

# Bridges Grade 4 Correlations to NCTM Curriculum Focal Points

## NUMBER AND OPERATIONS AND ALGEBRA

### Developing quick recall of multiplication facts & related division facts and fluency with whole number multiplication

Students use understandings of multiplication to develop quick recall of the basic multiplication facts and related division facts. They apply their understanding of models for multiplication (i.e., equal-sized groups, arrays, area models, equal intervals on the number line), place value, and properties of operations (in particular, the distributive property) as they develop, discuss, and use efficient, accurate, and generalizable methods to multiply multi-digit whole numbers. They select appropriate methods and apply them accurately to estimate products or calculate them mentally, depending on the context and numbers involved. They develop fluency with efficient procedures, including the standard algorithm, for multiplying whole numbers, understand why the procedures work (on the basis of place value and properties of operations), and use them to solve problems.

Focal Points	Bridges	Number Corner	Bridges Supplement	Assessments
Apply with fluency multiplication facts to 12 times 12 and related division facts.	Unit 1, Sessions 11, 13-17 Unit 1, pages 64, 72, 92, 105, 116 (Home Connections 4, 5, 6, 8, 9) Unit 3, Sessions 13-14	September–October Number Line October–May Computational Fluency December Problem Solving February Calendar Collector Number Corner Student Book, pages 6–7, 9–10, 15–16, 22–23, 25–26, 28–29, 34–35, 65, 85–86, 88, 92	Bridges Practice Book, pages 5, 11, 13, 15, 23, 25, 39, 44, 51, 53, 57, 59, 63, 65, 87, 93, 136	Informal Unit 1, Sessions 8 & 10 (Work Samples) January–March Computational Fluency (Quick Facts) Formal Unit 1, Sessions 7 & 21 (Unit Pre-and Post-Assessments & Student Reflection Sheet) Number Corner Teacher’s Guide, pages 60–63, 97–101, 211–214, 289–292, 365–368 (Baseline Assessment, Checkups 1–4)
Apply understanding of models for multiplication (e.g., equal-sized groups, arrays, area models, equal intervals on the number line), place value, and properties of operations.	Unit 1, Sessions 8, 11-17 Unit 2, Sessions 6-16	September–October Calendar Grid September–November, January–February Number Line Sept–Nov Calendar Collector Oct–Dec Computational Fluency	Set A5 Number & Operations: Multi-Digit Multiplication, Activities 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13 and Independent Worksheets 3, 4	Formal Unit 1, Sessions 7 & 21 (Unit Pre-and Post-Assessments) Unit 2, Sessions 5 & 21 (Unit Pre- and Post Assessments & Student Reflection Sheet)
Develop and use accurate, efficient, and generalizable methods to multiply multi-digit whole numbers.	Unit 2, Sessions 11, 14, 15, 16		Set A5 Number & Operations: Multi-Digit Multiplication, Activities 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13 and Independent Worksheets 1, 2, 3, 4, 5, 6, 7, 8	Informal Unit 2, Sessions 14 & 19 (Work Samples) Formal Unit 2, Sessions 5 & 21 (Unit Pre- and Post Assessments & Student Reflection Sheet) Set A5 Number & Operations, Multi-Digit Multiplication, Activities 1 & 14

