MATH GRADES K-8

EVIDENCE GUIDES

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.

Are assessment questions addressing grade-level standards?

Purpose of the Indicator:

This indicator, along with 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:

Do K-5 assessments include questions addressing the following topics?

(i). Probability, including chance, likely outcomes, probability models.
(ii). 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.
(iii). Similarity, transformations, and congruence.

Do materials include many above-grade 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 items on assessments that are 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.

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 Cluster Meeting:

Verify with 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 listed above grade-level assessment item, discuss the following questions:

> 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?
>
> Would skipping the above grade-level assessment item (and, therefore, the associated lessons and activities) still maintain the integrity of the instructional materials?
>
> Is the above grade-level assessment item included at the beginning of the year or at the end of the year?

Scoring:

2 points:

- No topics are explicitly assessed from (i), (ii), or (iii) above in K-5.
- Materials assess grade-level standards OR include above-grade assessment items that could be removed or modified without impacting the structure or intent of the materials.
- Above-grade items are mathematically reasonable.

0 points:

- Topics are explicitly assessed from (i), (ii), or (iii) above in K-5.

OR

- Materials include above-grade assessments items that would require major modifications to fix.

OR

- Above-grade 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: Instructional material spends the majority of class time on the major clusters of each grade.

Does at least 65% of instructional time address the major work of the grade?

Purpose of the Indicator:

This indicator, along with 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 the materials that align to the major clusters of standards for the grade-level being reviewed.

Note: ALL standards in CCSSM are accounted for in evidence gathering between indicators 1b, 1c, 1e, and 1f.

Evidence Collection:

When considering units/ chapters, what percent addresses the major work of the grade?

When considering lessons/activities, what percent addresses the major work of the grade?

When considering amount of instructional time, what percent is spent on major work of the grade?

When considering supporting work, what percent connects and addresses major work of the grade?

If it is not possible for a reviewer to capture data for each of these perspectives, then the reviewer should provide an explanation of 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 already 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.

(Continued)

Familiarize yourself with the major work of the grade being reviewed. (See the EdReports Quality Instructional Materials Tool: Grades K-8 Mathematics). 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 Cluster Meeting:

Which perspective is most representative of the instructional materials? Why?

How similar are each reviewer's calculations percents?

In which lessons does supporting work increase the focus on the major work of the grade?

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.

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?

Purpose of the Indicator:

This indicator, along with indicators 1d, 1e, and 1f, determines the shift of coherence. In order to maintain coherence materials should link to mathematics across grades and within grades. The chapters and lessons should show how the learning is building on previous learning and builds towards future learning. Within the grade-level, supporting work is connected to major work.

Note: ALL standards in the CCSSM are accounted for in evidence gathering between indicators 1b, 1c, 1e, and 1f.

Evidence Collection:

When are supporting standards/clusters connected to the major standards/clusters of the grade? How are they connected?

When supporting standards/clusters are not connected to the major standards/clusters of the grade, is the separation mathematically reasonable?

Are there natural connections between supporting and major standards/clusters of the grade that are entirely absent from the materials?

Familiarize yourself with the major and supporting standards/clusters of the grade being reviewed (See the EdReports Quality Instructional Materials Tool: Grades K-8 Mathematics).

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 standard/cluster 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/clusters and explain the connections made/missing between supporting and major standards/clusters within the materials.

Discussion Points for Cluster Meeting:

What connections between supporting and major standards/clusters of the grade were identified?

Where were connections of supporting and major standards/clusters of the grade found?

How were the connections made in the instructional materials?

Scoring:

2 points:

- Supporting content is used to enhance focus on major work, 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.

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 school year in order to foster coherence between grades.

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

Purpose of the 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 a school year and if the expectations of the materials are reasonable for both teachers and students to complete in the suggested timeframe.

Evidence Collection:

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)

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.
- 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 Cluster Meeting:

Can students master ALL grade-level standards in the timeframe stated?

Is there is too much material or too little?

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 school year as written and would not require significant modifications. For those materials on the borderline (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 school year.

1 point:

- The suggested amount of time raises some concerns as to whether the time frame 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 school year.

0 points:

- The suggested amount of time for the materials is not viable for one 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 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.

Are the materials consistent with the progressions in the Standards?

Purpose of the Indicator:

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

Note: ALL standards in CCSSM are accounted for in evidence gathering between indicators 1b, 1c, 1e, and 1f.

Evidence Collection:

Does the design of the materials concentrate on the mathematics of the grade as referenced in the Standards and Progression documents (See http://ime.math.arizona.edu/progressions/)?

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 off-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 work of the grade? Does it take time away from the 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.

(Continued)

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.
>
> Cluster 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 cluster headings that use the phrase “apply and extend previous understanding”).

Discussion Points for Cluster Meeting:

Is grade-level material reaching the full intent of the standards? If not, how does that impact the progression of the mathematics?

What work from other grades was present? Does it enhance or distract from grade-level work?

How was 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.

Are they spending a good portion of time on all areas of major work? Are there only a few opportunities for grade-level work in one domain, but many opportunities in another domain?

Scoring:

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.
- Materials meet the full depth of the grade-level standards.
- All students are given extensive work with grade-level problems.
- Materials explicitly relate grade-level concepts to prior knowledge from earlier grades.

