Assessment Evaluation Tool (AET)

Mathematics, Grades K–12

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

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

The AET draws directly from the following documents:

- Common Core State Standards for Mathematics (www.corestandards.org/Math)
- Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_K-8_Spring_2013_FINAL1.pdf), and Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_HS_Spring_2013_FINAL1.pdf).

When to use the AET

1. Purchasing assessments: Many factors go into local purchasing decisions. Alignment to the Standards is a critical factor to consider. This tool is designed to evaluate alignment of assessments and sets of assessments to the Shifts and the major features of the CCSS. It also provides suggestions of additional indicators to consider in the assessment evaluation and purchasing process.
2. Evaluating assessments in use: The AET can be used to analyze the degree of alignment of existing assessments and sets of assessments and help to highlight specific, concrete flaws in alignment. Even where assessments currently in use fail to meet one or more of these criteria, the pattern of failure is likely to be informative. States and districts can use the evaluation to create a thoughtful plan to modify assessments and sets of assessments in such a way that they better meet the requirements of the Standards.
3. Developing assessments: This tool can be used to provide guidance for and evaluation of alignment for creating locally developed assessments and sets of assessments. States and districts creating new aligned assessments and sets of assessments should use the criteria within the AET to guide the development of test blueprints, item specifications, and item review.

Who Uses the AET

The AET is designed for use by educators and administrators including content specialists, assessment specialists, administrators and educators at the school, district or state level. The AET is designed for use by educators and administrators including content specialists, assessment specialists, administrators and educators at the school, district or state level. Evaluating assessments and sets of assessments requires both subject-matter and technical expertise. Evaluators should be well versed in the Standards (www.corestandards.org/Math) for all grades in which assessments are being evaluated. This includes understanding the Major Work of the grade (www.achievethecore.org/focus) and the widely applicable pre-requisites in high school (www.achievethecore.org/prerequisites), the Supporting and Additional work, how the content fits into the progressions in the Standards (www.achievethecore.org/progressions), and the expectations of the Standards with respect to conceptual understanding, procedural skill and fluency, and application. Evaluators also should be familiar with the substantial instructional Shifts (http://www.corestandards.org/other-resources/key-shifts-in-mathematics/) of Focus, Coherence and Rigor that are listed above.

Getting Started

Prior to Evaluation

Assemble all of the materials necessary for the evaluation, e.g., test blueprints, item specifications, operational forms, test items, metadata for those items, score reports, etc. It is essential for evaluators to have materials for all grades covered by the assessment program, as some criteria cannot be rated without having access to each grade. In addition, each evaluator should have a reference copy of the Common Core State Standards for Mathematics and the Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013), and the Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013).

Sections 1–3 below should be completed to produce a comprehensive picture of the alignment to the Shifts and major features of the CCSSM for the assessments under evaluation. Information about areas in need of improvement should be shared with internal and external stakeholders.

Navigating the Tool

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

- The Non-Negotiable Alignment Criteria must each be met in full for assessments to be considered aligned to the Shifts and the major features of the Common Core State Standards. Each Non-Negotiable Alignment Criterion has one or more metrics associated with it; every one of these metrics must be met in order for the criterion as a whole to be met.
- Examine the relevant assessments and use evidence to rate the materials against each criterion and its associated metric(s).
- Record and explain the evidence upon which the rating is based.

Continue to Section 2: Alignment Criteria (p. 14)

- The Alignment Criteria must each be met for assessments to be considered aligned to the Shifts and major features of the Common Core State Standards. Each Alignment Criterion has one or more metric associated with it; a specific number of these metrics must be met or partially met in order for the criterion as a whole to be met.
- Examine the assessments in relation to these criteria, assigning each metric a point value. Rate the criterion as "Meets" or "Does Not Meet" based on the number of points assigned. The more points the assessments receive on the Alignment Criteria, the better they are aligned.
- Record and explain the evidence upon which the rating is based.

Complete Section 3: Evaluation Summary (p. 34)

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

Proceed to Section 4: Indicators of Quality (p. 36)

- Indicators of Quality are important considerations that will help evaluators better understand the overall quality of an assessment program. These considerations are not criteria for alignment to the CCSS, but they provide valuable information about additional program characteristics, such as ensuring accessibility for all students. Evaluators may want to add their own indicators to the examples provided.

Directions for Non-Negotiable 1

Focus on Major Work

Non-Negotiable 1: The large majority of points in each grade K–8 are devoted to the Major Work of the grade, and the majority of points in each high school course are devoted to widely applicable prerequisites.

