear equations and functions**	
***8.EE.6** ***8.G.1,2,3,4,5**	Work should connect the concept of similarity to work in defining slope.

Gateway 2

GUIDANCE FOR Indicator 2a

CRITERION

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

INDICATOR

Materials develop conceptual understanding of key mathematical concepts, especially where called for in specific content Standards or cluster headings.

Do materials develop conceptual understanding?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator, along with 2b, 2c, and 2d, determines the **shift of Rigor**. Conceptual understanding of key concepts will allow students to be able to access concepts from a number of perspectives in order to see math as more than a set of algorithmic procedures.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the Standard(s) from the grade-level that specifically relate to conceptual understanding (look at it throughout the whole grade-level) and do they develop conceptual understanding?

GRADE	MS CCRS-M
Kindergarten	K.OA.1
Grade 1	1.NBT.B 1.NBT.C
Grade 2	2.NBT.A 2.NBT.B
Grade 3	3.OA.1 3.OA.2

Grade 4	4.NF.A 4.NBT.A 4.NBT.B
Grade 5	5.NF.B 5.NBT.A 5.NBT.B
Grade 6	6.RP.A 6.EE.3
Grade 7	7.NS.A 7.EE.A
Grade 8	8.EE.B 8.F.A 8.G.A

- Is conceptual understanding developed thoroughly where the Standards set explicit expectations for understanding or interpreting?
    - Example: Are place value and properties of operations used to explain how the standard algorithms are developed?
- Do materials feature high-quality conceptual problems and conceptual discussion questions, including brief conceptual problems with low computational difficulty?
    - Example: Find a number greater than 3/5 and less than .75.
    - Example: 11 + 6 = ___ + 2
    - Example: A fraction divided by a fraction is always/sometimes/never less than the original fraction.
- Do materials call for students to use concrete and/or visual representations, as well as verbalization, when developing conceptual understanding?
- Do the materials feature opportunities to identify correspondences across mathematical representations?

Evidence Collection: Locating Evidence Sources

- Evidence must include specific examples from the instructional materials.
- Manipulatives do not necessarily indicate conceptual understanding.
- If evidence includes concrete and/or visual representations, explain how the representations are being used to develop conceptual understanding.

- If evidence is addressing Standards that relate specifically to conceptual understanding, list the specific Standards and explain how the evidence demonstrates conceptual understanding.
- If opportunities to develop conceptual understanding are missed, specifically list the Standards/opportunities that are missed.
- Note whether the instructional materials include a specific section in units/chapters/lessons, etc. that are specifically designed for conceptual understanding. Include Unit, Lesson, Lesson Part and page numbers for reference for all examples.
- Evidence must include examples of how materials develop conceptual understanding AND opportunities for students to independently demonstrate conceptual understanding.

Understanding Mathematics

"These Standards define what students should understand and be able to do in their study of mathematics. Asking a student to understand something means asking a teacher to assess whether the student has understood it. But what does mathematical understanding look like? One hallmark of mathematical understanding is the ability to justify, in a way appropriate to the student's mathematical maturity, why a particular mathematical statement is true or where a mathematical rule comes from. There is a world of difference between a student who can summon a mnemonic device to expand a product such as $(a + b)(x + y)$ and a student who can explain where the mnemonic comes from. The student who can explain the rule understands the mathematics, and may have a better chance to succeed at a less familiar task such as expanding $(a + b + c)(x + y)$. Mathematical understanding and procedural skill are equally important, and both are assessable using mathematical tasks of sufficient richness.

The Standards set grade-specific expectations but do not define the intervention methods or materials necessary to support students who are well below or well above grade-level expectations. It is also beyond the scope of the Standards to define the full range of supports appropriate for English language learners and for students with special needs. At the same time, all students must have the opportunity to learn and meet the same high Standards if they are to access the knowledge and skills necessary for college and/or careers. The Standards should be read as allowing for the widest possible range of students to participate fully from the outset, along with appropriate accommodations to ensure maximum participation of students with special education needs. For example, for students with reading disabilities the use of Braille, screen reader technology, or other assistive devices should be made available. In addition, while writing, these students should have access to a scribe, computer, or speech-to-text technology in their classroom. In a similar vein, speaking and listening should be interpreted broadly to include sign language. No set of grade-specific Standards can fully reflect the great variety in abilities, needs, learning rates, and achievement levels of students in any given classroom. However, the

Standards do provide clear signposts along the way to the goal of College- and Career-Readiness for all students." (Mississippi College and Career Readiness Standards Overview, page 10).

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. What does conceptual understanding look like in the instructional materials?
2. What examples are most representative of the instructional materials?

SCORING

Note: 1.f.i and 1.f.ii are scored together as one item.

2 points	The instructional materials develop conceptual understanding throughout the grade-level. **AND** The instructional materials provide opportunities to independently demonstrate conceptual understanding throughout the grade-level.
1 point	The instructional materials have missed opportunities to develop conceptual understanding. **OR** The instructional materials do not provide students opportunities to independently demonstrate conceptual understanding throughout the grade-level.
0 points	The instructional materials have few or no opportunities to develop conceptual understanding. **AND** The instructional materials do not provide opportunities for students to independently demonstrate conceptual understanding.

GUIDANCE FOR Indicator 2b

CRITERION

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

INDICATOR

Materials give attention throughout the year to individual Standards that set an expectation of procedural skill and fluency.

Do materials develop procedural skill?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator, along with 2a, 2c, and 2d, determines the **shift of Rigor**. Procedural skill and fluency is the call for speed and accuracy in calculations. Students need to practice core skills in order to have access to more complex concepts and procedures.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the Standard(s) from the grade-level that specifically relate to procedural skill and fluency and do they develop procedural skill and/or fluency?

GRADE	MS CCRS-M
Kindergarten	K.OA.5
Grade 1	1.OA.6
Grade 2	2.OA.2 2.NBT.5
Grade 3	3.OA.7 3.NBT.2
Grade 4	4.NBT.4

Grade 5	5.NBT.5
Grade 6	6.NS.2 6.NS.3 6.EE.A
Grade 7	7.NS.A 7.EE.1 7.EE.4a
Grade 8	8.EE.7 8.EE.8b

- Is there attention throughout the academic year to individual Standards that set an expectation of procedural skill and fluency?
- Is there progress toward fluency and procedural skill interwoven with students' developing conceptual understanding of the Properties of Operations?
- Are there purely procedural problems and exercises present that include cases in which opportunistic strategies are valuable, as well as generic cases that require efficient algorithms?
    - Example of problems when opportunistic strategies are valuable: The sum 698 + 240 or the system of equations x + y = 1 and 2x + 2y = 3.
    - Example of problems when generic cases require efficient algorithms: The sum 8767 + 2286 or the system of equations 6y + x = x + 3 and -x = 1 + 2y.
- Do materials in grades K-6 (within the grade-band being reviewed) provide repeated practice toward attainment of fluency? Note: Attainment of procedural fluency is an end of grade expectation.

Evidence Collection: Locating Evidence Sources

- Evidence must include specific examples from the instructional materials.
- If opportunities to develop procedural skill/fluency are missed, specifically list the Standards/opportunities that are missed.
- Note whether the instructional materials include a specific section in units/chapters/lessons, etc. that are specifically designed for procedural skill and fluency. Include Unit, Lesson, Lesson Part and page numbers for reference for all examples.