# Bridges Grade 4 Correlations to NCTM Curriculum Focal Points (cont.)

NUMBER AND OPERATIONS AND ALGEBRA				
Developing quick recall of multiplication facts & related division facts and fluency with whole number multiplication				
Students use understandings of multiplication to develop quick recall of the basic multiplication facts and related division facts. They apply their understanding of models for multiplication (i.e., equal-sized groups, arrays, area models, equal intervals on the number line), place value, and properties of operations (in particular, the distributive property) as they develop, discuss, and use efficient, accurate, and generalizable methods to multiply multi-digit whole numbers. They select appropriate methods and apply them accurately to estimate products or calculate them mentally, depending on the context and numbers involved. They develop fluency with efficient procedures, including the standard algorithm, for multiplying whole numbers, understand why the procedures work (on the basis of place value and properties of operations), and use them to solve problems.				
Focal Points	Bridges	Number Corner	Bridges Supplement	Assessments
Select and use appropriate estimation strategies for multiplication (e.g., use benchmarks, overestimate, underestimate, round) to calculate mentally based on the problem situation when computing with whole numbers.	Unit 2, Sessions 7, 9, 11	December Problem Solving Number Corner Student Book, pages 36, 39, 42	Set A4 Number & Operations: Estimating to Multiply & Divide, Independent Worksheets 1, 2 & 3 Set A5 Number & Operations: Multi-Digit Multiplication, Activities 4, 5, 6, 8, 9, 11, 12 and Independent Worksheets 5, Bridges Practice Book, pages 75, 94, 96, 140	Informal Bridges Practice Book, pages 75, 94, 96, 140
				Formal Set A5 Number & Operations, Multi- Digit Multiplication, Activities 1 & 14
Develop fluency with efficient procedures, including the standard algorithm, for multiplying multi-digit whole numbers and justify why the procedures work on the basis of place value and number properties.	Unit 2, Session 14 (see pages 219–220)	April Problem Solving	Set A5 Number & Operations: Multi- Digit Multiplication, Activities 5, 6, 12, 13 and Independent Worksheets 1, 2, 4, 5, 6, 9 Bridges Practice Book, pages 68, 77, 79, 87, 94, 95, 136	Informal Unit 2, Session 14 (Work Sample)
				Formal Set A5 Number & Operations, Multi- Digit Multiplication, Activity 14
Solve problems involving multi-digit multiplication.	Unit 2, Sessions 6–7, 9, 12, 14, 17–19 Unit 2, pages 163, 244 (Home Con- nections 11 & 17) Unit 2, page 192 (Multiplication Challenge Problems)	November Problem Solving February–April Problem Solving Number Corner Student Book, pages 4, 30, 39, 42, 60, 70, 82, 89, 93, 99, 103	Set A5 Number & Operations: Multi- Digit Multiplication, Activities 2, 4, 9, 13 and Independent Worksheets 1, 3, 5, 9 Bridges Practice Book, pages 74, 80, 89, 116	Informal Unit 2, Session 14 (Work Sample) Bridges Practice Workbook, pages 74, 80, 89, 116
				Formal Unit 1, Session 21 (Unit Post- Assessment) Unit 2, Sessions 5 & 21 (Unit Pre-and Post-Assessments) Number Corner Teacher’s Guide, pages 60–63, 289–292 (Baseline Assessment, Checkup 3) Bridges Supplement Set A5 Number & Operations: Multi-Digit Multiplica- tion, Activities 1 & 14