(Continued)

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..
- Materials do not meet the full depth of the grade-level standards.
- All students are not given extensive work with grade-level problems.
- 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 CCSSM cluster headings.
>
> 1fii. Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade, in cases where these connections are natural and important.

Are standards connected or are they presented as separate ideas?

Purpose of the Indicator:

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

Note: ALL standards in CCSSM are accounted for in evidence gathering between indicators 1b, 1c, 1e, and 1f.

Evidence Collection:

Does the mathematics in the materials make connections to cluster headings?

Are there natural connections between any domains, clusters, 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 Cluster Meeting:

Where are lessons and problems shaped by the cluster headings of the CCSSM?

Where are lessons and problems connected across clusters headings?

Are there natural and mathematically important connections missed? If so, where?

Scoring:

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

2 points:

- The materials are visibly shaped by the CCSSM cluster headings.
- Lessons and problems connect across domains and clusters.

1 point:

- Important connections are missed.

OR

- The materials are not be visibly shaped by the CCSSM cluster heading.

OR

- Lessons and problems do not connect.

0 points:

- Materials are not shaped by the CCSSM cluster headings.
- Important connections are not made in the materials.

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?

Purpose of the 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:

Are cluster(s) or standard(s) from the grade-level that specifically relate to conceptual understanding (look at it throughout the whole grade-level) developing conceptual understanding?

Grade	Standards
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 program 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 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 clusters or standards that relate specifically to conceptual understanding, list the specific clusters/standards and explain how the evidence demonstrates conceptual understanding. If opportunities to develop conceptual understanding are missed, specifically list the clusters/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.

Discussion Points for Cluster Meeting:

What does conceptual understanding look like in the instructional materials?

What examples are most representative of the instructional materials?

Scoring:

2 points:

- The instructional materials develop conceptual understanding throughout the grade-level.
- 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.
- 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?

Purpose of the 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:

Are the cluster(s) or standard(s) from the grade-level that specifically relate to procedural skill and fluency developing procedural skill and/or fluency?

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 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?

(Continued)

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 x + y = 1, 2x + 2y = 3
>
> Example of problems when generic cases require efficient algorithms: The sum 8767 + 2286 or the system 6y + x = x + 3, -x = 1 + 2y

Do materials in grades K-6 (within the grade-band reviewing) provide repeated practice toward attainment of fluency standards? Note: Attainment of procedural fluency is an end of grade expectation.

Evidence must include specific examples from the instructional materials. If opportunities to develop procedural skill/fluency are missed, specifically list the clusters/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.

Discussion Points for Cluster Meeting:

What does fluency mean at this grade-level, and do the instructional materials adequately prepare students?

How do instructional materials build procedural skill and fluencies over the course of an academic year?

Scoring:

2 points:
- The instructional materials develop procedural skill and fluency throughout the grade-level.
- 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 no or few opportunities to develop procedural skills and fluency throughout the grade-level.

- 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: Materials are designed so that teachers and students spend sufficient time working with engaging applications of the mathematics, without losing focus on the major work of each grade.

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

Purpose of the 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 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 content.

Evidence Collection:

Are the select cluster(s) or 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 promote problem solving that calls for using math flexibly in a variety of contexts?

Some examples of clusters or standards that call for application include:

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 clusters/standards are identified, evaluate whether students are engaging in application of content and skills as described in the clusters or 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 must include specific examples from the instructional materials. If opportunities for application are missed, specifically list the clusters/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.

Discussion Points for Cluster Meeting:

Where and what are the non-routine problems? If problems are routine, include examples.

How do the materials encourage students to apply mathematics to contextual situations?

Explain the strategy/reasoning used as you collected evidence for this indicator.

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.

Identify clusters/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. 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.
- 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. There is a balance of the 3 aspects of rigor within the grade.

Do materials balance the three aspects of rigor?

Purpose of the 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:

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.

> Consider whether the content/topic is being introduced to students for the first time, or is an extension of previous learning.
>
> Consider whether materials use conceptual understanding to develop procedural skill and fluency, or whether students are 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?

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 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 then the evidence collected for 2a, 2b, and 2c.

Discussion Points for Cluster Meeting:

- How did I determine “balance”?
- What are places in grade-level materials where specific aspects of rigor are called for?
- Share any generalizations that noted in materials over the course of a grade-level, with specific examples (page numbers noted) to support the generalizations.
- Are there aspects of Rigor absent from the materials?
- Is the quality of an aspect of Rigor different from the other aspects? If yes, make sure this was captured in @a, 2b, and/or 2c. Remember that this report 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.
- 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.
- 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 MPs identified? Do the MPs enrich the content?

Purpose of the 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:

Do teacher's materials clearly identify the MPs throughout the grade?

Where in the materials are the MPs identified?

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 addresses that, or vice versa)?

How do the materials identify and describe MPs (beyond the meaning of MPs as stated in the CCSS)?

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.

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 Cluster Meeting:

Verify with the team the manner in which the MPs are identified throughout the materials, and that all MPs are present.

Discuss any other places where the MPs might be used to enrich the content but are not clearly identified.

Verify that the MPs, when used by the students, enrich the mathematical content in an authentic way.

This is not Quality (that is 2f and 2gi, 2gii, and 2giii).