- Evidence must include examples of how materials develop procedural skill and fluency AND opportunities for students to independently demonstrate procedural skill and fluency.

Fluency/Fluently Defined

"Throughout the 2016 Mississippi College- and Career-Readiness Standards for Mathematics Grades K-5 Standards, the words fluency and fluently will appear in bold, italicized, and underlined font (for example: fluently). With respect to student performance and effective in class instruction, the expectations for mathematical fluency are explained below: Fluency is not meant to come at the expense of understanding, but is an outcome of a progression of learning and sufficient thoughtful practice. It is important to provide the conceptual building blocks that develop understanding in tandem with skill along the way to fluency; the roots of this conceptual understanding often extend one or more grades earlier in the Standards than the grade when fluency is finally expected.

Wherever the word fluently appears in a MS CCR content Standard, the word means quickly and accurately. It is important to understand that this is not explicitly tied to assessment purposes, but means more or less the same as when someone is said to be fluent in a foreign language. To be fluent is to flow: Fluent isn't halting, stumbling, or reversing oneself. A key aspect of fluency in this sense is that it is not something that happens all at once in a single grade but requires attention to student understanding along the way. It is important to ensure that sufficient practice and extra support are provided at each grade to allow all students to meet the Standards that call explicitly for fluency." (Mississippi College and Career Readiness Standards for Mathematics, page 19)

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. What does fluency mean at this grade-level, and do the instructional materials adequately prepare students?
2. How do instructional materials build procedural skill and fluencies over the course of an academic year?

SCORING

2 points	The instructional materials develop fluency throughout the grade-level. **AND** The instructional materials provide opportunities to independently demonstrate procedural skill and fluency throughout the grade-level.
1 point	The instructional materials have missed opportunities to develop procedural skills and fluency throughout the grade-level. **OR** The instructional materials do not provide students opportunities to independently demonstrate procedural skills and fluency throughout the grade-level.
0 points	The instructional materials have few or no opportunities to develop procedural skills and fluency throughout the grade-level. **AND** The instructional materials do not provide opportunities for students to independently demonstrate procedural skills and fluency.

GUIDANCE FOR Indicator 2c

CRITERION	Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application.
INDICATOR	Attention to Application: The materials support the intentional develop of students' ability to utilize mathematical concepts and skills in engaging applications, especially where called for in specific content Standards.

Do students apply mathematical knowledge/skills to real-world contexts?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator, along with 2a, 2b, and 2d, determines the **shift of Rigor**.

To engage in application:

- Students need opportunities to apply mathematical knowledge and/or skills in a real-world context.
- Materials should promote activities that call for the use of mathematics flexibly in a variety of contexts, in both routine and non-routine problems.
- Students are given opportunities to use math to make meaning of and access to content.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are there selected Standard(s) from the grade-level that specifically relate to application addressed in a way that promotes students applying mathematical knowledge and/or skills in a real-world context or do they promote problem solving that calls for using math flexibly in a variety of contexts?

Some examples of Standards that call for application include:

GRADE	MS CCRS-M
Kindergarten	K.OA.2
Grade 1	1.OA.A
Grade 2	2.OA.A
Grade 3	3.OA.3 3.OA.8
Grade 4	4.OA.3 4.NF.3d 4.NF.4c
Grade 5	5.NF.6 5.NF.7c
Grade 6	6.RP.3 6.NS.1 6.EE.7 6.EE.9
Grade 7	7.RP.A 7.NS.3 7.EE.3
Grade 8	8.EE.8c 8.F.B

- In materials where these Standards are identified, evaluate whether students are engaging in application of content and skills as described in the Standards.
- Are there a variety of single- and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade?
- Do the problems attend thoroughly to the content Standards where expectations for multi-step and real-world problems are explicit?
- Does application build slowly across the grade band under review, with simpler applications in the early grades (K-2) and when new content is introduced, to more complex applications in the middle grades that begin to provide opportunities for students to make their own assumptions or simplification in order to apply the mathematics in a given situation?

Evidence Collection: Locating evidence sources

- Evidence must include specific examples from the instructional materials.
- If opportunities for application are missed, specifically list the Standards/opportunities that are missed. Note whether the instructional materials include a specific section in units/chapters/lessons, etc. that are specifically designed for application. Include Unit, Lesson, Lesson Part and page numbers for reference for all examples.
- Evidence must include examples of Standards not included in the table above.
- Evidence must include examples of students having opportunities to engage in application problems AND examples of students independently demonstrating the use of mathematics flexibly in a variety of contexts.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Where and what are the non-routine problems? If problems are routine, include examples.
2. How do the materials encourage students to apply mathematics to contextual situations?
3. Explain the strategy/reasoning used as you collected evidence for this indicator.
4. Share any generalizations that you noted as you looked at materials over the course of a grade-level, with specific examples (page numbers noted) to support the generalizations.
5. Identify Standards targeted during evidence collection.

SCORING

2 points	The instructional materials include multiple opportunities for students to engage in routine and non-routine application of mathematics throughout the grade-level. **AND** The instructional materials provide opportunities to independently demonstrate the use of mathematics flexibly in a variety of contexts.

1 point	The instructional materials have missed opportunities to engage in non-routine application of mathematics throughout the grade-level. **OR** There is little variety in situational contexts/problem types when students are presented with word problems. **OR** The instructional materials do not provide opportunities to independently demonstrate the use of mathematics flexibly in a variety of contexts.
0 points	The instructional materials have no or few opportunities to engage in application of mathematics throughout the grade-level. **AND** The instructional materials do not provide opportunities to independently demonstrate the use of mathematics flexibly in a variety of contexts.

GUIDANCE FOR Indicator 2d

CRITERION	Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application.
INDICATOR	The three aspects of rigor are not always treated together and are not always treated separately. The three aspects are balanced with respect to the Standards being addressed.

Do materials balance the three aspects of rigor?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator, along with 2a, 2b, and 2c, determines the **shift of Rigor.** In order to be considered a rigorous program, materials must include a balance of conceptual understanding, procedural skill and fluency, and application. This balance should be evident in all aspects of the grade-level program to support students as they develop mathematical understanding.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the materials have a balance of all 3 aspects of rigor, considering the program materials as a whole and as individual units of study?
- Are the content/topics being introduced to students for the first time, or is it an extension of previous learning?
- Do materials use conceptual understanding to develop procedural skill and fluency, or are students encouraged to use multiple representations (i.e. manipulatives, drawings, expressions, equations, tables, graphs, charts, number lines, etc.) and written/oral explanations to support their work in application problems?
- What lessons/topics include more than one aspect of rigor?

Evidence Collection: Preparing to Collect Evidence

- For this indicator, consider the intent of the program to balance the three aspects of rigor, not the quality of the materials—indicators 2a-c focus on the quality of materials.