Required Materials

- Test blueprints and operational forms
- "Focus by Grade Level" (achievethecore.org/focus) and the widely applicable prerequisites for postsecondary work (achievethecore.org/prerequisites).
- Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013, pp. 8) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_K-8_Spring_2013_FINAL1.pdf)
- Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013, pp. 7) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_HS_Spring_2013_FINAL1.pdf)
- Common Core State Standards for Mathematics (corestandards.org/wp-content/uploads/Math_Standards.pdf)

Rating this Criterion

The metric will be rated as Meets or Does Not Meet/Insufficient Evidence. If the metric is rated as Does Not Meet/Insufficient Evidence, then the assessments fail this Non-Negotiable. If the metrics is rated as Meets, then the assessments pass this Non-Negotiable.

If the metric is rated as Meets, provide specific examples of evidence of this. If the assessment Does Not Meet the metric, include evidence of specific gaps found in the materials. If the materials provide Insufficient Evidence, explain what is missing from the materials or what within the materials is unclear.

Non-Negotiable 1

Focus on Major Work

Metric

NN Metric 1A:
For grades K–8, the assessment or set of assessments for each grade meet or exceed the following percentages:

- 85% or more of the total score points in the assessment(s) for each grade Kindergarten, 1, and 2 align exclusively to the Major Work of the grade.

- 75% or more of the total score points in the assessment(s) for each grade 3, 4, and 5 align exclusively to the Major Work of the grade.

- 65% or more of the total score points in the assessment(s) for each grade 6, 7, and 8 align exclusively to the Major Work of the grade.

For high school, the assessment or set of assessments for each course meet or exceed the following percentage:

50% or more of the total score points in each high school course assessment align to widely applicable prerequisites for postsecondary work.

Procedure for Evaluation

Familiarize yourself with the Major Work of the grade using the "Focus by Grade Level" documents and/or the widely applicable prerequisites using the "Widely Applicable Prerequisites" document.

Evaluate the blueprint or operational form(s) for each grade/course by counting the total number of points aligned to the Major Work of the grade or widely applicable pre-requisites and divide by the total number of points on the test.

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

Evidence

Rating

☐ **Meets**

☐ **Does Not Meet / Insufficient Evidence**

Reviewer Initials: _____ **Title of Assessment:** _____

Non-Negotiable 1

Focus on Major Work

Non-Negotiable 1: The large majority of points in each grade K–8 are devoted to the Major Work of the grade, and the majority of points in each high school course are devoted to widely applicable prerequisites.

Rating for Non-Negotiable 1

If metrics were rated as Meets, then rate Non-Negotiable 1 as Meets. If one or more metrics were rated as Does Not Meet, then rate Non-Negotiable 1 as Does Not Meet. Check the final rating.

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

Rating

☐ **Meets**

☐ **Does Not Meet**

Strengths / Weaknesses:

Before moving to Non-Negotiable 2, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 34.

Directions for Non-Negotiable 2

Freedom from Major Obstacles to Focus

Non-Negotiable 2: No item assesses topics directly or indirectly before they are introduced in the CCSSM.

Required Materials

- Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013, pp. 9) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_K-8_Spring_2013_FINAL1.pdf)
- Common Core State Standards for Mathematics (corestandards.org/wp-content/uploads/Math_Standards.pdf)
- Item specifications and operational forms or a representative sample of at least 20 operational items per grade/course
- "Focus by Grade Level" (achievethecore.org/focus) and the widely applicable prerequisites for postsecondary work (achievethecore.org/prerequisites).

Rating this Criterion

The metric will be rated as Meets or Does Not Meet/Insufficient Evidence. If the metric is rated as Does Not Meet/Insufficient Evidence, then the assessments fail this Non-Negotiable. If the metrics is rated as Meets, then the assessments pass this Non-Negotiable.

If the metric is rated as Meets, provide specific examples of evidence of this. If the assessment Does Not Meet the metric, include evidence of specific gaps found in the materials. If the materials provide Insufficient Evidence, explain what is missing from the materials or what within the materials is unclear.

Reviewer Initials: _____ **Title of Assessment:** _____

Non-Negotiable 2

Freedom from Major Obstacles to Focus

Metric

NN Metric 2A:
100% of items on the assessment(s) assess knowledge of topics when they are introduced in the CCSSM.