## Bridges Grade 4 Correlations to NCTM Curriculum Focal Points (cont.)

NUMBER AND OPERATIONS				
Developing an understanding of decimals, including the connection between fractions & decimals				
Students understand decimal notation as an extension of the base-ten system of writing whole numbers that is useful for representing more numbers, including numbers between 0 and 1, between 1 and 2, and so on. Students relate their understanding of fractions to reading and writing decimals that are greater than or less than 1, identifying equivalent decimals, comparing and ordering decimals, and estimating decimal or fractional amounts in problem solving. They connect equivalent fractions and decimals by comparing models to symbols and locating equivalent symbols on the number line.				
Focal Points	Bridges	Number Corner	Bridges Supplement	Assessments
Extend the base-ten system to read, write, and represent decimal numbers (to the hundredths) between 0 and 1, between 1 and 2, etc.)	Unit 6, Sessions 9–20 Unit 6, pages 724, 730 (Home Connections 47, 48)	December Calendar Collector March–May Number Line	Bridges Practice Book, pages 113, 137	Informal Unit 6, Sessions 9–10, 13 (Work Samples)
				Formal Unit 6, Sessions 1 & 22 (Unit Pre- and Post-Assessments & Student Reflection Sheet)
Determine decimal equivalents or approximations of common fractions.	Unit 5, Session 4 Unit 6, Sessions 7–10, 12–14, 18–20 Unit 6, page 715 (Home Connection 46) Unit 8, Session 14	December Calendar Collector March–May Number Line Number Corner Student Book, page 45	Bridges Practice Book, pages 111, 115, 119, 137	Informal Unit 6, Sessions 9–10, 13 (Work Samples)
				Formal Unit 6, Sessions 1 & 22 (Unit Pre- and Post-Assessments & Student Reflection Sheet) Number Corner Teacher's Guide, pages 211–214, 365–369 (Checkups 2 & 4)
Compare and order fractions and decimals.	Unit 6, Sessions 10–11, 14, 18 Unit 6, pages 673, 715, 724 (Home Connections 43, 46, 47)	December Calendar Collector March Calendar Grid April Calendar Collector March–May Number Line	Set A6 Number & Operations: Fractions & Mixed Numbers, Activities 1 & 2 Bridges Practice Book, pages 42, 43, 44, 46, 57, 67, 103, 109, 111, 113, 115, 117, 119, 137	Informal Bridges Practice Book, pages 42, 43, 44, 46, 57, 67, 103, 109, 111, 113, 115, 117, 119, 137
Estimate decimal or fractional amounts in problem solving.	Unit 6, Sessions 19, 21 Unit 8, Sessions 13, 16, 18	December Calendar Collector April Calendar Collector	Set A6 Number & Operations: Fractions & Mixed Numbers, Activities 1 & 2 Set E1 Data Analysis: Probability & Technology, Activities 1 & 2 and Independent Worksheet 1 Bridges Practice Book, pages 109, 117	Informal Bridges Practice Book, pages 109, 117

## Bridges Grade 4 Correlations to NCTM Curriculum Focal Points (cont.)

### NUMBER AND OPERATIONS

#### Developing an understanding of decimals, including the connection between fractions & decimals

Students understand decimal notation as an extension of the base-ten system of writing whole numbers that is useful for representing more numbers, including numbers between 0 and 1, between 1 and 2, and so on. Students relate their understanding of fractions to reading and writing decimals that are greater than or less than 1, identifying equivalent decimals, comparing and ordering decimals, and estimating decimal or fractional amounts in problem solving. They connect equivalent fractions and decimals by comparing models to symbols and locating equivalent symbols on the number line.

Focal Points	Bridges	Number Corner	Bridges Supplement	Assessments
Connect equivalent fractions and decimals by comparing models to symbols and locating equivalent symbols on the number line.	Unit 5, Session 4 Unit 6, Sessions 7–10, 12–14, 18–20 Unit 6, page 715 (Home Connection 46) Unit 8, Session 14	December Calendar Collector March–May Number Line Number Corner Student Book, page 45	Bridges Practice Book, pages 111, 115, 119, 137	Informal Unit 6, Sessions 9–10, 13 (Work Samples)
				Formal Unit 6, Sessions 1 & 22 (Unit Pre- and Post-Assessments & Student Reflection Sheet) Number Corner Teacher's Guide, pages 211–214, 365–369 (Checkups 2 & 4)

### MEASUREMENT

#### Developing an understanding of area and determining the areas of two-dimensional shapes

Students recognize area as an attribute of two-dimensional regions. They learn that they can quantify area by finding the total number of same-sized units of area that cover the shape without gaps or overlaps. They understand that a square that is 1 unit on a side is the standard unit for measuring area. They select appropriate units, strategies (e.g., decomposing shapes), and tools for solving problems that involve estimating or measuring area. Students connect area measure to the area model that they have used to represent multiplication, and they use this connection to justify the formula for the area of a rectangle.