Evidence Collection: Locating Evidence Sources

- Evidence must include explicit examples of where *more than one* aspect of rigor is present (can be two or three aspects, but does not have to include all three) ***and*** where only *one aspec*t of rigor is present.
- Look for lessons that call out specific components of rigor, and lessons that focus on individual aspects of rigor. Note: Evidence should be different from the evidence collected for 2a, 2b, and 2c.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. How did I determine "balance"?
2. What are places in grade-level materials where specific aspects of rigor are called for?
3. Share any generalizations noted in materials over the course of a grade-level, with specific examples (page numbers noted) to support the generalizations.
4. Are there aspects of Rigor absent from the materials?
5. Is the quality of an aspect of Rigor different from the other aspects? If yes, make sure this was captured in indicators 2a, 2b, and/or 2c. Remember that this indicator focuses on balance.

SCORING

Note: Indicator 2d is not focused on the qualitative aspects of conceptual understanding (2a), procedural fluency and skills (2b), and application (2c). In Indicator 2d we are looking for evidence of the balance among these three aspects of rigor.

2 points	All three aspects of rigor are present independently throughout the program materials. **AND** Multiple aspects of rigor are engaged simultaneously to develop students' mathematical understanding of a single topic/unit of study throughout the materials.
1 point	All three aspects of rigor are present in program materials, but there is some over/under-emphasis of 1 of the 3.
0 points	No/minimal evidence is present of one of the three aspects of rigor in program materials. **AND** Program materials have an overwhelming emphasis on one aspect of rigor, with little attention paid to the other aspects.

GUIDANCE FOR Indicator 2e

CRITERION	Materials meaningfully connect the Standards for Mathematical Content and the Standards for Mathematical Practice.
INDICATOR	The Standards for Mathematical Practice are identified and used to enrich mathematics content within and throughout each applicable grade.

Are the Standards for Mathematical Practice identified? Do the Standards for Mathematical Practice enrich the content?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator determines two things related to the Standards for Mathematical Practice (MPs). First, it examines if the MPs have been identified in the curricular materials. Second, it examines whether the MPs have been used to enrich the mathematics content of the grade-level.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do teacher's manuals clearly identify the MPs throughout the grade?
- Where in the materials are the MPs identified?
- How do the materials identify and describe MPs (beyond the meaning of MPs as stated in the MS CCRS-M)?
- Are there any instances where MPs are over- or under-identified in the curricular materials (e.g. a lesson is marked as aligned to a Standard when only a small part address that, or vice versa)?
- Are teachers provided directions on how to carry out the lessons to ensure students are developing the MPs?
- Do the materials use MPs to enrich the mathematical content of the grade?

- Are materials focused only on the Standards for Mathematical Practice? If so, specifically state where and how the materials solely address the Standards for Mathematical Practice.

Evidence Collection: Locating Evidence Sources

- If you found that MPs are only located in a specific part of the teacher's manuals (e.g. the teacher-led portion of the lesson), you will need to look at other sections (e.g. independent work, homework, assessments) to ensure that the MPs are intentionally used to enrich the content.
- Look not only where the MPs are identified in the materials text, but also look at places where they are not identified.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Verify with the team the manner in which the MPs are identified throughout the materials, and that all MPs are present.
2. Discuss any other places where the MPs might be used to enrich the content but are not clearly identified.
3. Verify that the MPs, when used by the students, enrich the mathematical content in an authentic way.

This indicator examines whether the MPs are included in the instructional materials. This indicator does not examine how well the Mathematical Practices are used to enrich the content, which is assessed in indicators 2f and 2gi, 2gii, and 2giii.

SCORING

2 points	All 8 MPs are clearly identified throughout the materials, with few or no exceptions. **AND** The majority of the time the MPs are used to enrich the content. **AND** The MPs are not treated separately from the Standards of mathematical content.

1 point	MPs are connected to content but are not identified. **AND/OR** There are a few instances where the MPs do not enrich the content. **AND/OR** There are few instances where the MPs are treated separately from the Standards of mathematical content.
0 points	MPs are not identified. **AND** MPs are not used to enrich the content. **AND** MPs are treated separately from the Standards of mathematical content.

GUIDANCE FOR Indicator 2f

CRITERION	Materials meaningfully connect the Standards for Mathematical Content and the Standards for Mathematical Practice.
INDICATOR	The materials carefully attend to the full meaning of each Mathematical Practice.

Is the full intent of the Standards for Mathematical Practice present?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator determines if the materials treat each Standard for Mathematical Practice (MPs) in a complete, accurate, meaningful way. This indicator requires that MPs are not just treated superficially or focusing only on a part of the MP.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are there any overarching ways in which the MP are discussed in places like unit overviews or introductions?
- Are there specific instances (e.g. teacher script, explanatory notes, student materials) where the MPs are identified and described?
- Are there places where the MPs are being used even if they are not explicitly identified?
- Is the full intent of the MP attended to? (It is not unusual to have materials build toward the full intent. Look beyond the first few chapters/lessons). Some specific things to search for when the following MPs are marked:
    - MP.1: Ensure that students are actually making sense of problems and persevere in solving them. For example, a worksheet of routine word problems assigned for homework that have the same form as ones done in class is not an example of meeting MP.1.

- MP.2: Ensure that students have opportunities to reason both abstractly and quantitatively in a grade-appropriate manner. A place in the materials where MP.2 is marked does not require both abstract and quantitative reasoning, but there should be evidence that the materials as a whole require both.
- MP.3: Ensure that students are both constructing viable arguments and critiquing the (plausible) reasoning of others. A place where MP.3 is marked does not have to do both things, but there should be evidence that the materials as a whole require both.
- MP.4: Ensure that students are modeling a real-world context using mathematics. Modeling with mathematics focuses on students using mathematics in real-world situations, identifying quantities in a given situation, mapping relationships between quantities, analyzing relationships mathematically to draw conclusions, and interpreting the mathematics within the context of the situation. Modeling occurs when students realize the relevant mathematics present in the real-world situation, and then use mathematics to solve a real-world problem.
- MP.5: Ensure that students are not simply using tools that are chosen by the text or the teacher. Lessons specifically addressing learning to use certain tools are appropriate, especially at the younger grades. However, if MP.5 is marked for these kinds of lessons, then the full meaning of the MP is not attended to. If the students aren't given the opportunity to choose tools, the full meaning is not attended to for this MP.
- MP.6: Ensure that students are given opportunity to use mathematical symbols, language, and definitions accurately, and that materials always use precision. For example, the equal sign is exclusively used for statements of mathematical equality.
- MP.7: Students are given explicit instruction on how to look for and make use of structure, and non-explicit opportunities that call for recognition of mathematical structure.
- MP.8: Ensure that each word of the Standard is present in the mathematical work: "regularity," "repeated," and "reasoning."

Evidence Collection: Locating Evidence Sources

- Record examples of where the material is either fully attending or failing to attend to the full meaning of each MP.

- Every instance of an MP being marked does not necessarily have to encompass the full meaning of an MP, but taken together there should be evidence that the materials carefully attend to the full meaning of each MP.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Do examples illustrate where materials are attending to the full meaning of each MP? What examples are most representative of the instructional materials?
2. Do examples illustrate where materials are failing to attend to the full meaning of each MP? What examples are most representative of the instructional materials?

SCORING

2 points	Materials attend to the full meaning of each of the 8 MPs.
1 point	The materials do not attend to the full meaning of one or two MPs.
0 points	The materials do not attend to the full meaning of three or more MPs.