Scoring:

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

0 points:
- MPs are not identified.
- MPs are not used to enrich the content.
- MPs are treated separately from the mathematics content.

Guidance for Indicator 2f

Criterion: Materials meaningfully connect the Standards for Mathematical Content and the Standards for Mathematical Practice.

Indicator: Materials carefully attend to the full meaning of each practice standard.

Is the full intent of the MPs present?

Purpose of the 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 practice standard.

Evidence Collection:

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 practice standards 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 Math Practices are marked:

> MP.1: ensure that students are actually making sense of problems and persevering 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.

(Continued)

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. Materials should not confuse the verb "model" with the noun "model;" a student is rarely modeling just because they are using pictures. For example, having students draw a picture to understand multiplication of fractions is not modeling, but having students solve a real-world problem where students could multiply fractions is modeling (drawing a picture could be a part of creating this model, but the true modeling is 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, but if MP.5 is marked for these kinds of lessons, then the full meaning is not attended to. If the students aren't given the opportunity to choose tools, the full meaning is not attended to.

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 in 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."

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

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 practice standard.

Discussion Points for Cluster Meeting:

Do examples illustrate where materials are attending to the full meaning of each practice standard? What examples are most representative of the instructional materials?

Do examples illustrate where materials are failing to attend to the full meaning of each practice standard? 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 analyze the arguments of others concerning key grade-level mathematics detailed in the content standards.

Do students engage with MP3?

Purpose of the 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 analyzing the arguments of others. The materials should have a balance of prompting students to construct viable arguments and prompting students to analyze the arguments of others. Students should be prompted to reason while engaging with math content.

Evidence Collection:

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 is, 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

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 analyze the reasoning of others. Analyze the reasoning of others should include

more than just deciding right or wrong.
Discussion Points for Cluster Meeting:

Do examples illustrate where materials are attending to the full meaning of MP3? What examples are most representative of the instructional materials?

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 analyze the arguments of others.

1 point:

- There are missed opportunities where the materials could prompt students to both construct viable arguments and/or analyze the arguments of others.

0 points:

- Materials have few, if any prompts for students to both construct viable arguments and/or analyze the arguments 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 analyzing the arguments of others concerning key grade-level mathematics detailed in the content standards.

Do materials assist teachers in engaging students in MP3?

Purpose of the 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 analyzing the arguments of others. The materials have a balance of assisting the teacher in engaging students in constructing viable arguments and assisting the teacher in analyzing the arguments of others. Materials should assist teachers in engaging students in reasoning while working with math content.

Evidence Collection:

Are there directions for the teacher, in teacher's guides, and lesson and unit overviews to assist students in constructing viable arguments and analyzing the arguments of others?

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 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 argument.

Record specific examples and evidence of where in the teacher materials and of how the materials assist teachers in engaging students in constructing viable arguments and analyzing the arguments of others.

Discussion Points for Cluster Meeting:

Do examples illustrate where materials are assisting teachers in engaging students in MP3? What examples are most representative of the instructional materials?

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 materials assist teachers in engaging students in both constructing viable arguments and analyzing the arguments of others, frequently throughout the program.

1 point:

- There are some missed opportunities where the materials could assist teachers in engaging students in both constructing viable arguments and analyzing the arguments of others.

0 points:

- Materials provide little or no assistance to teachers in engaging students in both constructing viable arguments and analyzing the arguments 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 use accurate mathematical terminology?

Purpose of the 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:

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 Cluster Meeting:

Examples of mathematical terminology reflect the instructional materials.

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.

Guidance for Indicators 3a-3e: Use and Design Facilitate Student Learning

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

Indicator 3a:

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:

Do the practice pages that follow allow students to utilize the new mathematics in order to further develop their knowledge of the new content?

Do all 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”?

Discussion Points for Cluster Meeting:

What is the difference between “problems” and “exercises” within the materials?

How do the materials encourage students to apply new mathematics learned in the exercises?

Discuss the difference between problems and exercises within the structure of the materials. Note the terminology the series uses to differentiate.

Discuss the effectiveness of the exercises in allowing students to apply learned mathematics in order to build knowledge. Note specific instances where these exercises do not serve the purpose intended within the lesson.

Note any instances of new mathematics being presented within the student exercises.

Scoring:

2 points:

- Materials distinguish between problems and exercises within each lesson.
- Students are learning new mathematics within each lesson and then applying what they have learned in order to build knowledge.
- There are no, or very few, instances of new mathematics being presented in the student exercises.
- All, or most, problems or exercises have a purpose.

1 point:

- Distinguishing between problems and exercises within lessons is confusing or difficult.
- A lack of cohesiveness sometimes exists between the problems and exercises within lessons.
- There are some instances of new mathematics being presented in the student exercises.
- 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.
- There is a consistent lack of cohesiveness between the problems and exercises within lessons.
- There are many instances of new mathematics being presented in the student exercises.
- Many instances exist of problems or exercises not serving a purpose within lessons.

Indicator 3b:

Design of assignments is not haphazard: tasks are given in intentional sequences.

Evidence Collection:

Are there any instances of new mathematics in the “exercises” that was not part of the “problems”?

Are there any instances where the sequencing of assignments is haphazard in development, i.e. abstract before concrete, unnatural flow of material, etc.?