Content Standards	Bridges	Number Corner	Bridges Supplement	Assessments
Recognize area as an attribute of two-dimensional space.	Unit 1, Sessions 4, 5, 6, 19–20 Unit 2, Sessions 4 Unit 2, page 178 (Considering Metric Units of Area Measurement)		Set D5 Measurement: Area in Metric Units, Activity 1 Set D6 Measurement: Area & Perimeter, Activity 1 and Independent Worksheet 1	
Determine area by finding the total number of same-sized units of area that cover a shape without gaps or overlaps.	Unit 1, Sessions 4, 5, 6, 19–20 Unit 2, pages 166–168 (Measuring Objects in the Classroom)	April Calendar Grid	Set D5 Measurement: Area in Metric Units, Activities 1 & 2 Set D6 Measurement: Area & Perimeter, Activity 1	

## Bridges Grade 4 Correlations to NCTM Curriculum Focal Points (cont.)

MEASUREMENT				
Developing an understanding of area and determining the areas of two-dimensional shapes				
Students recognize area as an attribute of two-dimensional regions. They learn that they can quantify area by finding the total number of same-sized units of area that cover the shape without gaps or overlaps. They understand that a square that is 1 unit on a side is the standard unit for measuring area. They select appropriate units, strategies (e.g., decomposing shapes), and tools for solving problems that involve estimating or measuring area. Students connect area measure to the area model that they have used to represent multiplication, and they use this connection to justify the formula for the area of a rectangle.				
Content Standards	Bridges	Number Corner	Bridges Supplement	Assessments
Recognize a square that is one unit on a side as the standard unit for measuring area.	Unit 1, Sessions 6, 19-20 Unit 2, Sessions 4 Unit 2, page 178 (Considering Metric Units of Area Measurement)		Set D5 Measurement: Area in Metric Units, Activity 1 Set D6 Measurement: Area & Perimeter, Activity 1 and Independent Worksheet 1	
Determine the appropriate units, strategies, and tools for solving problems that involve estimating or measuring area, or determining area on the basis of given information.	Unit 1, Sessions 4, 5, 6, 20 Unit 2, Sessions 6 Unit 2, pages 166-168 (Measuring Objects in the Classroom)	January Problem Solving April Calendar Grid April Problem Solving Number Corner Student Book, pages 56, 60, 84, 87, 91	Set D5 Measurement: Area in Metric Units, Activities 1 & 2 and Independent Worksheet 1 Set D6 Measurement: Area & Perimeter, Activities 1, 3, 4 and Independent Worksheets 1 & 2 Bridges Practice Book, pages 20, 64, 80, 88, 130, 138, 140	Informal Bridges Practice Book, pages 20, 64, 80, 88, 130, 138, 140
				Formal Unit 1, Sessions 7 & 21 (Unit Pre-and Post-Assessments & Student Reflection Sheet)
Connect area measure to the area model used to represent multiplication and use this to justify the formula for area of a rectangle.	Unit 1, Sessions 8, 11, 19-20 Unit 1, pages 123-124 (Home Connection 10) Unit 2, Sessions 4, 6	January Problem Solving April Problem Solving Number Corner Student Book, pages 56, 84, 87, 91	Set A5 Number & Operations: Multi-Digit Multiplication, Independent Worksheets 1, 3 Set D5 Measurement: Area in Metric Units, Activities 1 & 2 and Independent Worksheet 1 Set D6 Measurement: Area & Perimeter, Activities 1, 3, 4 and Independent Worksheets 1 & 2 Bridges Practice Book, pages 19, 21, 22, 139	Informal Bridges Practice Book, pages 19, 21, 22, 139
				Formal Unit 2, Sessions 5 & 21 (Unit Pre-and Post-Assessments & Student Reflection Sheet) Number Corner Teacher's Guide, pages 211-214, 282-292 (Checkups 2 & 3)