Commonly misaligned topics include, but are not limited to:

- Probability, including chance, likely outcomes, probability models. (Introduced in the CCSSM in grade 7)
- Statistical distributions, including center, variation, clumping, outliers, mean, median, mode, range, quartiles; and statistical association or trends, including two-way tables, bivariate measurement data, scatter plots, trend line, line of best fit, correlation. (Introduced in the CCSSM in grades 6–8; see CCSSM for specific expectations by grade level.)
- Similarity, congruence, or geometric transformations. (Introduced in the CCSSM in grade 8)
- Symmetry of shapes, including line/reflection symmetry, rotational symmetry. (Introduced in the CCSSM in grade 4)

Procedure for Evaluation

Evaluate item specifications to see if content limits specify that the commonly misaligned topics listed in the metric are not assessed in grades prior to the grade introduced in the CCSSM.

Evaluate operational form(s) or a representative sample of at least 20 operational items per grade/course looking for commonly misaligned topics prior to the grade levels introduced by the CCSSM.

For context, read Criterion #2 in the Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013).

Evidence

Rating

☐ **Meets**

☐ **Does Not Meet / Insufficient Evidence**

Reviewer Initials: _____ **Title of Assessment:** _____

Non-Negotiable 2

Freedom from Major Obstacles to Focus

Non-Negotiable 2: No item assesses topics directly or indirectly before they are introduced in the CCSSM.

Rating for Non-Negotiable 2

If the metric was rated as Meets, then rate Non-Negotiable 2 as Meets. If metric was rated as Does Not Meet, then rate Non-Negotiable 2 as Does Not Meet. Check the final rating.

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

Rating

☐ **Meets**

☐ **Does Not Meet**

Strengths / Weaknesses:

Before moving to Non-Negotiable 3, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 34.

Directions for Non-Negotiable 3

Test Items Reflect the Coherence of the Standards

Non-Negotiable 3: Test items elicit direct, observable evidence of the degree to which a student can independently demonstrate the targeted Standard(s), reflecting the coherence of the CCSSM.

Required Materials

- Test blueprints and operational forms or a representative sample of at least 20 operational items per grade/course
- Metadata accompanying the items, showing the alignment of each question to the CCSS
- Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013, pp. 13) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_K-8_Spring_2013_FINAL1.pdf)
- Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013, pp. 11 and 16) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_HS_Spring_2013_FINAL1.pdf)
- Common Core State Standards for Mathematics (http://corestandards.org/wp-content/uploads/Math_Standards.pdf)
- "Focus by Grade Level" (achievethecore.org/focus) and the widely applicable prerequisites for postsecondary work (achievethecore.org/prerequisites).

Rating this Criterion

Each metric will be rated as Meets or Does Not Meet/Insufficient Evidence. If any metric is rated as Does Not Meet/Insufficient Evidence, then the assessments fail this Non-Negotiable. If all metrics are rated as Meets, then the assessments pass this Non-Negotiable.

If the metric is rated as Meets, provide specific examples of evidence of this. If the assessment Does Not Meet the metric, include evidence of specific gaps found in the materials. If the materials provide Insufficient Evidence, explain what is missing from the materials or what within the materials is unclear.

Reviewer Initials: _____ **Title of Assessment:** _____

Non-Negotiable 3

Test Items Reflect the Coherence of the Standards

Metric

NN Metric 3A:
Items exhibit alignment to the CCSSM for the grade or course by directly reflecting the language of individual Standards. All, or nearly all, items aligned to a single Standard should assess the central concern of the Standard in question.

Procedure for Evaluation

Evaluate operational form(s) or a representative sample of at least 20 operational items for each grade/course to check the alignment to the Standards for Mathematical Content. NOTE: An example of evaluating this metric might include ensuring that items aligned to 6.EE.A.3 put an emphasis on applying properties of operations and generating equivalent expressions, not just mechanically simplifying.

Evidence

Rating

☐ **Meets**

☐ **Does Not Meet / Insufficient Evidence**

Non-Negotiable 3

Test Items Reflect the Coherence of the Standards

Metric

NN Metric 3B:
Assessments exhibit alignment to the CCSSM for that grade or course: Operational forms for each grade/course include items that directly assess multiple levels of the content hierarchy (i.e. standard, cluster, and domain).

Procedure for Evaluation

Evaluate blueprints or operational form(s) for each grade/course to see if one or more items assess at the cluster, domain, or grade level.