Discussion Points for Cluster Meeting:

Is there a natural progression from the “problems” to student assignments?

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.

Scoring:

2 points:

- Exercises within student assignments are intentionally sequenced to build understanding and knowledge.

1 point:

- Some instances of confusion in student assignment sequencing and design exist.

0 points:

- Many instances of confusion in student assignment sequencing and design exist.

Indicator 3c:

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:

Are students asked to produce many types of answers throughout the work they do?

Are students asked to produce models, practice fluency, create arguments, justify their answers, attend to mathematical practices, and make real-world connections?

Discussion Points for Cluster Meeting:

What are the different types of products students must provide?

Do student products range from fluency to higher-level thinking?

Discuss the types of products students are asked to create and determine if there is variety. Note if students are asked to create products at various levels of thinking.

Scoring:

2 points:

- Students are asked to demonstrate their learning using a variety of products.

1 point:

- Students are asked to demonstrate their learning using products with some variety.

0 points:

- There is no variety in what students are asked to produce.

Indicator 3d:

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

Evidence Collection:

Are the manipulatives consistent representations of the mathematical objects?

Are the manipulatives connected to written methods?

Discussion Points for Cluster Meeting:

Are manipulatives presented? If so, do they represent mathematical objects while connecting to written methods?

Discuss the effectiveness of manipulatives as faithful representations of the mathematical objects. Note if manipulatives connect to written methods.

Scoring:

2 points:

- Manipulatives are present, faithful representations of mathematical objects and are connected to written methods.

1 point:

- Manipulatives are present but do not consistently represent mathematical objects and/or are not connected to written methods.

0 points:

- Manipulates are not present or do not accurately represent mathematical objects.

Indicator 3e:

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

Evidence Collection:

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?

Discussion Points for Cluster Meeting:

What visual designs distract students? What visual designs create student engagement?

Discuss whether the visual design has a consistent layout in both the teacher and student materials. Note if the design is distracting or chaotic.

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

Guidance for Indicators 3f-3l: Teacher Planning and Learning for Success with CCSS

Criterion: Materials support teacher learning and understanding of the Standards.

Indicator 3f:

Materials support teachers in planning and providing effective learning experiences by providing quality questions to help guide students' mathematical development.

Evidence Collection:

Are there any overview sections and/or annotations that contain narrative information about the math content and/or quality questions to help guide students' mathematical development?

Are there questions to ensure that they would lead to a student's mathematical development and would allow for deeper thinking?

Discussion Points for Cluster Meeting:

Discuss the ease of finding the needed resources and the time commitment it would require to gather these resources to ensure that they would be useful.

Discuss the level of support needed in questioning, timeline, content assistance, etc. to ensure the teacher has the needed material to prepare students for the upcoming course's mathematics.

Scoring:

2 points:

- Guiding questions are consistently provided to assist in students' mathematical development.
- All/most questions are of high quality and encourage deep thinking, not just knowledge retrieval.

1 point:

- Guiding questions are occasionally provided to assist in students' mathematical development.
- Some questions are of high quality and encourage deep thinking, not just knowledge retrieval.

0 points:

- Guiding questions are never, or rarely, provided to assist in students' mathematical development.
- Questions that are provided require no analysis, all or most require just knowledge retrieval.

Indicator 3g:

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

Evidence Collection:

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, it is overarching and accessible to most.

Is the knowledge of content that is included accurate and understandable and gives true assistance to all educators using the materials?

Discussion Points for Cluster Meeting:

Discuss the ease of finding the needed resources and the time commitment it would require to gather these resources to ensure that they would be useful.

Discuss the level of support needed in questioning, timeline, content assistance, etc. to ensure the teacher has the needed material to prepare students for the upcoming course's mathematics.

Scoring:

2 points:

- Content knowledge is included, where needed, and is accurate, understandable, and gives true assistance to all educators using the text.
- When applicable and would enhance student learning, technology support is embedded, overarching and accessible to most. If technology support is never included, this indicator cannot get full points.

1 point:

- Content knowledge is included; however, it is not always where needed and is not always accurate and understandable to give true assistance to all educators using the materials.
- When applicable and would enhance student learning, technology support is embedded and is overarching and accessible to most. However, sometimes technology supports that would enhance the student learning are omitted.

0 points:

- Content knowledge is not included, or if it is, the content knowledge is often not accurate or helpful.
- No technology supports are included.

Indicator 3h:

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.

Evidence Collection:

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.

Discussion Points for Cluster Meeting:

Discuss the ease of finding the needed resources and the time commitment it would require to gather these resources to ensure that they would be useful.

Discuss the level of support needed in questioning, timeline, content assistance, etc. to ensure the teacher has the needed material to prepare students for the upcoming course's mathematics.

Scoring:

2 points:

- More advanced mathematics concepts are consistently explained and will improve a teacher's deeper understanding of the content.
- Explanations are accessible to all educators.

1 point:

- More advanced mathematics concepts are occasionally explained and will improve a teacher's deeper understanding of the content, but some major explanations are missing or not able to assist an educator in their own knowledge level of the mathematics.
- Some explanations are accessible to all educators.

0 points:

- More advanced mathematics concepts aren't explained in the teacher's materials, or they are explained at a level that would not deepen a teacher's understanding of the content.
- Explanations are given, but they are difficult to access or use to deepen teachers' knowledge.