GUIDANCE FOR Indicator 2gi

CRITERION	Materials meaningfully connect the Standards for Mathematical Content and the Standards for Mathematical Practice.
INDICATOR	Materials prompt students to construct viable arguments and critique the reasoning of others concerning key grade-level mathematics detailed in the content Standards.

Do students have opportunities to construct viable arguments and critique the reasoning of others?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator is part of reviewing the materials' emphasis on mathematical reasoning, specifically how the materials prompt students to reason by constructing viable arguments and critiquing the reasoning of others. The materials should have a balance of prompting students to construct viable arguments and prompting students to critique the reasoning of others. Students should be prompted to reason while engaging with math content.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do student materials include questions or problems where students are asked to justify a claim with mathematics, make conjectures and build a logical progression of statements to explore the truth of their conjectures, analyze situations by breaking them into cases, and recognizing counterexamples?
- Do materials include questions or problems where students justify their conclusions, communicate them to others, and respond to the arguments of others?
- Do materials include questions where students reason inductively about data, making plausible arguments that take into account the context from which the data arose?

- Do student materials include questions or problems where they are asked to evaluate someone else's explanation, work, or thinking?
- The materials might show the work of another "student" and ask the students to decide where the error in the thinking occurred. Explain why the error occurred, and what the "student" should have done differently.
- The materials might present two solutions and/or conflicting arguments and ask students to determine whether they are both correct or one is correct and why.

Evidence Collection: Locating Evidence Sources

- Look at the specific questions students are asked in the student pages and items students are given on assessments, practice pages, and homework.
- Make sure there is evidence of both asking students to explain/justify their reasoning and asking students to critique the reasoning of others. Critique the reasoning of others should include more than just deciding right or wrong.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Do examples illustrate where materials are attending to the full meaning of MP3? What examples are most representative of the instructional materials?
2. Do examples illustrate where materials are failing to attend to the full meaning of MP3? What examples are most representative of the instructional materials?

SCORING

2 points	Student materials consistently prompt students to both construct viable arguments and critique the reasoning of others.
1 point	There are missed opportunities where the materials could prompt students to both construct viable arguments and/or critique the reasoning of others.
0 points	Materials have few, if any prompts for students to both construct viable arguments and/or critique the reasoning of others.

GUIDANCE FOR Indicator 2gii

CRITERION	Materials meaningfully connect the Standards for Mathematical Content and the Standards for Mathematical Practice.
INDICATOR	Materials assist teachers in engaging students in constructing viable arguments and critiquing the reasoning of others concerning key grade-level mathematics detailed in the content Standards.

Do materials encourage and guide teachers towards engaging students in constructing viable arguments and critiquing the reasoning of others?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator is part of reviewing the materials' emphasis on mathematical reasoning, specifically how the materials assist the teacher in engaging students in constructing viable arguments and critiquing the reasoning of others. The materials have a balance of assisting the teacher in engaging students in constructing viable arguments and assisting the teacher in critiquing the reasoning of others. Materials should assist teachers in engaging students in reasoning as they master the math content.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are there directions for the teacher in the teacher guide, and lesson and unit overviews to assist students in constructing viable arguments and critiquing the reasoning of others?

Evidence Collection: Locating Evidence Sources

- Look at the directions to the teacher in lessons for:
  - prompts,
  - sample questions to ask,
  - guidance on leading student discussions, and
  - problems to pose to students.

- Look for teacher prompts and suggested questions:
  - The materials might guide teachers to ask students to explain their thinking or justify their solutions.
  - The materials might prompt teachers to have students look at a solution and decide if it is correct or incorrect, and to explain why.
- Look for directions to the teacher that suggest asking students to analyze and evaluate the thinking and solutions of others and/or to justify the mathematics of the solution and/or make an argument with a claim and mathematics to support their reasoning.
- Record specific examples and evidence of where in the teacher resources and how the materials assist teachers in engaging students in constructing viable arguments and critiquing the arguments of others.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Do examples illustrate where materials are assisting teachers in engaging students in MP3? What examples are most representative of the instructional materials?
2. Do examples illustrate where materials are failing to assist teachers in engaging students in MP3? What examples are most representative of the instructional materials?

SCORING

2 points	Teacher resources assist teachers in engaging students in both constructing viable arguments and critiquing the reasoning of others, frequently throughout the materials.
1 point	There are some missed opportunities where the materials could assist teachers in engaging students in both constructing viable arguments and critiquing the reasoning of others.
0 points	Materials provide little or no assistance to teachers in engaging students in both constructing viable arguments and critiquing the reasoning of others.

GUIDANCE FOR Indicator 2giii

CRITERION Materials meaningfully connect the Standards for Mathematical Content and the Standards for Mathematical Practice.

INDICATOR Materials explicitly attend to the specialized language of mathematics.

Do the materials attend to the specialized language of Mathematics?

WHAT IS THE PURPOSE OF THIS INDICATOR?

This indicator determines whether students are supported in using and understanding the specialized language of mathematics. This includes accurate definitions as well as the accurate use of numbers, symbols, and words to conduct mathematics, communicate mathematical thinking, and construct mathematical arguments.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do materials use accurate mathematical vocabulary?
- Do the materials accurately use numbers, symbols, graphs, and tables?
- Are students encouraged throughout the materials to use accurate mathematical terminology?
- Once definitions have been introduced, does the material regularly use the vocabulary?
- Do students have opportunities to receive feedback on how they use words, graphics, and symbols to make arguments and solve problems?
- Ensure that mathematical definitions and terminology are precise and accurate, and not watered-down (e.g. “commutative property” versus “flip-flop”; using rate/ratio/fraction/proportion precisely; using accurate geometric terminology, even at young ages).

- Provide specific examples of vocabulary, symbols, numbers, etc. that are not used accurately and precisely.

DISCUSSION POINTS FOR REVIEW TEAM MEETING

1. Examples of mathematical terminology reflect the instructional materials.
2. The progression of student language is supported; students are given reasonable supports and time to acquire and use new terminology (materials for teachers, including teacher scripts, always use precise terminology).

SCORING

2 points	The materials provide explicit instruction in how to communicate mathematical thinking using words, diagrams, and symbols. **AND** The materials use precise and accurate terminology and definitions when describing mathematics, and support students in using them.
1 point	There is little to no instruction on how to use the language of mathematics. **OR** There are instances where materials do not use precise and accurate mathematical language.
0 points	There is little to no instruction on how to use the language of mathematics. **AND** There are instances where materials do not use precise and accurate mathematical language.

If materials meet minimum criteria for Gateways 1 and 2, then reviewers can proceed to Indicator 3a-3ah.

Gateway 3

- Indicators 3a-3e: Use and Design Facilitate Student Learning
- Indicators 3f-3l: Teacher Planning and Learning for Success with MS CCR
- Indicators 3m-3q: Assessment
- Indicators 3r-3y: Differentiated Instruction
- Indicators 3z-3ad: Effective Technology Use
- Indicators 3e-3ah: Supplemental Materials

GUIDANCE FOR Indicator 3a

Use and Design Facilitate Learning

CRITERION	Materials are well designed and take into account effective lesson structure and pacing.
INDICATOR	The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- How do the materials distinguish between problems and exercises? Note the terminology.
- Do the practice pages allow students to utilize the new mathematics in order to further develop their knowledge of the content?
- Do problems and exercises have a purpose toward developing the new content of the lesson?
- Are there any instances of new mathematics in the “exercises” that was not part of the “problems”?

