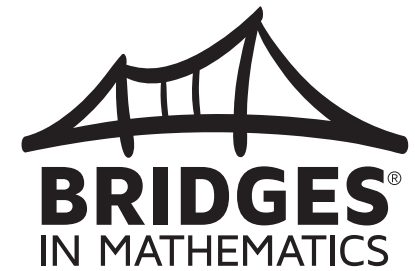




Bridges in Mathematics & Number Corner Second Edition Common Core State Standards Correlations



In Kindergarten, instructional time should focus on two critical areas:

- (1) representing and comparing whole numbers, initially with sets of objects;
- (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

(1) Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals; and modeling simple joining and separating situations with sets of objects, or eventually with equations such as $5 + 2 = 7$ and $7 - 2 = 5$. (Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required.) Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.

(2) Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

From the Common Core State Standards for Mathematics 2010

Kindergarten Overview

Counting & Cardinality

- A. Know number names and the count sequence.
- B. Count to tell the number of objects.
- C. Compare numbers.

Operations & Algebraic Thinking

- A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Number & Operations in Base Ten

- A. Work with numbers 11–19 to gain foundations for place value.

Measurement & Data

- A. Describe and compare measurable attributes.
- B. Classify objects and count the number of objects in categories.

Geometry

- A. Identify and describe shapes.
- B. Analyze, compare, create, and compose shapes.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



Bridges in Mathematics & Number Corner Second Edition

Common Core State Standards Correlations (continued)

COUNTING & CARDINALITY

A. Know number names and the count sequence.

K.CC.1: Count to 100 by ones and by tens.

Unit 1: M1–S1, S2, S3, S3-WP1E, S4, S5

Unit 2: M3–S1, S2

Unit 3: M1–S1

Unit 4: M1–S1, S2, S3, S3-WP4A M3–S1, S2 M4–S2-HC

Unit 5: M1–S4 M2–S1

Unit 6: M1–S1, S2-HC, S3, S4, S5-HC M2–S1, S5-HC M3–S1, S4

Unit 7: M1–S1, S2, S3, S4 M2–S1, S2, S3 M4–S1, S4, S5

Unit 8: M1–S5-HC M2–S1, S4, S4-WP8E

Sep: CC, DS, NL

Feb: DS, NL

Oct: CC, DS, NL

Mar: DS, NL

Nov: DS, NL

Apr: DS, NL

Dec: CC, DS, NL

May: DS, NL

Jan: DS, NL

K.CC.2: Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Unit 3: M2–S4, S5-HC M3–S1, S2, S3, S4, S5 M4–S1, S2, S3, S4, S5

Unit 4: M1–S1, S2, S3, S3-WP4A M2–S1, S2, S2-HC, S2-WP4B, S3, S4, S5, S5-WP4C M3–S1, S2, S3, S4, S5
M4–S1, S2, S3, S4, S5, S5-WP4D, S5-WP4E

Unit 5: M1–S2-HC, S5, S5-HC

Unit 6: M1–S2, S3, S4, S5 M2–S2, S3 M3–S2, S3

Unit 8: M1–S1, S2, S2-HC, S3, S4, S5, S5-HC M3–S2, S3

Sep: NL

Feb: CG, CC, NL

Oct: NL

Mar: DS, NL

Nov: NL

Apr: NL

Dec: NL

May: CF, NL

Jan: NL

K.CC.3: Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

Unit 1: M2–S2-HC, S4, S5-HC M3–S3-HC, S6, S6-HC, S6-WP1H M4–S4-HC

Unit 2: M2–S2-HC, S5-HC M4–S2-HC

Unit 3: M2–S2, S2-WP3C, S5-HC M3–S1, S2, S2-HC, S5-HC M4–S5-HC

Unit 4: M1–S4, S5, S5-HC M2–S2-HC M3–S2-HC

Unit 5: M1–S3 M3–S5-HC M4–S1, S5-HC

Unit 6: M2–S5-WP6C M3–S1, S2, S2-HC, S4 M4–S2-HC, S5-HC

Unit 7: M1–S4, S5, S5-WP7B M2–S2, S2-WP7C, S5-HC M3–S2-HC, S3, S5-HC M4–S1, S2, S2-HC, S3, S5-HC

Unit 8: M1–S1, S2, S2-WP8A, S3, S4, S4-WP8B M2–S3, S4, S4-WP8E, S5 M3–S5-HC M4–S1

Sep: NL

Oct: NL

Nov: NL

Dec: NL

Jan: NL

Feb: NL

Mar: NL



Bridges in Mathematics & Number Corner Second Edition

Common Core State Standards Correlations (continued)

COUNTING & CARDINALITY

B. Count to tell the number of objects.

K.CC.4: Understand the relationship between numbers and quantities; connect counting to cardinality.