Indicator 3i:

Materials contain a teacher's edition that explains the role of the specific mathematics standards in the context of the overall series.

Evidence Collection:

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?

Discussion Points for Cluster Meeting:

Discuss the ease of finding the needed resources and the time commitment it would require to gather these resources to ensure that they would be useful.

Discuss the level of support needed in questioning, timeline, content assistance, etc. to ensure the teacher has the needed material to prepare students for the upcoming course's mathematics.

Scoring:

2 points:

- Explanations of the role of the specific course-level mathematics in the context of the overall mathematics materials are offered, at a minimum, in each unit/module.
- Explanations are not always given as just one course level below or above but give connections among multiple course levels.

1 point:

- Explanations of the role of the specific course-level mathematics in the context of the overall mathematics materials are offered, but the explanations are general and too overarching to assist an educator in truly understanding the role of the specific course-level mathematics in the context of the series.
- Explanations are given, but there are some just one course level below or above.

0 points:

- There are few, if any, explanations of the role of the specific course-level mathematics in the context of the overall mathematics materials, and/or the explanations are too general for teachers to see the connections.
- Explanations, if given, are only addressing within course-level connections or just one course level below or above.

Indicator 3j:

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:

Beginning sections of the entire book, unit, chapter, lesson that contains overview sections, teacher instruction pages, or ancillary supports that contain:

- A narrative mathematical explanation of the math content in each topic paying attention to key instruction that will inform others that may be assisting the child in their progress at school.
- Teacher instruction pages for any identified research-based strategies.
- Pacing guides with number of days of instruction and how many minutes of instruction are contained in each of those days.

Looking at the standards being taught in the lessons, chapters, units and the timeline given to teach those standards, ensure that it is reasonable and useful for the educator.

Discussion Points for Cluster Meeting:

Discuss the ease of finding the needed resources and the time commitment it would require to gather these resources to ensure that they would be useful.

Discuss the level of support needed in questioning, timeline, content assistance, etc. to ensure the teacher has the needed material to prepare students for the upcoming course's mathematics.

Scoring:

Note: No score is given for indicator 3j (list of lessons). Only qualitative evidence is provided.

Indicator 3k:

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:

Beginning sections of the entire book, unit, chapter, lesson that contains overview sections, teacher instruction pages, or ancillary supports that contain:

- A narrative mathematical explanation of the math content in each topic paying attention to key instruction that will inform others that may be assisting the child in their progress at school.
- Teacher instruction pages for any identified research-based strategies.
- Pacing guides with number of days of instruction and how many minutes of instruction are contained in each of those days.

Looking at the standards being taught in the lessons, chapters, units and the timeline given to teach those standards, ensure that it is reasonable and useful for the educator

Discussion Points for Cluster Meeting:

Discuss the ease of finding the needed resources and the time commitment it would require to gather these resources to ensure that they would be useful.

Discuss the level of support needed in questioning, timeline, content assistance, etc. to ensure the teacher has the needed material to prepare students for the upcoming course's mathematics.

Scoring:

Note: No score is given for indicator 3k (strategies for informing parents). Only qualitative evidence is provided.

Indicator 3l:

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

Evidence Collection:

Beginning sections of the entire book, unit, chapter, lesson that contains overview sections, teacher instruction pages, or ancillary supports that contain:

- A narrative mathematical explanation of the math content in each topic paying attention to key instruction that will inform others that may be assisting the child in their progress at school.
- Teacher instruction pages for any identified research-based strategies.
- Pacing guides with number of days of instruction and how many minutes of instruction are contained in each of those days.

Looking at the standards being taught in the lessons, chapters, units and the timeline given to teach those standards, ensure that it is reasonable and useful for the educator.

Discussion Points for Cluster Meeting:

Discuss the ease of finding the needed resources and the time commitment it would require to gather these resources to ensure that they would be useful.

Discuss the level of support needed in questioning, timeline, content assistance, etc. to ensure the teacher has the needed material to prepare students for the upcoming course's mathematics.

Scoring:

Note: No score is given for indicator 3l (explanations of instructional approaches). Only qualitative evidence is provided.

Guidance for Indicators 3m-3q: Assessment

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

Indicator 3m:

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

Evidence Collection:

Do materials provide a clear path to assess and monitor students' prior knowledge both within and across grade levels/courses?

Do materials offer supports that might be necessary to ensure students are able to meet the expectations of the grade level/course?

Discussion points for Cluster Meeting:

Where did I find examples to show assessment of prior knowledge?

Are there key topics missing from prior knowledge assessments?

Scoring:

2 points:

- Materials include multiple opportunities for teachers to assess/apply students' prior knowledge and connect it to the new learning.
- Students are appropriately monitored to assess key prior knowledge in order to continue with learning or to provide interventions.

1 point:

- Attention to students' prior knowledge is included in some lessons/units/assessments, but connections to new learning are not made.
- There is some opportunity for the teacher to apply prior knowledge to the students' new learning.
- The lessons/units/assessments have some missed opportunities to remediate on errors in prior knowledge.

0 points:

- No/minimal opportunities for teachers to assess students' prior knowledge.

Indicator 3n:

Materials provide support for teachers to identify and address common student errors and misconceptions.