For context, read Criterion #6 in the Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013) and Criterion #4 in the Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013).

Evidence

Rating

☐ **Meets**

☐ **Does Not Meet / Insufficient Evidence**

Non-Negotiable 3

Test Items Reflect the Coherence of the Standards

Non-Negotiable 3: Test items elicit direct, observable evidence of the degree to which a student can independently demonstrate the targeted Standard(s), reflecting the coherence of the CCSSM.

Rating for Non-Negotiable 3

If metrics were rated as Meets, then rate Non-Negotiable 3 as Meets. If one or more metrics were rated as Does Not Meet, then rate Non-Negotiable 3 as Does Not Meet. Check the final rating.

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

Rating

☐ **Meets**

☐ **Does Not Meet**

Strengths / Weaknesses:

Before moving to Alignment Criterion 1, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 34.

Now continue by evaluating Alignment Criterion 1 for Rigor and Balance.

Directions for Alignment Criterion 1

Rigor and Balance

Alignment Criterion 1: The Standards set expectations for attention to all three aspects of rigor: conceptual understanding, procedural skill and fluency, and applications. Thus, assessments must reflect the balances in the Standards and help students meet the Standards' rigorous expectations.

Required Materials

- Test blueprints and operational forms or a representative sample of at least 20 operational items per grade/course
- Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013, pp. 12-14) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_K-8_Spring_2013_FINAL1.pdf)
- Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013, pp. 9-10) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_HS_Spring_2013_FINAL1.pdf)
- Common Core State Standards for Mathematics (http://corestandards.org/wp-content/uploads/Math_Standards.pdf)

Rating this Criterion

Each metric will be rated as Meets (2 points), Partially Meets (1 point) or Does Not Meet (0 points). The ratings on those metrics are combined to form a Meets/Does Not Meet judgment for each criterion as a whole based on the number of minimum points required for each criterion. In order for this Alignment Criterion to be rated as Meets, the materials must receive at least 5 out of 6 points. Each metric is important and therefore no individual metric can be rated as Does Not Meet for the materials to be considered aligned to the Shifts and major features of the CCSSM. The more points the materials receive on the Alignment Criterion, the better they are aligned.

Alignment Criterion 1

Rigor and Balance

Metric

AC Metric 1A: Balanced Assessment of Conceptual Understanding

Standards requiring conceptual understanding are explicitly listed in the blueprint(s) and assessed to ensure students have met these expectations.

(K–High School): At least 20% of the total points on the set of assessments for each grade or course explicitly require students to demonstrate conceptual understanding of key mathematical concepts, especially where called for in specific content Standards or cluster headings.

Procedure for Evaluation

Evaluate operational form(s) for each grade/course. Identify the items or parts of items that explicitly assess conceptual understanding, and add up those score points. Determine whether the sum represents at least 20% of the total points on the test. NOTE: Many of the items assessing these Standards should focus on conceptual understanding:
3.NF.A.1, 6.RP.A.2, 7.NS.A.1, A-REI.D.10

If operational form(s) are not available, this analysis may be done with test blueprints.

For context, read Criterion #4 in the Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013) and Criterion #2 in the Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013).

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Reviewer Initials: _____ **Title of Assessment:** _____

Alignment Criterion 1

Rigor and Balance

Metric

AC Metric 1B: Balanced Assessment of Procedural Skill and Fluency

Standards requiring students to fluently compute are explicitly listed in the blueprint(s) and assessed to ensure students have met these expectations.

(K–High School): At least 20% of the total points on the set of assessments for each grade or course explicitly assess procedural skill and fluency.

Procedure for Evaluation

Evaluate operational form(s) for each grade/course. Identify the items that explicitly address fluency and/or procedural skill, and add the points for those items. Determine whether the sum represents at least 20% of the total points on the test. NOTE: These Standards should be assessed with an expectation for fluency at the appropriate grade level:
3.OA.C.7, 4.NBT.B.4, 5.NBT.B.5, 6.NS.B.2

If operational forms are not available, this analysis can be done with test blueprints.

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Reviewer Initials: _____ **Title of Assessment:** _____

Alignment Criterion 1

Rigor and Balance

Metric

AC Metric 1C: Balanced Assessment of Application

Standards requiring students to solve contextual problems are explicitly listed in the blueprint(s) and assessed to ensure students have met these expectations.

(K–5): At least 20% of the total points on the set of assessments for each grade explicitly assess solving single- or multi-step word problems.