Unit 4: M3–S3, S4, S5

K.CC.4a: When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

Unit 1: M1–S1, S1-WP1A, S2, S3, S3-WP1E, S4, S5 **M2–S1,** S2, S3, S4, S4, S5 **M3–S1,** S2, S3, S4, S5
Unit 2: M1–S1, S2, S3, S4, S5, S5-WP2A **M2–S1,** S2, S3, S4, S4-WP2B, S5 **M3–S1,** S2, S3-HC, S4, S4-WP2C, S6, S6-WP2D
Unit 3: M1–S1, S2
Unit 4: M2–S1, S2, S2-WP4B, S3, S4, S5, S5-WP4C
Unit 6: M1–S3, S4 **M2–S3,** S3-WP6A, S5, S5-WP6C **M4–S5-HC**

Sep: CC, DS, CF, NL **Feb:** DS
Mar: DS
Oct: CG, CC, DS, CF, NL **Apr:** DS
May: DS
Nov: CC, DS, CF
Dec: CC, DS, CF
Jan: CC, DS

K.CC.4b: Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

Unit 1: M1–S1, S2, S3, S4, S5 **M2–S1,** S2, S3, S4, S4, S5 **M3–S1,** S2, S3, S4, S5
Unit 2: M1–S1, S2, S2-HC, S3, S4, S5, S5-WP2A **M2–S1,** S2, S3, S4, S4-WP2B, S5 **M3–S1,** S2
Unit 3: M1–S1, S2, S4, S5, S5-WP3A **M2–S1,** S1-WP3B, S2, S2-WP3C **M3–S5** **M4–S3**
Unit 4: M2–S1, S2, S2-WP4B, S3, S4, S5, S5-WP4C
Unit 6: M1–S3, S4 **M2–S3,** S3-WP6A, S5, S5-WP6C **M4–S5-HC**

Sep: CC, DS, CF, NL **Feb:** DS
Mar: DS
Oct: CG, CC, DS, CF, NL **Apr:** DS
May: DS
Nov: CC, DS, CF
Dec: CC, DS, CF
Jan: CC, DS, CF

K.CC.4c: Understand that each successive number name refers to a quantity that is one larger.

Unit 1: M1–S5 **M3–S1,** S2, S3, S4, S5
Unit 2: M3–S1, S2
Unit 3: M4–S1
Unit 6: M3–S1, S2
Unit 8: M3–S2

Sep: DS, CF **Jan:** CG, NL
Oct: CG, DS, CF, NL **Feb:** CG, NL
Apr: NL
Nov: NL
Dec: CF, NL

K.CC.5: Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.

Unit 1: M1–S3, S4, S5 **M2–S1,** S2, S2-HC, S3, S4, S4, S5-HC **M3–S1,** S2, S3, S3-HC, S4, S5, S5-WP1C, S6-HC **M4–S2-HC**
Unit 2: M1–S1, S2, S2-HC, S3, S4, S5, S5-HC, S5-WP2A **M2–S1,** S2, S2-HC, S3, S4, S4-WP2B, S5, S5-HC
M3–S1, S2, S3-HC, S5, S6, S6-WP2D **M4–S2-HC**
Unit 3: M1–S1, S2, S2-HC, S4, S5, S5-HC, S5-WP3A **M2–S1,** S1-WP3B, S2, S2-HC, S2-WP3C, S4, S5 **M3–S1,** S2, S2-HC, S3, S4-WP3D, S5, S5-HC
Unit 4: M1–S2-HC **M2–S3,** S4, S5, S5-HC, S5-WP4C
Unit 6: M1–S3, S4 **M2–S5,** S5-WP6C **M3–S1,** S2, S3, S3-WP6D **M4–S1,** S3, S4, S5, S5-HC
Unit 7: M1–S4, S5, S5-WP7B **M2–S1,** S2, S2-WP7C, S3, S4, S4-WP7D, S5-HC **M3–S1,** S2 **M4–S2,** S2-HC, S3, S4
Unit 8: M1–S5, S5-WP8C **M2–S3** **M4–S1,** S4

Sep: CC, CF
Oct: CC, DS, CF
Nov: CC, CF
Dec: CC, DS
Jan: CC
Feb: CG, CF
Mar: CG, CF



COUNTING & CARDINALITY

C. Compare numbers.

K.CC.6: Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects.)