## Bridges Grade 4 Correlations to NCTM Curriculum Focal Points (cont.)

<b>ALGEBRA</b>				
<b>Students continue identifying, describing, and extending numeric patterns involving all operations and non-numeric growing or repeating patterns. Through these experiences, they develop an understanding of the use of a rule to describe a sequence of numbers or objects.</b>				
Connections	Bridges	Number Corner	Bridges Supplement	Assessments
Identify, describe, and extend numeric patterns involving all operations, and nonnumeric growing or repeating patterns.	Unit 2, Sessions 1–2 Unit 3, Sessions 12, 18 Unit 7, Sessions 1–3, 5–9, 13 Unit 7, pages 793, 800, 853 (Home Connections 50, 51, 54)	September Calendar Collector September–October Calendar Grid December–March Calendar Grid September–March Number Line Number Corner Student Book, page 56	Bridges Practice Book, pages 53, 57, 125, 126, 129, 136	Informal Bridges Practice Book, pages 53, 57, 125, 126, 129, 136
				Formal Unit Pre- and Post-Assessments Unit 7, Sessions 4 & 14
Understand and/or generate a rule to describe a sequence of numbers or objects.	Unit 2, Session 2 Unit 3, sessions 12, 18 Unit 7, Sessions 1–3, 5–9, 13 Unit 7, pages 793, 800, 853 (Home Connections 50, 51, 54)	September Calendar Collector September–October Calendar Grid December–March Calendar Grid	Bridges Practice Book, pages 125, 126, 129	Informal Bridges Practice Book, pages 125, 126, 129
				Formal Unit Pre- and Post-Assessments Unit 7, Sessions 4 & 14
Use a rule to complete a sequence or a table.	Unit 3, Session 12 Unit 7, Sessions 1–3, 5–9, 13 Unit 7, pages 793, 800, 853 (Home Connections 50, 51, 54)	September Calendar Grid September–November Calendar Collector February Calendar Grid Number Corner Student Book, page 66	Bridges Practice Book, page 15, 125, 126, 129	Informal Bridges Practice Book, page 15, 125, 126, 129
				Formal Unit Pre- and Post-Assessments Unit 7, Sessions 4 & 14

# Bridges Grade 4 Correlations to Focal Points Connections

## GEOMETRY

Students extend their understanding of properties of two-dimensional shapes as they find the areas of polygons. They build on their earlier work with symmetry and congruence in grade 3 to encompass transformations, including those that produce line and rotational symmetry. By using transformations to design and analyze simple tilings and tessellations, students deepen their understanding of two-dimensional space.

Connections	Bridges	Number Corner	Bridges Supplement	Assessments
Extend understandings of two-dimensional shapes in conjunction with area, symmetry, and congruence.	Unit 1, Sessions 2–6 Unit 4, Sessions 2, 5–12 Unit 4, page 458 (Home Connection 31)	November Calendar Grid April Calendar Grid	Set C1 Geometry: Parallel, Perpendicular & Intersecting, Activity 1 and Independent Worksheets 1 & 2 Set C2 Geometry: 2- and 3-Dimensional Shapes, Independent Worksheets 1 & 3 Set D6 Measurement: Area & Perimeter, Activities 1, 2, 3 & 4 and Independent Worksheets 1 & 2 Bridges Practice Book, pages 19, 20, 22, 88, 98, 121, 122, 130, 138, 139	Formal Unit Pre- and Post-Assessments Unit 1, Sessions 1 & 21 Unit 4, Sessions 3 & 21
Investigate transformations, including those that produce line and rotational symmetry.	Unit 3, Session 1 Unit 4, Sessions 5–9, 12 Unit 5, Session 14	November Calendar Grid	Set C2 Geometry: 2- and 3-Dimensional Shapes, Independent Worksheet 2	Formal Unit Pre- and Post-Assessments Unit 4, Sessions 3 & 21
Use transformations to design and analyze simple tilings and tessellations.	Unit 4, Session 6			

## MEASUREMENT

As part of understanding two-dimensional shapes, students measure and classify angles.

Connections	Bridges	Number Corner	Bridges Supplement	Assessments
Classify angles.	Unit 4, Sessions 1–2, 4		Set C2 Geometry: 2- and 3-Dimensional Shapes, Independent Worksheet 4	Formal Unit Pre- and Post-Assessments Unit 4, Sessions 3 & 21
Compare angle measures with referent angles of 45 degrees, 90 degrees, and 180 degrees to estimate angle measures.	Unit 1, Sessions 2–3 Unit 4, Sessions 1–2 Formal angle measurement addressed in Bridges, Grade 5, Unit 3.		Set C2 Geometry: 2- and 3-Dimensional Shapes, Independent Worksheets 1, 2 & 4	