(6–8): At least 25% of the total points on the set of assessments for each grade explicitly assess solving single- and multi-step word problems and simple models.

(High School): At least 30% of the total points on the set of assessments for each high school course explicitly assess single- and multi-step word problems, simple models, and substantial modeling/application problems.

Procedure for Evaluation

Evaluate the operational form(s) for each grade/course. Identify the items that explicitly address applications, and add the points for those items. Determine whether the sum represents at least 20% of the total points on the test. NOTE: Many of the items assessing these Standards should focus on application:
1.OA.A.2, 4.OA.A.3, 7.EE.B.3, A-REI.B.4

If operational forms are not available, this analysis can be done with test blueprints.

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Alignment Criterion 1

Rigor and Balance

Alignment Criterion 1: The Standards set expectations for attention to all three aspects of rigor: conceptual understanding, procedural skill and fluency, and applications. Thus, assessments must reflect the balances in the Standards and help students meet the Standards' rigorous expectations.

Rating for Alignment Criterion 1

Materials must earn at least 5 out of 6 points to meet Alignment Criterion 1. If materials earn fewer than 5 points, the criterion has not been met. Check the final rating.

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

Rating

____ **Total (6 points possible)**

☐ **Meets**

☐ **Does Not Meet**

Strengths / Weaknesses:

Before moving to Alignment Criterion 2, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 34.

Directions for Alignment Criterion 2

Emphasize the Progressions

Alignment Criterion 2: Assessments reflect the grade-by-grade progressions in the Standards.

Required Materials

- Operational forms or a representative sample of at least 20 operational items per grade/course
- Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013, pp. 12) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_K-8_Spring_2013_FINAL1.pdf)
- Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013, pp. 12) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_HS_Spring_2013_FINAL1.pdf)
- Common Core State Standards for Mathematics (http://corestandards.org/wp-content/uploads/Math_Standards.pdf)

Rating this Criterion

Meets (2 points), Partially Meets (1 point) or Does Not Meet (0 points). The ratings on those metrics are combined to form a Meets/Does Not Meet judgment for each criterion as a whole based on the number of minimum points required for each criterion. In order for this Alignment Criterion to be rated as Meets, the materials must receive at least 7 out of 8 points. Each metric is important and therefore no individual metric can be rated as Does Not Meet for the materials to be considered aligned to the Shifts and major features of the CCSSM. The more points the materials receive on the Alignment Criterion, the better they are aligned.

Reviewer Initials: _____ **Title of Assessment:** _____

Alignment Criterion 2

Emphasize the Progressions

Metric

AC Metric 2A: Directly Reflect the Progressions

All, or nearly all, items exhibit alignment to the CCSSM for that grade or course by reflecting the progressions in the Standards. For example, multiplication and division items in grade 3 emphasize equal groups, with no rate problems (rate problems are grade 6 in CCSS).

Procedure for Evaluation

Evaluate operational form(s) for each grade/course or evaluate the same representative sample of operational items from Non-Negotiable 3A. Determine whether each item does or does not reflect the progressions. Count the number of items that do reflect the progressions to evaluate whether all or nearly all items reflect the progressions.

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

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Alignment Criterion 2

Emphasize the Progressions

Metric

AC Metric 2B: Assessing Basic Content

Assessments include questions, tasks, and prompts about the basic content of the grade or course that are no more difficult than the Standards require.

Procedure for Evaluation

Evaluate operational form(s) for each grade/course or evaluate the same representative sample of operational items from Non-Negotiable 3A. Approximately 25% of items should be as easy as possible and consistent with the requirement of the Standards (e.g., $\frac{1}{2}+\frac{1}{3}$ is no more difficult than what 5.NF.A.1 requires).

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Reviewer Initials: _____ **Title of Assessment:** _____

Alignment Criterion 2

Emphasize the Progressions

Metric

AC Metric 2C: The numbers across each set of assessments are grade appropriate.

The items used across a grade/course reflect the full range of number systems expected in each grade/course.

Procedure for Evaluation

Evaluate operational form(s) for each grade/course or evaluate the same representative sample of operational items from Non-Negotiable 3A to determine whether each set of assessments reflects the full range of number systems expected at that grade/course. NOTE: Some examples to look for in evaluating this metric include items involving fractions greater than 1 in grade 3 and arithmetic and algebra items in the middle grades that use the rational number system, not just the integers.

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Alignment Criterion 2

Emphasize the Progressions

Metric

AC Metric 2D: Offering Coherent Representations

Where models are used, they are used consistently across grades and courses.