<p>Unit 1: M1–S1-WP1A, S2, S3, S4, S5 M3–S4, S5, S5-WP1H Unit 2: M1–S4, S5, S5-HC, S5-WP2A M3–S3, S4, S4-WP2C, S6, S6-HC, S6-WP2D Unit 3: M3–S3, S4-WP3D, S5-HC M4–S1, S2, S2-HC, S3 Unit 4: M3–S1, S2-HC, S3, S4, S5 M4–S2-HC Unit 5: M1–S3, S4, S5, S5-WP5A M2–S1, S2, S3, S4 M3–S1, S1-WP5C, S2, S2-WP5D, S3, S3-WP5E, S4, S5, S5-WP5F M4–S1 Unit 6: M1–S3, S4, S5 M2–S5-HC M3–S1, S2, S3, S3-WP6D Unit 7: M2–S3, S4, S4-WP7D M3–S1, S2 M4–S2-HC, S3 Unit 8: M1–S5, S5-WP8C M2–S1, S2, S2-HC, S2-WP8D M3–S1, S4, S5</p>	<p>Oct: CC Dec: CC Jan: CC, NL Feb: CG Mar: CC, NL Apr: CC May: CC</p>
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K.CC.7: Compare two numbers between 1 and 10 presented as written numerals.

<p>Unit 1: M1–S3, S4, S5 Unit 3: M4–S3, S5-HC Unit 4: M1–S4, S5, S5-HC Unit 5: M1–S3 Unit 6: M1–S5, S5-HC M3–S5 Unit 7: M2–S2, S2-WP7C, S5 M4–S1, S2, S3</p>	<p>Jan: NL Mar: NL</p>
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Bridges in Mathematics & Number Corner Second Edition

Common Core State Standards Correlations (continued)

OPERATIONS & ALGEBRAIC THINKING

A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

K.OA.1: Represent addition and subtraction with objects, fingers, mental images, drawings (drawings need not show details, but should show the mathematics in the problem), sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

<p>Unit 2: M1–S1, S2 M2–S5 M3–S1 Unit 3: M1–S1, S2, S3, S4, S5, S5-HC, S5-WP3A M2–S1, S2, S2-HC, S3, S4, S5 M3–S1, S2, S2-HC, S5, S5-WP3E Unit 4: M2–S1, S2, S2-WP4B, S3, S4, S5, S5-HC, S5-WP4C M4–S1, S2, S3, S4, S5, S5-WP4D Unit 5: M1–S5-HC Unit 6: M1–S2 M3–S2-HC M4–S1, S2, S3, S4, S5, S5-HC Unit 7: M1–S5-HC M2–S2-HC, S5-HC M3–S1, S2, S3, S4, S5 M4–S3 Unit 8: M1–S1, S2, S2-WP8A, S3, S4, S4-WP8B, S5-HC M2–S3, S4, S4-WP8E M4–S2, S3</p>	<p>Dec: DS, CF Jan: CG, DS, CF Feb: CC, CF Mar: CG, CC, CF Apr: CC, CF May: CG, CC, CF</p>
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K.OA.2: Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

<p>Unit 2: M3–S3-HC Unit 3: M2–S2, S2-HC, S5-HC M3–S2, S4 Unit 4: M2–S2, S3, S4, S5, S5-HC, S5-WP4C M4–S5-HC Unit 6: M1–S2 M3–S3, S3-WP6D M4–S1, S2, S3, S4, S5 Unit 7: M1–S5-HC M2–S5-HC M3–S1, S2, S2-HC, S3, S4, S5, S5-HC M4–S5-HC Unit 8: M1–S1, S2, S2-WP8A, S3, S4, S4-WP8B M2–S2-HC, S3, S5-HC M3–S2, S2-HC, S3 M4–S1, S2, S2-HC</p>	<p>Jan: CG Feb: CC, CF Mar: CG, CC, CF Apr: CC, CF May: CG, CC</p>
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K.OA.3: Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).