Evidence Collection:

Do materials highlight common student errors or misconceptions?

Do materials provide pathways for addressing student errors and misconceptions?

Are the pathways for addressing students' errors and misconceptions mathematically sound (e.g. does not rely on "tricks")?

Do materials provide opportunities to have mathematical conversations to address errors and misconceptions?

Discussion points for Cluster Meeting:

Where are examples that show common misconceptions or errors in students' work/understanding?

How do the materials provide opportunities for the teacher to address common errors or misconceptions?

Were there opportunities for mathematical discussions when an error or misconception was discovered?

Were there common misconceptions not addressed in the materials?

Scoring:

2 points:

- Materials include multiple opportunities for teachers to notice and correct errors or misconceptions.
- Students are consistently monitored to assess common errors and misconceptions and provide interventions.
- There are opportunities for mathematical discussions to help address common errors and misconceptions.
- No major errors/misconceptions were left unaddressed.

1 point:

- Attention to common errors and misconceptions are included in some lessons/units/assessments, but a path for intervening is not provided.

- There are some opportunities for the teacher to identify common errors and misconceptions.
- There are some opportunities for mathematical discussions to address common errors and misconceptions.
- The lessons/units/assessments have missed some opportunities to intervene where common errors or misconceptions occur.
- The requirements outlined in Evidence Collection are met sometimes and/or not thoroughly.

0 points:

- No/minimal opportunities for teachers to identify students' common errors and misconceptions.

Indicator 3o:

Materials provide support for ongoing review and practice, with feedback, for students in learning both concepts and skills.

Evidence Collection:

Do materials provide ongoing review, practice, and feedback?

Review materials to see if feedback addresses both skills and concepts.

Review materials to see if the amount of ongoing review and practice is reasonable.

Review materials to see if there are there multiple strategies for providing feedback.

Discussion points for Cluster Meeting:

Where did I find examples in the materials to show opportunities to provide productive feedback?

How do the materials provide opportunities for the teacher to provide quality feedback?

How do the materials address ongoing review and practice?

Were there opportunities for the teacher to use multiple strategies for providing feedback?

Scoring:

2 points:

- Materials include regular opportunities for teachers to provide the student with ongoing review and practice of both concepts and skills.

- Materials include regular opportunities for the teacher to provide feedback.
- Materials provide multiple feedback strategies.
- Students are regularly monitored in order for the teacher to provide feedback.

1 point:

- Attention to ongoing review and practice of concepts and skills is included in some lessons/units/assessments, but a path for productive feedback is not provided.
- Attention to feedback is included in some lessons/units/assessments.
- Feedback strategies are limited.
- The lessons/units/assessments have missed some opportunities to provide feedback about concepts and skills, such as providing feedback only on skills but not concepts.

0 points:

- No/minimal opportunities for teachers to provide ongoing review and practice or feedback.

Indicator 3pi:

Materials offer ongoing assessments:

i. Assessments clearly denote which standards are being emphasized.

Evidence Collection:

Review assessments to see if they clearly denote which standards are being assessed.

Discussion points for Cluster Meeting:

Where did I find examples in the materials to show how Standards were denoted on assessments?

Scoring:

2 points:

- Materials include denotations of the standards being assessed in assessments.

1 point:

- Standards are clearly denoted in some of the assessments.

0 points:

- No/minimal standards are denoted on assessments.

Indicator 3pii:

Materials offer ongoing assessments:

ii. Assessments provide sufficient guidance to teachers for interpreting student performance and suggestions for follow-up.

Evidence Collection:

Review assessments to see if the provided guidance can be used to assess the full meaning of the Standards being assessed.

Review assessments to see if they provide sufficient guidance for the teacher to fully interpret student performance.

Review assessments to see if they provide follow-up steps/suggestions for the teacher.

Review assessments to see if provided guidance is easily understood.

Discussion points for Cluster Meeting:

Where did I find examples in the materials to show how provided guidance was used to score assessments?

Where did I find information on how to interpret the information gathered from provided guidance?

Were there suggestions for follow-up with students?

How can I show how I know the provided guidance can be easily understood and is specific enough to show true understanding and learning?

Scoring:

2 points:

- Materials include sufficient guidance for teachers.
- Materials provide quality suggestions for follow-up.
- Provided guidance can be used to assess the Standards to their full intent.
- Quality guidance for the teacher to interpret assessment data is provided.

1 point:

- Some guidance provided is too broad and could lead to multiple interpretations of the assessments.

- Some guidance for follow-up suggestions is provided.
- Some of the provided guidance can be used to assess the Standards to their full intent.
- Some guidance for interpretation of assessment data is provided.

0 points:

- No/minimal guidance is provided.
- No/minimal guidance for teachers to interpret assessment data and/or follow-up is provided.
- Guidance provided is so vague or overly broad that it is not helpful.

Indicator 3q:

Materials encourage students to monitor their own progress.

Evidence Collection:

Review materials to see if/how they encourage students to monitor their own progress.

Discussion points for Cluster Meeting:

What examples/ strategies can I provide to show that the materials encourage students to monitor their own progress?

Scoring:

Note: No score is given for indicator 3q (monitor own progress). Only qualitative evidence is provided.