Procedure for Evaluation

Evaluate operational form(s) for each grade/course or evaluate the same representative sample of operational items from Non-Negotiable 3A to determine whether representations are used consistently across grades and courses. NOTE: Some examples to look for in evaluating this metric include the following: area models are used for multiplication of whole numbers and fractions in grades 3–6, number line models are used for representing order and magnitude of numbers in each grade 2–8, etc.

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Alignment Criterion 2

Emphasize the Progressions

Alignment Criterion 2: Assessments reflect the grade-by-grade progressions in the Standards.

Rating for Alignment Criterion 2

Materials must earn at least 7 out of 8 points to meet Alignment Criterion 2. If materials earn fewer than 7 points, the criterion has not been met. Check the final rating.

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

Rating

____ **Total (8 points possible)**

☐ **Meets**

☐ **Does Not Meet**

Strengths / Weaknesses:

Before moving to Alignment Criterion 3, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 34.

Directions for Alignment Criterion 3

Standards for Mathematical Practice

Alignment Criterion 3: The Standards require mathematical practices to be connected with mathematical content. Thus, assessments should demonstrate authentic connections between content Standards and practice Standards.

Required Materials

- Test blueprints and operational forms or a representative sample of at least 20 operational items per grade/course
- Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013, pp. 12-14) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_K-8_Spring_2013_FINAL1.pdf)
- Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013, pp. 12-14) (http://achievethecore.org/publisherscriteria-math-hs)
- Common Core State Standards for Mathematics (http://corestandards.org/wp-content/uploads/Math_Standards.pdf)

Rating this Criterion

Each metric will be rated as Meets (2 points), Partially Meets (1 point) or Does Not Meet (0 points). The ratings on those metrics are combined to form a Meets/Does Not Meet judgment for each criterion as a whole based on the number of minimum points required for each criterion. In order for this Alignment Criterion to be rated as Meets, the materials must receive at least 5 out of 6 points. Each metric is important and therefore no individual metric can be rated as Does Not Meet for the materials to be considered aligned to the Shifts and major features of the CCSSM. The more points the materials receive on the Alignment Criterion, the better they are aligned.

Alignment Criterion 3

Standards for Mathematical Practice

Metric

AC Metric 3A: Aligning to the Standards for Mathematical Practice

All or nearly all alignments to practice Standards are accurate.

Procedure for Evaluation

Evaluate operational form(s) for each grade/course or evaluate the same representative sample of operational items from Non-Negotiable 3A to check the alignment to the Standards for Mathematical Practice. NOTE: Some examples to look for when evaluating this metric might include the following: a highly scaffolded problem should not be aligned to MP.1; a problem that directs a student to use a calculator should not be aligned to MP.5; and a problem about merely extending a pattern should not be aligned to MP.8.

For context, read Criterion #7 in the Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013) and Criterion #5 in the Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013).

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Reviewer Initials: _____ **Title of Assessment:** _____

Alignment Criterion 3

Standards for Mathematical Practice

Metric

AC Metric 3B: Addressing Every Standard for Mathematical Practice

The set of assessments for each grade or course assesses every Standard for Mathematical Practice at least once.

Procedure for Evaluation

Examine test blueprints to determine whether or not each Standard for Mathematical Practice is assessed in each grade/course. NOTE: There is no requirement to have an equal balance among the Standards for Mathematical Practice.

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Reviewer Initials: _____ **Title of Assessment:** _____

Alignment Criterion 3

Standards for Mathematical Practice

Metric

AC Metric 3C: Expressing Mathematical Reasoning

There are multiple items in the set of assessment(s) for each grade or course that explicitly assess expressing and/or communicating mathematical reasoning.

Procedure for Evaluation

Examine operational form(s) for each grade/course and count the number of items requiring students to express/communicate mathematical reasoning.

For context, read Criterion #10 in the Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013) and Criterion #8 in the Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013).

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Alignment Criterion 3

Standards for Mathematical Practice

Alignment Criterion 3: The Standards require mathematical practices to be connected with mathematical content. Thus, assessments should demonstrate authentic connections between content Standards and practice Standards.

Rating for Alignment Criterion 3

Materials must earn at least 5 out of 6 points to meet Alignment Criterion 3. If materials earn fewer than 5 points, the criterion has not been met. Check the final rating.