<p>Unit 1: M2–S1, S2, S3, S4, S4-WP1F, S5 M3–S4, S5, S5-WP1G Unit 2: M1–S1, S2, S3, S5-HC M2–S1, S2-HC, S5, S5-HC M3–S3, S4, S4-WP2C, S5, S6, S6-HC, S6-WP2D Unit 3: M1–S1, S2, S4, S5, S5-WP3A M2–S1, S1-WP3B, S2, S4 M3–S1, S2 M4–S4, S5, S5-WP3F Unit 5: M1–S4, S5, S5-WP5A Unit 6: M2–S5, S5-WP6C M3–S3, S3-WP6D M4–S1, S2, S3, S4, S5 Unit 7: M1–S4 M3–S5, S5-HC Unit 8: M1–S1, S2, S2-WP8A, S4, S4-WP8B, S5-HC M2–S5 M3–S5 M4–S1, S2, S3</p>	<p>Oct: CC, CF Mar: CC, CF Nov: CF Apr: CC Dec: CF May: CC, CF Jan: CG, CF Feb: CC</p>
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K.OA.4: For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

<p>Unit 2: M1–S3 Unit 3: M2–S1 M3–S5 M4–S4, S5, S5-WP3F Unit 5: M3–S3, S3-WP5E Unit 6: M3–S5 Unit 7: M3–S1, S2 Unit 8: M1–S1, S3 M2–S2-HC, S5 M3–S5 M4–S1</p>	<p>Sep: CF Mar: CG, DS, NL Oct: DS Apr: DS, NL Nov: DS May: DS, CF Jan: DS Feb: DS, CF</p>
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K.OA.5: Fluently add and subtract within 5.

<p>Unit 4: M2–S2-HC M3–S5-HC M4–S2-HC Unit 6: M2–S5, S5-WP6C M3–S2-HC M4–S2 Unit 7: M2–S2-HC M3–S1, S2, S5, S5-HC M4–S5-HC Unit 8: M1–S1, S2, S2-WP8A, S3, S4, S4-WP8B M3–S2-HC M4–S2-HC, S3</p>	<p>Feb: CC Mar: CC Apr: CC May: CF</p>
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Bridges in Mathematics & Number Corner Second Edition

Common Core State Standards Correlations (continued)

NUMBER & OPERATIONS IN BASE TEN

A. Work with numbers 11-19 to gain foundations for place value.

K.NBT.1: Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Unit 6: M1–S3, S4 M3–S1, S2, S4, S5, S5-HC

Unit 7: M1–S4, S5, S5-WP7B M2–S1, S2, S2-WP7C, S3, S4, S4-WP7D M4–S1, S2, S2-HC, S3, S4, S5-HC

Unit 8: M1–S2-HC, S5, S5-WP8C M2–S4, S4-WP8E M3–S1, S2, S2-HC, S3, S4, S5, S5-HC M4–S2-HC

Sep: CC

Oct: CC

Nov: CC

Dec: CC, DS

Jan: CC

Feb: NL

MEASUREMENT & DATA

A. Describe and compare measurable attributes.

K.MD.1: Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

Unit 3: M3–S3, S4-WP3D

Unit 4: M1–S1 M3–S1, S2, S3, S4, S5, S5-HC

Unit 7: M1–S1, S2, S2-HC, S3, S3-WP7A M3–S2-HC

Unit 8: M2–S1, S2, S2-WP8D, S4, S4-WP8E

Apr: CG

K.MD.2: Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.

Unit 1: M1–S1-WP1A

Unit 3: M3–S3, S4-WP3D

Unit 4: M3–S1, S2, S2-HC, S3, S4, S5

Unit 7: M1–S1, S2, S2-HC, S3, S3-WP7A

Unit 8: M2–S1, S2, S2-WP8D, S4, S4-WP8E

Nov: CC

Apr: CG

B. Classify objects and count the number of objects in each category.

K.MD.3: Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.)

Unit 1: M1–S1, S2, S3, S4, S5 M2–S4, S4-WP1C, S5 M3–S6, S6-WP1H

Unit 2: M3–S3, S4

Unit 4: M4–S1, S2, S2-WP4D, S5, S5-WP4D

Unit 5: M1–S1, S2, S3, S5-HC M2–S1, S2, S3, S4, S5-HC M3–S1, S1-WP5C, S2, S2-HC, S2-WP5D, S3, S3-WP5E M4–S1

Unit 6: M1–S1, S5 M2–S4, S4-WP6B, S5-HC

Unit 7: M1–S1, S2, S2-HC, S3, S3-WP7A

Unit 8: M2–S2-HC

Oct: CC

Dec: CC

Jan: CC

Mar: CC

Apr: CG, CC

May: CC



Bridges in Mathematics & Number Corner Second Edition

Common Core State Standards Correlations (continued)