## Bridges Grade 4 Correlations to Focal Points Connections (cont.)

DATA ANALYSIS				
Students continue to use tools from grade 3, solving problems by making frequency tables, bar graphs, picture graphs, and line plots. They apply their understanding of place value to develop and use stem-and-leaf plots.				
Connections	Bridges	Number Corner	Bridges Supplement	Assessments
Solve problems by making frequency tables, bar graphs, picture graphs, and line plots.	Unit 5, Sessions 3, 5, 12–13 Unit 7, Sessions 11–12 Unit 7, page 844 (Home Connection 53) Unit 8, Sessions 2–7, 9, 10–11, 16–18	January Calendar Collector February Calendar Collector	Bridges Practice Book, pages 82, 85, 89, 92, 131–134	Formal Unit Pre- and Post-Assessments Unit 5, Sessions 1 & 18 Unit 7, Sessions 4 & 14 Unit 8, Sessions 1 & 19 Number Corner Teacher's Guide, pages 282–294, 365–369 (Checkups 3, 4)
Develop and use stem-and-leaf plots.	Not addressed in Bridges.			

## Bridges Grade 4 Correlations to Focal Points Connections (cont.)

NUMBER AND OPERATIONS				
Building on their work in grade 3, students extend their understanding of place value and ways of representing numbers to 100,000 in various contexts. They use estimation in determining the relative sizes of amounts or distances. Students develop understandings of strategies for multi-digit division by using models that represent division as the inverse of multiplication, as partitioning, or as successive subtraction. By working with decimals, students extend their ability to recognize equivalent fractions. Students' earlier work in grade 3 with models of fractions and multiplication and division facts supports their understand of techniques for generating equivalent fractions and simplifying fractions.				
Connections	Bridges	Number Corner	Bridges Supplement	Assessments
Represent numbers to 100,000 and beyond in various contexts	Unit 2, Session 4	September Calendar Grid September Problem Solving November – January Number Line	Set A3 Number & Operations: Place Value to Millions, Activities 1, 2 & 3, Independent Worksheets 1, 2 & 3 Bridges Practice Book, pages 21, 25, 29	Informal Bridges Practice Book, pages 21, 25, 29
Use estimation in determining the relative sizes of amounts or distances.	Unit 2, Session 5 Unit 8, Sessions 2, 4, 13, 16, 18		Bridges Practice Book, pages 91, 94, 96, 100, 110, 135	
Develop understandings for multi-digit division by using models that represent division as the inverse of multiplication, as partitioning, or as successive subtraction.	Unit 1, Session 10 Unit 2, Sessions 17–18 Unit 3, Session 12–19 Unit 8, Sessions 14, 17–18	November Problem Solving February Problem Solving March Problem Solving April Problem Solving Number Corner Student Book, pages 24, 27, 30, 46, 66, 87, 89, 99, 105–106	Bridges Practice Book, pages 12, 14, 16, 18, 23, 24, 54, 57, 58, 59, 60, 65, 69, 87, 93,	Informal Unit 2, Session 14 (Work Sample) Unit 3, sessions 13 & 17 (Work Samples)
				Formal Unit 1, Sessions 7 & 21 (Unit Pre- and Post-Assessments) Unit 1, pages 54–57 (Individual Interview) Unit 3, Sessions 2 & 20 (Unit Pre- and Post-Assessments & Student Reflection Sheet)
Generate equivalent fractions.	Unit 3, Sessions 3, 6–7, 11 Unit 6, Sessions 2–3	October Calendar Collector March Calendar Grid April Calendar Collector	Set A6 Number & Operations: Fractions, Mixed Numbers & Decimals, Activities 1 & 2 Bridges Practice Book, pages 41, 45, 59	Informal Bridges Practice Book, pages 41, 45, 59
Simplify fractions using common factors.			Set A6 Number & Operations: Fractions, Mixed Numbers & Decimals, Activity 2 Bridges Practice Book, pages 105, 107, 109	Informal Bridges Practice Book, pages 105, 107, 109