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

Rating

____ **Total (6 points possible)**

☐ **Meets**

☐ **Does Not Meet**

Strengths / Weaknesses

Before moving to Alignment Criteria 4, record the final Meets or Does Not Meet rating in the Evaluation Summary on Page 34.

Directions for Alignment Criterion 4

Supporting Focus

Alignment Criterion 4: The assessment program supports the focus of the Standards by connecting concepts and presenting score report information in a manner that highlights the emphasis of the grade or course.

Required Materials

- Test blueprints and operational forms or a representative sample of at least 20 operational items per grade/course
- Score reports or score report documentation
- Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013, pp. 10) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_K-8_Spring_2013_FINAL1.pdf)
- Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013, pp. 8) (http://www.corestandards.org/wp-content/uploads/Math_Publishers_Criteria_HS_Spring_2013_FINAL1.pdf)
- Common Core State Standards for Mathematics (http://corestandards.org/wp-content/uploads/Math_Standards.pdf)

Rating this Criterion

Each metric will be rated as Meets (2 points), Partially Meets (1 point) or Does Not Meet (0 points). The ratings on those metrics are combined to form a Meets/Does Not Meet judgment for each criterion as a whole based on the number of minimum points required for each criterion. In order for this Alignment Criterion to be rated as Meets, the materials must receive at least 3 out of 4 points. Each metric is important and therefore no individual metric can be rated as Does Not Meet for the materials to be considered aligned to the Shifts and major features of the CCSSM. The more points the materials receive on the Alignment Criterion, the better they are aligned.

Alignment Criterion 4

Supporting Focus

Metric

AC Metric 4A: Supporting Focus - Items

In grades K-8, assessment of Supporting Clusters enhances focus and coherence simultaneously by engaging students in the Major Work of the grade. In each grade, at least 50% of items aligned to Supporting Clusters simultaneously engage students in the Major Work of the grade.

In high school, assessments support focus by including items at a level of sophistication suitable to high school that involve application of knowledge and skills of key takeaways from grades 6-8.

Procedure for Evaluation

For grades K-8, examine at least 20 items aligned to Standards from Supporting Clusters for each grade and calculate the percentage of items sampled that simultaneously engage students in the Major Work of the grade.

For high school, examine operational forms for application items at a level of sophistication suitable to high school that involve key takeaways from grades 6-8.

For context, read Criterion #3 in the Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K–8 (Spring 2013) and Table 1 on Page 8 of the Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013), specifically the column titled "Applying Key Takeaways from Grades 6–8".

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Reviewer Initials: _____ **Title of Assessment:** _____

Alignment Criterion 4

Supporting Focus

Metric

AC Metric 4B: Supporting Focus – Score Reports

All score report information, including subscores, supporting text, and performance level descriptors, highlight the focus of the assessment(s) for each grade/course. They give instructionally valuable data and provide information about progress toward college and career readiness.

Procedure for Evaluation

Examine a score report or documentation about reporting to ensure that the score reports highlight both focus and college and career readiness.

Evidence

Rating

- ☐ **Meets (2)**
- ☐ **Partially Meets (1)**
- ☐ **Does Not Meet (0)**

Reviewer Initials: _____ **Title of Assessment:** _____

Alignment Criterion 4

Supporting Focus

Alignment Criterion 4: The assessment program supports the focus of the Standards by connecting concepts and presenting score report information in a manner that highlights the emphasis of the grade or course.

Rating for Alignment Criterion 4

Materials must earn at least 3 out of 4 points to meet Alignment Criterion 4. If materials earn fewer than 3 points, the criterion has not been met. Check the final rating.

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

Rating

____ **Total (4 points possible)**

☐ **Meets**

☐ **Does Not Meet**

Strengths / Weaknesses:

Move to the Evaluation Summary on the following page to record the final Meets or Does Not Meet rating.

AET Evaluation Summary 1 of 2

Mathematics, Grades K–12

Title of Assessment: _____

Publisher: _____

Name of Evaluator(s): _____

Date of Evaluation: _____

Signature of Each Evaluator(s): _____

Non-Negotiable Alignment Criteria

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

Non-Negotiable 1: Focus on Major Work

☐ **Meets**

☐ **Does Not Meet**

Non-Negotiable 2: Freedom from Major Obstacles to Focus

☐ **Meets**

☐ **Does Not Meet**

Non-Negotiable 3: Test Items Reflect the Coherence of the Standards

☐ **Meets**

☐ **Does Not Meet**

Alignment Criteria

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

Alignment Criteria 1: Rigor and Balance

Points: ____ of 6 possible.