GEOMETRY

A. Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

K.G.1: Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

Unit 1: M1–S1-WP1B, S1-WP1C, S2, S2-WP1D Unit 2: M4–S1, S2, S3, S4, S4-HC, S4-WP2E Unit 5: M1–S1, S2, S2-HC M2–S1, S2, S2-HC, S3, S4, S5, S5-WP5B M3–S1, S1-WP5C, S2, S2-HC, S2-WP5D, S3, S3-WP5E, S4, S5, S5-WP5F M4–S1, S2, S3, S4, S5 Unit 6: M1–S1, S2, S2-HC, S5 M2–S1, S2, S2-HC, S4, S4-WP6B	Sep: CG Oct: CG Nov: CG, NL Dec: CG, CC, NL
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K.G.2: Correctly name shapes regardless of their orientations or overall size.

Unit 1: M1–S2-WP1D Unit 2: M4–S3, S4, S4-HC, S4-WP2E Unit 5: M1–S1, S2 M2–S1, S2, S3, S4, S5, S5-WP5B M3–S1, S1-WP5C, S2, S2-WP5D, S3, S3-WP5E, S4, S5, S5-HC, S5-WP5F M4–S1, S2, S3, S4, S5 Unit 6: M1–S1, S5 M2–S1, S2, S2-HC, S3, S3-WP6A, S4, S4-WP6B, S5-HC	Sep: CG Nov: CG
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K.G.3: Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Unit 5: M1–S2 M2–S1, S3, S4, S5, S5-WP5B M3–S1, S1-WP5C, S2, S2-WP5D M4–S1, S2, S3, S4 Unit 6: M1–S1, S2, S5 M2–S1, S2, S2-HC, S4, S4-WP6B	Sep: CG Nov: CG
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B. Analyze, compare, create, and compose shapes.

K.G.4: Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).

Unit 1: M1–S1-WP1B, S1-WP1C, S2-WP1D Unit 2: M4–S1, S2 Unit 5: M1–S1, S2 M2–S1, S2, S2-HC, S3, S4, S5, S5-HC, S5-WP5B M3–S1, S1-WP5C, S4, S5, S5-HC, S5-WP5F M4–S1, S2, S2-HC, S3, S4, S5 Unit 6: M1–S1, S2, S3, S5 M2–S1, S2, S2-HC, S3, S3-WP6A, S4, S4-WP6B	Sep: CG Nov: CG
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K.G.5: Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

Unit 3: M1–S3 Unit 5: M1–S2, S2-HC M2–S5, S5-WP5B M3–S1, S1-WP5C, S3, S3-WP5E M4–S1, S5-HC Unit 6: M1–S3, S4 M2–S1, S2, S3, S3-WP6A, S4, S4-WP6B	Nov: CG
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K.G.6: Compose simple shapes to form larger shapes. For example, “can you join these two triangles with full sides touching to make a rectangle?”

Unit 1: M1–S1-WP1B Unit 2: M4–S1, S2, S3, S4, S4-HC, S4-WP2E Unit 5: M3–S2, S2-HC, S2-WP5D, S4, S5, S5-WP5F M4–S1, S4, S5	
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Bridges in Mathematics & Number Corner Second Edition

Common Core State Standards Correlations (continued)

MATHEMATICAL PRACTICES

1. Make sense of problems and persevere in solving them.

K.MP.1: Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

Unit 2: M4–S3, S4

Unit 3: M1–S1, S2 M3–S2, S5 M4–S4, S5

Unit 4: M3–S1, S2

Unit 5: M2–S5 M3–S4, S5 M4–S1, S2, S3

Unit 6: M1–S1 M3–S1, S2

Unit 7: M3–S1, S2, S3, S4

Unit 8: M1–S1, S2

Oct: DS

Nov: DS

Mar: CG

Apr: CF

May: CG, CF

2. Reason abstractly and quantitatively.

K.MP.2: Mathematically proficient students make sense of the quantities and their relationships in problem situations. Students bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