Guidance for Indicators 3r-3y: Differentiated Instruction

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

Indicator 3r:

Materials provide teachers with strategies to help sequence or scaffold lessons so that the content is accessible to all learners.

Evidence Collection:

Be specific about strategies or materials provided for differentiated instruction. There must be more than a statement at the beginning of the chapter or lesson that is generic or states that the same strategy could be used with every lesson.

Variance in presenting the lessons is noted as it would apply to meeting the needs of a range of learners.

Collect evidence of multiple entry points for lessons and/or specific problems with multiple entry points. Problems with multiple entry points are provided and balanced with problems with one solution or one entry point.

Collect evidence of problems with multiple solutions. Representations are provided for teachers and students.

Discussion Points for Cluster Meeting:

How is the instruction differentiated, and what does it look like in lessons or in problems?

Review the teacher's guide, assessments, and other materials to find all possible places where instructional supports are noted.

What is the difference between materials that are provided specifically for differentiated instruction or the materials that are general notes about what "could be" implemented?

Scoring:

2 points:

- The materials provide strategies or differentiation while maintaining rigor, coherence and focus.

1 point:

- The materials provide some strategies or differentiation while maintaining rigor, coherence and focus.
- Some general statements or strategies about differentiation are noted.

0 points:

- The materials do not provide for differentiated instruction.

- The materials give lower course level lessons or provide the same strategy for each lesson.

Indicator 3s:

Materials provide teachers with strategies for meeting the needs of a range of learners.

Evidence Collection:

Be specific about strategies or materials provided for differentiated instruction. There must be more than a statement at the beginning of the chapter or lesson that is generic or states that the same strategy could be used with every lesson.

Variance in presenting the lessons is noted as it would apply to meeting the needs of a range of learners.

Collect evidence of multiple entry points for lessons and/or specific problems with multiple entry points. Problems with multiple entry points are provided and balanced with problems with one solution or one entry point.

Collect evidence of problems with multiple solutions. Representations are provided for teachers and students.

Discussion Points for Cluster Meeting:

How is the instruction differentiated, and what does it look like in lessons or in problems?

Review the teacher's guide, assessments, and other materials to find all possible places where instructional supports are noted.

What is the difference between materials that are provided specifically for differentiated instruction or the materials that are general notes about what "could be" implemented?

Scoring:

2 points:
- Specific strategies to meet the needs of all learners are included.

1 point:
- Some general strategies to meet the needs of all learners are included.

0 points:
- There are few, or no, general strategies to meet the needs of all learners included.

Indicator 3t:

Materials embed tasks with multiple entry-points that can be solved using a variety of solution strategies or representations.

Evidence Collection:

Be specific about strategies or materials provided for differentiated instruction. There must be more than a statement at the beginning of the chapter or lesson that is generic or states that the same strategy could be used with every lesson.

Variance in presenting the lessons is noted as it would apply to meeting the needs of a range of learners.

Collect evidence of multiple entry points for lessons and/or specific problems with multiple entry points. Problems with multiple entry points are provided and balanced with problems with one solution or one entry point.

Collect evidence of problems with multiple solutions. Representations are provided for teachers and students.

Discussion Points for Cluster Meeting:

How is the instruction differentiated, and what does it look like in lessons or in problems?

Review the teacher's guide, assessments, and other materials to find all possible places where instructional supports are noted.

What is the difference between materials that are provided specifically for differentiated instruction or the materials that are general notes about what "could be" implemented?

Scoring:

2 points:

- The structure of lessons is flexible and balanced, and it would be easy to adjust the order or to scaffold presentation for learners.
- Many examples of problems with multiple entry points and problems with multiple solutions or representations are present.

1 point:

- Rigid structure of lessons makes it difficult to adjust the order or to scaffold presentation for learners.
- There are some examples of problems with multiple entry points or problems with multiple solutions or representations.

0 points:

- Rigid structure of lessons prohibits adjusting the order or scaffolding presentation for learners.
- There are few, or no, examples of multiple entry point problems or problems with multiple solutions or representations.

Indicator 3u:

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).

Evidence Collection:

Include evidence of differentiation for all special populations (ELL, other special populations).

Materials should include specific strategies for support, accommodations, or modifications within the lesson or the problems.

Vocabulary or concepts may include scaffolding for teachers to present the materials.

Discussion Points for Cluster Meeting:

What are the needs of special populations? How can problems be modified to ensure work is on course level but accessible to special populations of students?

What materials would help teachers provide lessons and concepts to help support these students?

Scoring:

2 points:

- Materials provide support for ELL students or other populations.

1 point:

- Materials provide some support for ELL students or other populations.
- Some general statements about ELL students are provided, or a few strategies are provided at the beginning of a chapter or at one place in the book.

0 points:

- Materials provide very little, if any, support for ELL students or other populations.

Indicator 3v:

Materials provide support for advanced students to investigate mathematics content at greater depth.

Evidence Collection:

Collect examples of advanced students working at a greater depth with a standard—not just more problems or problems from higher-level courses.

Note any areas in the lessons or problems where advanced work is substituted for the on-course level work.

Discussion Points for Cluster Meeting:

What are the needs of advanced populations of students?

How can on-course level concepts/problems be investigated at a greater depth and not replaced by above course-level work?