SCORING

2 points	Materials distinguish between problems and exercises within each lesson. **AND** All, or most, problems or exercises have a purpose.

1 point	Distinguishing between problems and exercises within lessons is confusing or difficult. **OR** There are some instances of problems or exercises not serving a purpose within lessons.
0 points	It is not possible to distinguish between problems and exercises within lessons. **AND/OR** Many instances exist of problems or exercises not serving a purpose within lessons.

GUIDANCE FOR Indicator 3b

Use and Design Facilitate Learning

CRITERION	Materials are well designed and take into account effective lesson structure and pacing.
INDICATOR	Design of assignments is not haphazard: tasks are given in intentional sequences.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Is there a natural progression within student assignments leading to full understanding and mastery of new mathematics? Note any instances of unnatural sequencing within student assignments.
- Are tasks presented in an intentional sequence?
- Are there any instances where the sequencing of assignments is haphazard in development, (i.e. abstract before concrete, unnatural flow of material, etc.)?

SCORING

2 points	Exercises within student assignments are intentionally sequenced to build understanding and knowledge.
1 point	There are some exercises within the student assignments that are not intentionally sequenced to build understanding and knowledge.
0 points	There are many exercises within the student assignments that are not intentionally sequenced to build understanding and knowledge.

GUIDANCE FOR Indicator 3c

Use and Design Facilitate Learning

CRITERION	Materials are well designed and take into account effective lesson structure and pacing.
INDICATOR	There is variety in how students are asked to present the mathematics. For example, students are asked to produce answers and solutions, but also, arguments and explanations, diagrams, mathematical models, etc.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are students asked to produce many types of answers throughout the materials, including, but not limited to: produce models, practice fluency, create arguments, justify their answers, attend to mathematical practices, and make real-world connections?

SCORING

2 points	There is a variety in how students present the mathematics.
1 point	There is some variety in how students present the mathematics.
0 points	There is little to no variety in how students present the mathematics.

GUIDANCE FOR Indicator 3d

Use and Design Facilitate Learning

CRITERION

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

INDICATOR

Manipulatives, both virtual and physical, are faithful representations of the mathematical objects they represent, and when appropriate, are connected to written methods.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are the manipulatives consistent representations of the mathematical objects?
- Are the manipulatives connected to written methods, when appropriate?

SCORING

2 points	Manipulatives are faithful representations of the mathematical objects. **AND** Manipulatives are connected to written methods, when appropriate.
1 point	Manipulatives are not consistently faithful representations of the mathematical objects. **OR** Manipulatives are not consistently connected to written methods, when appropriate.
0 points	Manipulatives do not accurately represent the mathematical objects. **AND/OR** Manipulatives are not connected to written methods.

GUIDANCE FOR Indicator 3e

Use and Design Facilitate Learning

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

INDICATOR The visual design (whether in print or digital) is not distracting or chaotic, but supports students in engaging thoughtfully with the subject.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the materials maintain a consistent layout for each lesson?
- Are the pictures and models supportive of student learning and engagement without being visually distracting?

SCORING

No score is given for indicator 3e (visual design). Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3ei

Use and Design Facilitate Learning

CRITERION	Materials are well designed and take into account effective lesson structure and pacing.
INDICATOR	The materials incorporate a glossary, footnotes, recording, pictures, and/or other features that aid students and teachers in using the book effectively.

Do the materials attend to the specialized language of Mathematics?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Is there a glossary? How is it accessed?
- What additional features are available to help students and teachers use these materials?

Note: The usability of materials is included in Gateway 3 and provides evidence on Teacher Planning for Success with Mississippi College and Career Readiness Standards; Assessment; Differentiation, Scaffolding and Support for all Learners; and Effective Use of Technology.

SCORING

No score is given for indicator 3ei. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3f

Teacher Planning and Learning for Success with MS CCR

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials support teachers in planning and providing effective learning experiences by providing quality questions to help guide students' mathematical development.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are the questions that are provided based on mathematics and require students to use mathematics when responding?
- Are there any overview sections and/or annotations that contain questions to help teachers' guide students' mathematical development?
- Are questions provided for teachers clearly identified in the materials?
- Are the questions provided to teachers designed to elicit students' mathematical understanding?
- Do the questions provided support teachers in planning learning experiences that focus on mathematical understanding?

SCORING

2 points	Questions are consistently provided to teachers to help guide students' mathematical development.
1 point	Questions are occasionally provided to teachers to help guide students' mathematical development.
0 points	Questions are never, or rarely, provided to teachers to help guide students' mathematical development.

GUIDANCE FOR Indicator 3g

Teacher Planning and Learning for Success with MS CCR

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials contain a teacher's edition with: • ample and useful annotations. • suggestions on how to present the content in the student edition and in the ancillary documents. • where applicable, materials include teacher guidance for the use of embedded technology to support and enhance student learning.

Are there overview sections and/or annotations that contain narrative information about the math content and/or ancillary documents that will assist the teacher in presenting the student material?

Are there embedded technology links that will enhance the learning for all students?

If technology support is embedded, is it overarching and accessible?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Is the guidance provided by the teachers' materials useful for presenting the content in the student edition and ancillary documents?
- Are there overview sections and/or annotations about the math content and/or ancillary documents that will assist the teacher in presenting the content in the student material?
- If technology is embedded, is there guidance for the teacher on the use of the technology to support and enhance student learning?

SCORING

2 points	Materials contain ample annotations/suggestions on how to present the content in the student edition and ancillary documents. **AND** Annotations/suggestions provided for teachers are useful to present the content in the student edition and ancillary documents.
1 point	Materials contain ample annotations/suggestions on how to present the content in the student edition and ancillary documents. **OR** Annotations/suggestions provided for teachers are useful to present the content in the student edition and ancillary documents.
0 points	Materials do not contain ample annotations/suggestions on how to present the content in the student edition and ancillary documents. **AND** Annotations/suggestions provided for teachers are not useful to present the content in the student edition and ancillary documents.

GUIDANCE FOR Indicator 3h

Teacher Planning and Learning for Success with MS CCR

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials contain a teacher's edition that contains full, adult-level explanations and examples of the more advanced mathematics concepts and the mathematical practices so that teachers can improve their own knowledge of the subject, as necessary.

Do the materials include annotations on how to present the information in the student editions to assist in full understanding of the Standards and other supports that will assist a teacher in developing their own understanding allowing for seamless transitions of that knowledge to student learning?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the materials include explanations and examples of the course level mathematics for the teacher that are not designed to be used with students?
- Do the materials include explanations and examples that build the teacher's understanding of the mathematics?
- Do the materials include explanations and examples of mathematical concepts appropriate for teachers that extend beyond the current course?