Unit 1: M1–S5

Unit 3: M2–S1, S2 M3–S1, S4 M4–S1, S2, S3

Unit 4: M1–S1, S2, S3, S4, S5

Unit 5: M1–S3, S4, S5

Unit 6: M1–S2, S5 M2–S5 M3–S1, S2, S3, S4, S5 M4–S1, S2, S3, S4, S5

Unit 7: M1–S4, S5 M2–S1, S2, S3, S4, S5 M3–S5 M4–S1, S2, S3, S4, S5

Unit 8: M1–S4, S5 M2–S5 M3–S1, S2, S3 M4–S1, S3

Sep: CC

Oct: CC

Nov: CC, CF

Dec: CC, DS, CF

Jan: CG, CC, DS, CF

Feb: CC, CF

Mar: CG, CC, CF

Apr: CC

May: CC



MATHEMATICAL PRACTICES

3. Construct viable arguments and critique the reasoning of others.

K.MP.3: Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

Unit 2: M1–S2, S3 M2–S1 M3–S4 M4–S2

Unit 5: M4–S2

Unit 7: M4–S1

Unit 8: M4–S3

Oct: CG

Nov: DS

Mar: CG, NL

Apr: CF

May: CG, NL

4. Model with mathematics.

K.MP.4: Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

Unit 3: M1–S1, S2, S3, S4 M3–S2, S5

Unit 5: M2–S3

Unit 6: M3–S3

Unit 8: M1–S1, S2, S3, S4 M4–S1, S2

Sep: DS

Nov: CG

Dec: CF

Jan: CG

Feb: CF

Mar: CC, CF

Apr: CG, CC, DS

May: CC, DS



MATHEMATICAL PRACTICES

5. Use appropriate tools strategically.

K.MP.5: Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

Unit 1: M1–S1, S2
Unit 2: M2–S2, S3, S4, S5
Unit 7: M1–S1, S2, S3 M3–S1, S2, S3, S4, S5
Unit 8: M2–S1, S2, S4

Apr: CG, CF
May: CG

6. Attend to precision.

K.MP.6: Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

Unit 1: M1–S1, S2, S3, S4, S5 M2–S1, S2, S3, S4, S5 M3–S1, S2, S3, S4, S5, S6 M4–S1, S2, S3, S4
Unit 2: M1–S1, S3, S4, S5 M3–S1, S2, S3, S6
Unit 3: M3–S1, S3
Unit 4: M2–S1, S2, S3, S4, S5 M3–S1, S2, S3, S4, S5
Unit 5: M1–S1, S2, S3 M2–S5 M4–S4
Unit 6: M2–S1, S3
Unit 7: M2–S1, S2, S5
Unit 8: M2–S1, S2 M4–S4, S5

Dec: CG, CC
Jan: CC
Feb: CG, NL
Mar: NL
Apr: NL



MATHEMATICAL PRACTICES

7. Look for and make use of structure.

K.MP.7: Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y .

Unit 1: M1–S3, S4 M2–S1, S2, S3, S4, S5 M3–S1, S2, S3, S4, S5, S6 M4–S1, S2, S3, S4
Unit 2: M1–S1, S2, S3, S4, S5 M2–S1, S2, S3, S4, S5 M3–S1, S2, S5, S6 M4–S1, S2
Unit 3: M1–S4, S5 M2–S1, S2, S3, S4, S5 M3–S4 M4–S1, S2, S3
Unit 4: M1–S1, S2, S3, S4, S5 M2–S1, S2, S3, S4, S5 M3–S3, S4, S5 M4–S1, S2, S3, S4, S5
Unit 5: M1–S1, S2, S4, S5 M2–S1, S2, S3, S4 M3–S1, S2, S3, S4, S5 M4–S1, S4, S5
Unit 6: M1–S1, S3, S4, S5 M2–S1, S2, S3, S4, S5 M3–S5 M4–S1, S2, S3, S4, S5
Unit 7: M1–S1, S2, S3, S4, S5 M2–S3, S4 M4–S1, S2, S3, S4, S5
Unit 8: M2–S3 M3–S5 M4–S2, S5

Sep: CG, CF, NL
Oct: CG, DS, CF, NL
Nov: CG, DS, NL
Dec: CG, DS, NL
Jan: CG, DS, NL
Feb: CG, DS, NL
Mar: DS, NL
Apr: CG, NL
May: NL

8. Look for and express regularity in repeated reasoning.

K.MP.8: Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Unit 2: M3–S3, S4, S5 M4–S1, S2, S3, S4
Unit 3: M2–S3, S4, S5 M4–S4, S5
Unit 4: M4–S1, S2, S3, S4, S5
Unit 5: M2–S1, S2, S4 M4–S5
Unit 6: M1–S2 M3–S4
Unit 8: M1–S3, S5 M2–S3, S4, S5 M3–S1, S2, S3, S5 M4–S3

Sep: CG, CC, DS, CF, NL
Oct: CG, CC, CF, NL
Nov: CC, CF, NL
Dec: CF, NL
Jan: CF, NL
Feb: CC, DS, NL
Mar: DS, NL
Apr: DS, NL
May: DS, CF, NL