# Jasper City Schools

## Fifth Grade Math Pacing Guide

### 9.20.2018

<table>
<thead>
<tr>
<th>1st Nine Weeks</th>
<th>2nd Nine Weeks</th>
<th>3rd Nine Weeks</th>
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<tr>
<td><strong>Topic 1</strong> Place Value</td>
<td><strong>Topic 5</strong> Divide by 2-Digit</td>
<td><strong>Topic 9</strong> Adding and Subtracting Fractions</td>
<td><strong>Topic 15</strong> Classifying Plane Figures</td>
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<tr>
<td>5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and ( \frac{1}{10} ) of what it represents in the place to its left.</td>
<td>5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</td>
<td>5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.</td>
<td><strong>Topic 16</strong> Coordinate Geometry</td>
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<tr>
<td>5.NBT.3 Read, write, and compare decimals to thousandths.</td>
<td>5.NBT.3a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.</td>
<td>5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally, and assess the reasonableness of answers.</td>
<td>5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the</td>
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<tr>
<td>5.NBT.3b Compare two decimals to thousandths based on meanings of the digits in each place, using &gt;, =, and &lt; symbols to record the results of comparisons.</td>
<td><strong>Topic 6</strong> Multiplying Decimals</td>
<td><strong>Topic 10</strong> Adding and Subtracting Mixed Numbers</td>
<td><strong>5.G.3</strong> Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.</td>
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<tr>
<td>5.NBT.4 Use place value understanding to round decimals to any place.</td>
<td>5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</td>
<td>5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing</td>
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<tr>
<td>5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties</td>
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**Topics Covered:**
- Place Value
- Adding and Subtracting Decimals
- Divide by 2-Digit
- Multiplying Decimals
- Adding and Subtracting Fractions
- Classifying Plane Figures
- Coordinate Geometry

**Standards:**
- 5.NBT.1
- 5.NBT.3
- 5.NBT.3a
- 5.NBT.3b
- 5.NBT.4
- 5.NBT.5
- 5.NBT.6
- 5.NBT.7
- 5.NF.1
- 5.NF.2
- 5.G.1
- 5.G.3
- 5.G.4
of operations, and/or
the relationship
between addition and
subtraction; relate the
strategy to a written
method, and explain
the reasoning used.

**Topic 3** Multiplying
Whole Numbers

**5.NBT.2** Explain
patterns in the number
of zeros of the product
when multiplying a
number by powers of
10, and explain patterns
in the placement of the
decimal point when a
decimal is multiplied or
divided by a power of
10. Use whole-number
exponents to denote
powers of 10.

**5.NBT.5** Fluently
multiply multi-
digit whole numbers using
the standard algorithm.

**5.NBT.6** Find whole-
divisor whole numbers,
using strategies based
on place value, the
properties of
operations, and/or the
relationship between
multiplication and
division. Illustrate and
explain the calculation
by using equations,
rectangular arrays,
and/or area models.

**Topic 4** Divide by 1-
Digit

**5.NBT.6** Find whole-
divisor whole numbers,
using strategies based
on place value, the
properties of
operations, and/or the
relationships between
addition and
division; relate the
strategy to a written
method, and explain
the reasoning used.

**Topic 7** Dividing
Decimals

**5.NBT.2** Explain
patterns in the number
of zeros of the product
when multiplying a
number by powers of
10, and explain patterns
in the placement of the
decimal point when a
decimal is multiplied or
divided by a power of
10. Use whole-number
exponents to denote
powers of 10.

**5.NBT.7** Add, subtract,
multiply, and divide
decimals to hundredths,
using concrete models
or drawings and
strategies based on
place value, properties
of operations, and/or
the relationship
between addition and
subtraction; relate the
strategy to a written
method, and explain
the reasoning used.

**Topic 11** Multiplying
and Dividing Fractions
and Mixed Numbers

**5.NF.3** Interpret a
fraction as division of
the numerator by the
denominator (\(a/b = a \div b\)). Solve word problems
involving division of
whole numbers leading
to answers in the form
of fractions or mixed
numbers, e.g., by using
visual fraction models
or equations to
represent the problem.

**5.NF.4** Apply and
extend previous
understandings of
multiplication to
multiply a fraction or
whole number by a
fraction.

**Topic 12** Volume of
Solids

**5.MD.3** Recognize
volume as an attribute
of solid figures, and
understand concepts of
volume measurement.

**5.MD.3a** A cube with
side length 1 unit, called
a "unit cube," is said to
have "one cubic unit" of
volume, and can be
used to measure
volume.

**5.MD.3b** A solid figure
which can be packed
without gaps or
overlaps using n unit
cubes is said to have a
volume of n cubic units.

**5.MD.4** Measure
volumes by counting
unit cubes, using cubic
cm, cubic in, cubic ft,
and improvised units.

**5.MD.5** Relate volume
to the operations of
multiplication and
addition, and solve real-
world and
mathematical problems
involving volume.

**5.MD.5a** Find the
volume of a right
rectangular prism with
| whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. 5.NF.4a Interpret the product \( \left( \frac{a}{b} \right) \times q \) as \( a \) parts of a partition of \( q \) into \( b \) equal parts; equivalently, as the result of a sequence of operations \( a \times q ÷ b \). 5.NF.4b Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. 5.NF.5 Interpret multiplication as scaling (resizing), 5.NF.5a Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. 5.NF.5b Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case), explaining why multiplying a given number by a fraction less than 1 results in a whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. 5.MD.5b Apply the formulas \( V = l \times w \times h \) and \( V = B \times h \) for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems. 5.MD.5c Recognize volume as additive. Find volumes of solid figures composed of two nonoverlapping right rectangular prisms by adding the volumes of the nonoverlapping parts, applying this technique to solve real-world problems. |

**Topic 13* Units of Measure**

5.MD.1 Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving
product smaller than the given number, and relating the principle of fraction equivalence \( \frac{a}{b} = \frac{(n \times a)}{(n \times b)} \) to the effect of multiplying by 1.

5.NF.6 Solve real-world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (Students able to multiply fractions in general can develop strategies to divide fractions in general by reasoning about the relationship between multiplication and division. However, division of a fraction by a fraction is not a requirement at this grade.

5.NF.7a Interpret division of a unit fraction by a nonzero whole number, and compute such quotients.

5.NF.7b Interpret division of a whole number by a unit fraction, and compute such quotients.

5.NF.7c Solve real-world problems involving division of unit

**Topic 14*Data**

5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (\( \frac{1}{2}, \frac{1}{4}, \frac{1}{8} \)). Use operations on fractions for this grade to solve problems involving information presented in line plots.
- Envision Textbook Series

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<tr>
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<th>Topic Covered 2016-2017</th>
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<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Nine Weeks</td>
<td>1, 2, 3, 4,*</td>
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<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Nine Weeks</td>
<td>5, 6, 7, 8,*</td>
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<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Nine Weeks</td>
<td>9, 10, 11,*</td>
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<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; Nine Weeks</td>
<td>12, 13, 14, 15, 16,*</td>
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*Measurement instruction will be ongoing throughout the year (morning work, bell ringers, centers).