SCORING

2 points	The materials include explanations and examples of the course level mathematics specifically for teachers that can improve their own knowledge of the subject. **AND** The materials include explanations and examples appropriate for teachers of advanced mathematics concepts that extend beyond the current course that can improve their own knowledge of the subject.
1 point	The materials include some explanations and examples of the course level mathematics specifically for teachers that can improve their own knowledge of the subject. **AND/OR** The materials include some explanations and examples appropriate for teachers of advanced mathematics concepts that extend beyond the current course that can improve their own knowledge of the subject.
0 points	The materials do not include explanations and examples of the course level mathematics specifically for teachers that can improve their own knowledge of the subject. **AND** The materials do not include explanations and examples appropriate for teachers of advanced mathematics concepts that extend beyond the current course that can improve their own knowledge of the subject.

GUIDANCE FOR Indicator 3i

Teacher Planning and Learning for Success with MS CCR

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials contain a teacher's edition that explains the role of the specific grade-level mathematics Standards in the context of the overall mathematics curriculum for Kindergarten through High School.

Are there chapter or lesson overviews that explain the progression of the content and how this specific course connects to previous and upcoming courses?

Is there information given to allow for coherence, not just a single course above or below, but there are multiple course levels, if applicable, to allow a teacher to make prior connections and teach for connections to future content?

NOTE: This indicator is similar to indicator 1e. In indicator 1e, the materials are examined for specific evidence of how the content from prior and future grades is connected to grade-level content. In this indicator, the materials are examined for support provided to teachers in explaining the role of grade-level content across the mathematics continuum.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the instructional materials provide information that explains the progression of the content within the grade-level, and connections to prior and future grade-levels?
- Is it clear to the teacher how the specific mathematics Standards connect to other Standards within the series or grade-level?

SCORING

2 points	The materials explain the role of the specific mathematics Standards in the context of the overall series or grade-level.
1 point	The materials provide information on the role of specific mathematics Standards in the context of the overall series or grade-level, but the explanations are general and do not assist teachers in understanding the role of the specific course-level mathematics in the context of the series or grade-level.
0 points	The materials rarely or do not explain the role of the specific mathematics Standards in the context of the overall series or grade-level.

GUIDANCE FOR Indicator 3j

Teacher Planning and Learning for Success with MS CCR

CRITERION

Materials support teacher learning and understanding of the Standards.

INDICATOR

Materials provide a list of lessons in the teacher's edition, cross-referencing the Standards addressed and providing an estimated instructional time for each lesson, chapter and unit (i.e., pacing guide).

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Is there clear documentation that aligns Standards to lessons/chapters/units?
- Is there clear documentation that provides estimated instructional time for lessons/chapters/units?

SCORING

No score is given for indicator 3j. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3k

Teacher Planning and Learning for Success with MS CCR

CRITERION

Materials support teacher learning and understanding of the Standards.

INDICATOR

Materials contain strategies for informing students, parents, or caregivers about the mathematics program and suggestions for how they can help support student progress and achievement.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the materials provide strategies for informing students, parents, or caregivers about the mathematics program?
- Do the materials provide suggestions for how parents or caregivers can help support student progress and achievement?

SCORING

No score is given for indicator 3k. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3l

Teacher Planning and Learning for Success with MS CCR

CRITERION Materials support teacher learning and understanding of the Standards.

INDICATOR Materials contain explanations of the instructional approaches of the program and identification of the research-based strategies.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the materials include research-based strategies? Are these strategies identified?
- Do the materials contain explanations of the instructional approaches for the program?

SCORING

No score is given for indicator 3l. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3m

Assessments

CRITERION	Materials support teacher learning and understanding of the Standards.

INDICATOR	Materials provide strategies for gathering information about students' prior knowledge within and across grade levels/courses.

Do materials provide strategies to gather information on students' prior knowledge?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the materials provide strategies for gathering information about students' prior knowledge within grade levels/courses?
- Do the materials provide strategies for gathering information about students' prior knowledge across grade levels/courses?
- What are the ways in which the materials assess prior knowledge?

SCORING

2 points	The materials provide strategies for gathering information about students' prior knowledge within grade levels/courses. **AND** The materials provide strategies for gathering information about students' prior knowledge across grade levels/courses.
1 point	The materials provide strategies for gathering information about students' prior knowledge within grade levels/courses. **OR** The materials provide strategies for gathering information about students' prior knowledge across grade levels/courses.

0 points	The materials do not provide strategies for gathering information about students' prior knowledge within grade levels/courses. **AND** The materials do not provide strategies for gathering information about students' prior knowledge across grade levels/courses.

GUIDANCE FOR Indicator 3n

Assessments

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials provide support for teachers to identify and address common student errors and misconceptions.

Do materials help teachers identify and address common student errors and misconceptions?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do materials highlight common student errors and/or misconceptions? How?
- Do materials provide strategies for addressing student errors and/or misconceptions? How?
- Are the strategies for addressing students' errors and misconceptions mathematically sound (e.g. does not rely on "tricks")?
- Do materials provide opportunities for teachers to have mathematical conversations to address student errors and misconceptions?

SCORING

2 points	Materials highlight common student errors and/or misconceptions for teachers. **AND** Materials provide strategies to teachers that are mathematically sound for addressing common student errors and/or misconceptions.

1 point	Materials highlight some common student errors and/or misconceptions for teachers. **AND/OR** Materials provide some strategies to teachers that are mathematically sound for addressing common student errors and/or misconceptions.
0 points	Materials do not highlight common student errors and/or misconceptions for teachers. **AND** Materials provide strategies to teachers that are not mathematically sound for addressing common student errors and/or misconceptions.

GUIDANCE FOR Indicator 3o

Assessments

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials provide support for ongoing review and practice, with feedback, for students in learning both concepts and skills.

Do materials provide feedback to students on both concepts and skills?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the materials provide ongoing review and practice, with feedback? How?
- Do the materials provide feedback that addresses both skills and concepts? How?
- Do the materials provide multiple strategies for teachers to provide feedback?

SCORING

2 points	Materials provide support for ongoing review and practice for students in learning concepts. **AND** Materials provide support for ongoing review and practice for students in learning skills. **AND** Materials provide support for teachers to provide feedback.

1 point	Materials do not provide support for ongoing review and practice for students in learning concepts. **OR** Materials do not provide support for ongoing review and practice for students in learning skills. **OR** Materials do not provide support for teachers to provide feedback.
0 points	Materials do not provide support for ongoing review and practice for students in learning concepts. **AND** Materials do not provide support for ongoing review and practice for students in learning skills. **AND** Materials do not provide support for teachers to provide feedback.

GUIDANCE FOR Indicator 3pi

Assessments

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials offer ongoing assessments: i. Assessments clearly denote which Standards are being emphasized.

Do materials denote what Standard is being assessed by each item?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do assessments clearly denote which Standards are being assessed?
- Are Standards denoted on the unit level, test level, and/or question level?

SCORING

2 points	Materials clearly denote specific Standards assessed for each question and/or each assessment.
1 point	Materials denote which Standards could be assessed by an assessment but do not specifically identify Standards for each question and/or each assessment.
0 points	Materials do not denote which Standards are being assessed.

GUIDANCE FOR Indicator 3pii

Assessments

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials offer ongoing assessments: ii. Assessments provide sufficient guidance to teachers for interpreting student performance and suggestions for follow-up.