(Materials must receive at least 5 of 6 points to align.)

☐ **Meets**

☐ **Does Not Meet**

Alignment Criteria 2: Emphasize the Progression

Points: ____ of 8 possible.

(Materials must receive at least 7 of 8 points to align.)

☐ **Meets**

☐ **Does Not Meet**

Alignment Criteria 3: Standsards for Mathematical Practice

Points: ____ of 6 possible.

(Materials must receive at least 5 of 6 points to align.)

☐ **Meets**

☐ **Does Not Meet**

Alignment Criteria 4: Supporting Focus

Points: ____ of 4 possible.

(Materials must receive at least 3 of 4 points to align.)

☐ **Meets**

☐ **Does Not Meet**

Non-Negotiable Overall:

☐ **Meets**

☐ **Does Not Meet**

Alignment Criteria Overall:

☐ **Meets**

☐ **Does Not Meet**

AET Evaluation Summary 2 of 2

Mathematics, Grades K–12

Title of Assessment: _____

Publisher: _____

Name of Evaluator (s): _____

Date of Evaluation: _____

Signature of Each Evaluator (s): _____

Summary

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

Do the materials meet every Non-Negotiable and Alignment Criteria?

☐ **Yes**

☐ **No**

What are the specific areas of strength and weakness based on this evaluation?
Publishers or those implementing assessment can use this information in order to make improvements and/or improve documentation to account for known gaps in the materials.

Indicators of Quality

Once an evaluation for alignment to the Shifts and major features of the CCSS has been conducted using Sections 1-3, it's important to evaluate for overall quality and best practices. A starting list of Indicators of Quality is suggested below, including critical considerations such as accessibility for all students. States, districts and others evaluating assessment options are encouraged to add to this list to ensure materials respect curricular choices and reflect local contexts. These indicators are designed to apply to assessment programs; and similar indicators are reproduced in the Quality Criteria Checklists, which are used to evaluate individual test questions.

Indicators

Evidence

1. Assessments must provide accessibility to all students, including English learners and students with disabilities: The assessments should be developed in accordance with the principles of universal design and sound testing practice, so that the testing interface, whether paper- or technology-based, does not impede student performance. Allowable accommodations and modifications that maintain the constructs being assessed should be offered where appropriate.

2. Assessments must be valid for required and intended purposes. As appropriate, assessments produce data, including student achievement data and student growth data that can be used to validly inform individual student gains and performance and other purposes such as school effectiveness and improvement.

3. Assessments must be reliable. Assessments minimize error that may distort interpretations of results, describe the precision of the assessments at the cut scores, and are generalizable for the intended purposes.

4. Assessments should be designed and implemented to yield valid and consistent test score interpretations within and across years. Assessment forms yield consistent score meanings over time, forms within year, student groups, and delivery mechanisms (e.g., paper, computer, including multiple computer platforms), and score scales used facilitate accurate and meaningful inferences about test performance.

5. Reflecting Strong Mathematical Content. The assessment items, answer keys, and supporting documentation are free from mathematical errors.

6. Constructing Forms Without Cueing Solution Processes. Item sequences do not cue the student to use a certain solution process during problem solving. Assessment(s) include problems requiring different types of solution processes within the same section.

Indicators of Quality

Indicators

7. Using Grade-Appropriate Presentation. The graphics, diagrams, and wording in each item are appropriate for students at that grade level.

8. Ensuring Forms Have Grade-Appropriate Reading Demands. The form as a whole (including directions, stimuli, items, etc.) has grade-appropriate readability levels.

9. Clear Scoring Materials and Procedures. For open-ended items, there are clear rubrics with exemplars that are valid for all possible solution paths. The procedure to use these materials to score student work is clear.

10. Calling for Variety in Student Work. Forms give many opportunities for students to produce a variety of responses. For example, items require students to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc. (Refer also to Criterion #9 in the Publishers' Criteria for the Common Core State Standards for Mathematics, Grades K-8 (Spring 2013) and Criterion #7 in the Publishers' Criteria for the Common Core State Standards for Mathematics, High School (Spring 2013).)

11. Utilizing a Variety of Ways to Present the Content. Items on operational forms present mathematical content in a variety of ways so that students must thoughtfully engage with various application contexts, mathematical representations, and structures of equations.

Evidence

Reviewer Initials: _____ **Title of Assessment:** _____