Scoring:

2 points:

- Materials provide multiple opportunities for advanced students to investigate the course-level mathematics at a greater depth.
- 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.
- Materials provide course level problems — problems are not at a greater depth for advanced students.
- 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.
- There are many instances of advanced students simply doing more problems than their classmates.

Indicator 3w:

Materials provide a balanced portrayal of various demographic and personal characteristics.

Evidence Collection:

Collect examples of various demographic and personal characteristics throughout the chapters.

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

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.

Discussion Points for Cluster Meeting:

How would the materials balance demographics and personal characteristics in the materials?

What grouping strategies would you expect to find in the materials?

How could materials balance whole group, small group, and individual instruction?

Do materials demonstrate home language connections and cultural connections?

Scoring:

Note: No score is given for indicator 3w (balanced portrayal). Only qualitative evidence is provided.

Indicator 3x:

Materials provide opportunities for teachers to use a variety of grouping strategies.

Evidence Collection:

Collect examples of various demographic and personal characteristics throughout the chapters.

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

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.

Discussion Points for Cluster Meeting:

How would the materials balance demographics and personal characteristics in the materials?

What grouping strategies would you expect to find in the materials?

How could materials balance whole group, small group, and individual instruction?
Do materials demonstrate home language connections and cultural connections?

Scoring:

Note: No score is given for indicator 3x (grouping strategies). Only qualitative evidence is provided.

Indicator 3y:

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

Evidence Collection:

Collect examples of various demographic and personal characteristics throughout the chapters.

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

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.

Discussion Points for Cluster Meeting:

How would the materials balance demographics and personal characteristics in the materials?

What grouping strategies would you expect to find in the materials?

How could materials balance whole group, small group, and individual instruction?
Do materials demonstrate home language connections and cultural connections?

Scoring:

Note: No score is given for indicator 3y (home language and culture). Only qualitative evidence is provided.

Guidance for Indicators 3z-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 3z:

Materials integrate technology such as interactive tools, virtual manipulatives/objects, and/or dynamic mathematics software in ways that engage students in the Mathematical Practices.

Evidence Collection:

Are videos, virtual manipulatives, interactive tools, and/or games available to students?

How do any relevant materials engage students in “doing” math?

Determine alignment to the course-level content standards and Mathematical Practices.

Discussion Points for Cluster Meeting:

Be able to explain the strategy/reasoning used as you collected evidence for this indicator.

Be able to share any generalizations formulated while reviewing course-level materials, with specific examples (resources/page numbers noted) to support the generalizations.

Scoring:

Note: This indicator is not scored. Only qualitative evidence is provided.

Indicator 3aa:

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:

Are any instructional technology resources web-based and compatible with multiple internet browsers?

Are materials accessible on both Windows and Apple platforms?

Do student resources (including assistive technology for students with disabilities) work on tablets and other mobile devices as well as PCs?

Discussion Points for Cluster Meeting:

Be able to explain the strategy/reasoning used as you collected evidence for this indicator.

Be able to share any generalizations formulated while reviewing course-level materials, with specific examples (resources/page numbers noted) to support the generalizations.

Scoring:

Note: This indicator is not scored. Only qualitative evidence is provided.

Indicator 3ab:

Materials include opportunities to assess student mathematical understandings and knowledge of procedural skills using technology.

Evidence Collection:

Determine if online assessments are available. Are these adaptive (questions change based on student answers) or fixed form (same questions for all students)?

Are teachers able to create their own assessments (i.e., selecting from a bank of items and/or objectives)?

Do assessment items assess both mathematical understanding and procedural skill/fluency? How?

Discussion Points for Cluster Meeting:

Be able to explain the strategy/reasoning used as you collected evidence for this indicator.

Be able to share any generalizations formulated while reviewing course-level materials, with specific examples (resources/page numbers noted) to support the generalizations.

Scoring:

Note: This indicator is not scored. Only qualitative evidence is provided.

Indicator 3ac:

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:

Are teachers able to manipulate or construct learning experiences for students?

Can digital materials be differentiated based on individual students' needs?

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

Discussion Points for Cluster Meeting:

Be able to explain the strategy/reasoning used as you collected evidence for this indicator.

Be able to share any generalizations formulated while reviewing course-level materials, with specific examples (resources/page numbers noted) to support the generalizations.

Scoring:

Note: This indicator is not scored. Only qualitative evidence is provided.

Indicator 3ac:

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:

Are teachers able to manipulate or construct learning experiences for students?

Can digital materials be differentiated based on individual students' needs?

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

Discussion Points for Cluster Meeting:

Be able to explain the strategy/reasoning used as you collected evidence for this indicator.

Be able to share any generalizations formulated while reviewing course-level materials, with specific examples (resources/page numbers noted) to support the generalizations.

Scoring:

Note: This indicator is not scored. Only qualitative evidence is provided.

Indicator 3ad:

Materials include or reference technology that provides opportunities for teachers and/or students to collaborate with each other (e.g. websites, discussion groups, webinars, etc.).

Evidence Collection:

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

Discussion Points for Cluster Meeting:

Be able to explain the strategy/reasoning used as you collected evidence for this indicator.

Be able to share any generalizations formulated while reviewing course-level materials, with specific examples (resources/page numbers noted) to support the generalizations.

Scoring:

Note: This indicator is not scored. Only qualitative evidence is provided.