Do materials denote what Standard is being assessed by each item?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do assessments provide sufficient guidance for the teacher to interpret student performance?
- Do assessments provide follow-up steps/suggestions for the teacher?

SCORING

2 points	Materials include sufficient guidance for teachers to interpret student performance. **AND** Materials provide suggestions for follow-up.
1 point	Materials include some guidance for teachers to interpret student performance. **AND/OR** Materials provide some suggestions for follow-up.

0 points	Materials do not include sufficient guidance for teachers to interpret student performance. **AND** Materials do not provide suggestions for follow-up.

GUIDANCE FOR Indicator 3piii

Assessments

CRITERION

Materials support teacher learning and understanding of the Standards.

INDICATOR

Materials offer ongoing assessments:

iii. The assessment materials include embedded assessments that reflect a variety of knowledge levels.

NOTE: *This is a Mississippi High Quality Instructional Materials Mathematics Review Rubric specific indicator that will be scored by Mississippi reviewers as part of the review process.*

Do materials include assessments that reflect a variety of knowledge levels?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do materials assign a knowledge level (i.e. Depth of Knowledge (DOK), easy/ grade-level/ advanced) to assessment items?
- Are there a range of knowledge levels within a given assessment?

SCORING

No score is given for indicator 3piii. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3piv

Assessments

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials offer ongoing assessments: iv. Multiple types of formative and summative assessments (performance-based tasks, questions, research, investigations, and projects) are embedded into the content materials and assess the learning targets.

NOTE: *This is a Mississippi High Quality Instructional Materials Mathematics Review Rubric specific indicator that will be scored by Mississippi reviewers as part of the review process.*

Do materials include multiple types of formative and summative assessments?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are there a variety of item types embedded in assessments?
- Do all students engage in multiple item types?

SCORING

No score is given for indicator 3piv. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3q

Assessments

CRITERION	Materials support teacher learning and understanding of the Standards.
INDICATOR	Materials encourage students to monitor their own progress.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do materials encourage students to monitor their own progress? How?

SCORING

No score is given for indicator 3q. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3r

Differentiated Instruction

CRITERION	Materials support teachers in differentiating instruction for diverse learners within and across courses.
INDICATOR	Materials provide teachers with strategies to help sequence or scaffold lessons so that the content is accessible to all learners.

Do the materials provide specific strategies to help teachers sequence and/or scaffold lessons so the content is accessible to all learners?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- What strategies or materials are provided for sequencing instruction? How are strategies presented?
- What strategies or materials are provided for scaffolding instruction? How are scaffolds presented?

SCORING

2 points	The materials provide specific strategies to sequence or scaffold lessons for all learners.
1 point	The materials provide some strategies to sequence or scaffold lessons. **OR** Some general statements about sequencing or scaffolding are provided.
0 points	The materials do not provide strategies to sequence or scaffold lessons. No general statements about sequencing or scaffolding are provided.

GUIDANCE FOR Indicator 3s

Differentiated Instruction

CRITERION	Materials support teachers in differentiating instruction for diverse learners within and across courses.
INDICATOR	Materials provide teachers with strategies for meeting the needs of a range of learners.

Do the materials provide appropriate suggestions to differentiate instruction to support the varying needs of learners?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- What strategies are provided for the teacher to meet the needs of a wide range of learners? How are the strategies presented?
- For which type of learner are specific strategies provided?

SCORING

2 points	Specific strategies for teachers to meet the needs of all learners are included.
1 point	The materials provide some strategies for teachers to meet the needs of all learners. **OR** Some general statements for the teacher about meeting the needs of all learners are included.
0 points	The materials do not provide strategies for teachers to meet the needs of all learners. **AND** No general statements for the teacher about meeting the needs of all learners are included.

GUIDANCE FOR Indicator 3t

Differentiated Instruction

CRITERION	Materials support teachers in differentiating instruction for diverse learners within and across courses.
INDICATOR	Materials embed tasks with multiple entry-points that can be solved using a variety of solution strategies or representations.

Do materials include tasks that provide multiple entry-points that can be solved using a variety of solution strategies or representations?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do materials include tasks with multiple entry-points? If so, provide examples.
- Do materials include tasks that can be solved using a variety of solution strategies or representations? If so, provide examples.
- How often do the materials include tasks with multiple entry points?
- What guidance is provided to the teacher to encourage students to solve tasks with a variety of strategies or representations?

SCORING

2 points	Teachers are provided guidance to help students solve problems with multiple entry points and problems with multiple solutions or representations consistently throughout the instructional materials.
1 point	Teachers are provided guidance to help students solve problems with multiple entry points or problems with multiple solutions or representations throughout the instructional materials. **OR**

	Teachers are inconsistently provided with guidance to help students solve problems with multiple entry points and problems with multiple solutions or representations in the instructional materials.
0 points	Teachers are provided with little or no guidance to help students solve problems with multiple entry points or problems with multiple solutions or representations.

GUIDANCE FOR Indicator 3u

Differentiated Instruction

CRITERION	Materials support teachers in differentiating instruction for diverse learners within and across courses.
INDICATOR	Materials provide support, accommodations, and modifications for English Language Learners and other special populations that will support their regular and active participation in learning mathematics (e.g., modifying vocabulary words within word problems).

Do materials suggest supports, accommodations, and/or modifications for English Language Learners and other special populations to support their regular and active participation in learning mathematics?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- What specific strategies for support, accommodations, and/or modifications within the lesson or the problems are provided for the teacher?
- How frequent is teacher guidance provided such that ELL and other special populations can regularly and actively participate in learning mathematics?
- For which type of learner are specific strategies provided (ELL, other special populations)?

SCORING

2 points	Materials include teacher guidance to provide support for ELL students and other special populations.
1 point	Materials include teacher guidance to provide some support for ELL students and other special populations. **OR** Some general statements about ELL students and other special populations are provided.

0 points	Materials include little, if any, teacher guidance to provide support for ELL students and other special populations.

GUIDANCE FOR Indicator 3v

Differentiated Instruction

CRITERION	Materials support teachers in differentiating instruction for diverse learners within and across courses.
INDICATOR	Materials provide support for advanced students to investigate mathematics content at greater depth.

Do materials provide opportunities for advanced students to investigate mathematics content at greater depth?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- What specific guidance is provided for teachers to support advanced students to investigate mathematics content at greater depth?
- Are there examples of advanced students working at a greater depth with a Standard—not just more problems or problems from higher-level courses?

SCORING

2 points	Materials provide multiple opportunities for advanced students to investigate the course-level mathematics at a greater depth. **AND** There are no instances of advanced students simply doing more problems than their classmates.
1 point	Materials provide some opportunities for advanced students to investigate the course-level mathematics at a greater depth. **OR** Materials provide course level problems — problems are not at a greater depth for advanced students. **OR**

	There are some instances of advanced students simply doing more problems than their classmates.
0 points	Materials provide very few, if any, opportunities for advanced students to investigate the course-level mathematics at a greater depth. **AND** There are many instances of advanced students simply doing more problems than their classmates.

GUIDANCE FOR Indicator 3w

Differentiated Instruction

CRITERION	Materials support teachers in differentiating instruction for diverse learners within and across courses.
INDICATOR	Materials provide a balanced portrayal of various demographic and personal characteristics.

Do the materials provide a balanced portrayal of various demographic and personal characteristics?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Collect examples of various demographic and personal characteristics throughout the chapters.
- How do the materials balance demographics and personal characteristics?

SCORING

2 points	The materials provide various demographic and personal characteristics.
1 point	The materials provide some variety in demographic and personal characteristics.
0 points	The materials do not provide various demographic and personal characteristics.

GUIDANCE FOR Indicator 3x

Differentiated Instruction

CRITERION	Materials support teachers in differentiating instruction for diverse learners within and across courses.
INDICATOR	Materials provide opportunities for teachers to use a variety of grouping strategies.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Provide examples of the grouping strategies and ways the materials provide for interaction among students.

SCORING

No score is given for indicator 3x. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3y

Differentiated Instruction

CRITERION Materials support teachers in differentiating instruction for diverse learners within and across courses.

INDICATOR Materials encourage teachers to draw upon home language and culture to facilitate learning.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Provide examples of home language connections and connections to culture of students to facilitate learning. This may be at the beginning of each chapter or throughout the materials.

SCORING

No score is given for indicator 3y. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3z

Effective Technology Use

CRITERION	Materials support effective use of technology to enhance student learning. Digital materials are accessible and available in multiple platforms.
INDICATOR	Materials integrate technology such as interactive tools, virtual manipulatives/objects, and/or dynamic mathematics software in ways that engage students in the Standards of Mathematical Practices.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are videos, virtual manipulatives, interactive tools, and/or games available to students?
- How do the materials use technology to engage students in "doing" mathematics?
- Do the materials use technology to engage students in content Standards and Standards for Mathematical Practices?

SCORING

No score is given for indicator 3z. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3aa

Effective Technology Use

CRITERION

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

INDICATOR

Digital materials are web-based and compatible with multiple internet browsers. In addition, materials are "platform neutral" and allow the use of tablets and mobile devices.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are any instructional technology resources web-based and compatible with multiple Internet browsers?
- Are materials platform neutral (accessible on any platform, for example Windows and Apple)?
- Do student resources (including assistive technology for students with disabilities) work on mobile devices as well as PCs?

SCORING

No score is given for indicator 3aa. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3ab

Effective Technology Use

CRITERION	Materials support effective use of technology to enhance student learning. Digital materials are accessible and available in multiple platforms.
INDICATOR	Materials include opportunities to assess student mathematical understandings and knowledge of procedural skills using technology.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are online assessments available? If so, what kind of assessments are used? (For example, computer adaptive testing, fixed form, etc.)?
- Are teachers able to create their own assessments?
- Do assessment items assess both mathematical understanding and procedural skill/fluency? How?

SCORING

No score is given for indicator 3ab. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3aci

Effective Technology Use

CRITERION	Materials support effective use of technology to enhance student learning. Digital materials are accessible and available in multiple platforms.
INDICATOR	Materials can be easily customized for individual learners. i. Digital materials include opportunities for teachers to personalize learning for all students, using adaptive or other technological innovations.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are teachers able to manipulate or construct learning experiences for students?
- Do digital materials include adaptive or other technological innovations for teachers to personalize learning for students?
- Can digital materials be differentiated based on individual students' needs?

SCORING

No score is given for indicator 3aci. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3acii

Effective Technology Use

CRITERION

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

INDICATOR

Materials can be easily customized for individual learners.

ii. Materials can be easily customized for local use. For example, materials may provide a range of lessons to draw from on a topic.

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Are teachers able to customize digital materials for local use (student and/or community interests)?

SCORING

No score is given for indicator 3acii. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3ad

Effective Technology Use

CRITERION

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

INDICATOR

Materials include or reference technology that provides opportunities for teachers and/or students to collaborate with each other (i.e., discussion groups, webinars, e-mail, messaging).

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the digital materials provide opportunities for online collaboration?
- Are there opportunities for collaboration between teacher and student? Or student to student? (i.e., discussion groups, webinars, e-mail, messaging)

SCORING

No score is given for indicator 3ad. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3ae

Supplemental Materials

CRITERION	Supplemental materials reinforce core instruction and provide ample and a variety of resources to support student learning.
INDICATOR	Supplemental materials employ a variety of reading levels and is grade/level appropriate.

NOTE: *This is a Mississippi High Quality Instructional Materials Mathematics Review Rubric specific indicator that will be scored by Mississippi reviewers as part of the review process.*

Do supplemental materials use a variety of reading levels that are grade-level appropriate?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do supplemental materials offer students, at a variety of reading levels, access to the grade-level mathematics?
- Are the contexts and situations at an appropriate reading level to engage all students with the mathematical problems?
- Do materials provide opportunities to differentiate reading levels based on individual students' needs?

SCORING

No score is given for indicator 3ae. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3af

Supplemental Materials

CRITERION	Supplemental materials reinforce core instruction and provide ample and a variety of resources to support student learning.
INDICATOR	Supplemental materials provide ample resources that reinforce student learning through practice.

NOTE: *This is a Mississippi High Quality Instructional Materials Mathematics Review Rubric specific indicator that will be scored by Mississippi reviewers as part of the review process.*

Do supplemental materials reinforce student learning through practice?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do supplemental materials provide additional practice for students?
- When used as designed, do supplemental materials support students' engagement with grade-level tasks?
- Are specific Standards targeted by supplemental materials?

SCORING

No score is given for indicator 3af. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3ag

Supplemental Materials

CRITERION	Supplemental materials reinforce core instruction and provide ample and a variety of resources to support student learning.
INDICATOR	Supplemental materials provide ample resources that reinforce student learning through practice.

NOTE: *This is a Mississippi High Quality Instructional Materials Mathematics Review Rubric specific indicator that will be scored by Mississippi reviewers as part of the review process.*

Are supplemental materials aligned to the core instructional materials?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the supplemental materials include alignment to core instructional materials?
- Is there guidance for the teacher in the core instructional materials and the supplemental materials on how the two work together?
- Are supplemental materials aligned to the Standards identified in the core instructional materials?

SCORING

No score is given for indicator 3ag. Only qualitative evidence is provided.

GUIDANCE FOR Indicator 3ah

Supplemental Materials

CRITERION	Supplemental materials reinforce core instruction and provide ample and a variety of resources to support student learning.
INDICATOR	Supplemental materials provide a variety of resources for student learning activities (e.g. journals/writing, cooperative group work, graphic organizers, etc.)

NOTE: *This is a Mississippi High Quality Instructional Materials Mathematics Review Rubric specific indicator that will be scored by Mississippi reviewers as part of the review process.*

Are there a variety of resources for student learning activities in supplemental materials?

EVIDENCE COLLECTION

Evidence Collection: Guiding Questions

- Do the supplemental materials provide students with access to the tools needed to engage with grade-level mathematics? What tools are available to students?
- Do the supplemental materials provide students with opportunities to work independently, with partners, and/or in groups? Do the materials embed strategies to foster communication and collaboration?
- Are there a variety of resources employed on how students could engage with and respond to the content of the supplemental materials?

SCORING

No score is given for indicator 3ah. Only qualitative evidence is provided.