

Math Pacing Guides

K - 5

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CLEVELAND CITY SCHOOLS

Kindergarten Math Pacing Guide

The math pacing guide for kindergarten is STANDARDS driven and is formatted to provide consistency in planning and implementing lessons throughout the school year. Every Check for Understanding is included in the guide and suggested current textbook lessons are in bold type. The math textbook is a *primary resource* in teaching the Tennessee State Standards. Teachers are encouraged to use other resources to assist students in mastering each Check for Understanding. A lesson bank is available at each school, which includes additional teaching strategies and resources.

The three-week time increments in this guide have been set as guidelines to assist teachers in their planning and implementation of the Checks for Understanding. The accomplishments have been renamed Checks for Understanding. Differences in teaching styles and student demographics may create variations in the amount of time spent on each skill during a three-week span.

General Math Pacing Guide Information

- Once a Check for Understanding has been taught, continue to review throughout the year. The nine weeks in which a Check for Understanding is tested is indicated by the Kindergarten report card.
- Many of the Checks for Understanding can be taught and reviewed during calendar or morning meeting time.
- Chapters and lessons from the current math textbook will not be taught, sequentially. In addition, not all lessons are included in the pacing guide as they are not a part of the Tennessee State Standards.
- *The state curriculum standards have been updated beginning with the 2009-2010 school year. Please note the changes. They include: dropping some skills, rewording some skills, and adding some skills.*

KINDERGARTEN- Math Pacing Guide For FIRST Grading Period

WEEKS 1-3	STANDARD
	<p>WEEK 1- PHASE-IN <i>Count by 1's and 10's to 50.</i> <i>Write numerals to 25.</i> <i>** The above skills are not listed in our curriculum standards, but are necessary.</i> 0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics. 0.2.3 Count backward from 10 to 1. 0.2.2 Match quantities to 25 with numerals and written words. <i>**The above Checks for Understanding will be taught throughout the year.</i></p> <p>Algebra ✓ 0.3.4 Sort, order and classify objects by attribute and identify objects that do not belong in a particular group. (1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7)</p> <p>Data, Probability and Statistics ✓ 0.5.1 Sort objects into sets and describe how the objects were sorted. (1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7) (Teach with 0.3.4) ✓ 0.5.2 Sort objects in different ways. (1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7) (Teach with 0.3.4)</p> <p>Geometry ✓ 0.4.1 Identify, name and describe a variety of shapes (i.e., circles, squares, triangles, rectangles, hexagons and trapezoids) shown in various positions. (5.1, 5.2) ✓ 0.4.3 Sort plane figures into groups, name and describe the attributes of the shapes (such as number of sides and corners (vertices)). <i>(0.4.1 and 0.4.3 are taught together)</i> (5.1, 5.2) ✓ 0.4.5 Use basic shapes and spatial reasoning to model objects and construct more complex shapes. (5.1, 5.2, 5.4)</p>
WEEKS 4-6	STANDARD
	<p><i>Count by 1's and 10's to 50.</i> <i>Write numerals to 25.</i> <i>** The above skills are not listed in our curriculum standards, but are necessary.</i> 0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics. 0.2.3 Count backward from 10 to 1. 0.2.2 Match quantities to 25 with numerals and written words. <i>**The above Checks for Understanding will be taught throughout the year.</i></p> <p>Number and Operation ✓ 0.2.1 Count objects to 25 using 1 to 1 correspondence and identify the quantity in the counted group. (4.1, 4.2, 4.3, 4.4, 4.5, 7.1, 7.2, 7.3, 7.4)</p>

	<ul style="list-style-type: none"> ✓ 0.2.5 Create a set with a given number of objects. (4.1, 4.2, 4.3, 4.4, 4.5, 7.1, 7.2, 7.3, 7.4) ✓ 0.2.6 Quickly recognize the number of objects in a small set. ✓ 0.2.7 Recognize zero “0” as a set with no objects. (4.5) <p>Geometry</p> <ul style="list-style-type: none"> ✓ 0.4.1 Identify, name and describe a variety of shapes (i.e., circles, squares, triangles, rectangles, hexagons and trapezoids) shown in various positions. (5.1, 5.2) ✓ 0.4.3 Sort plane figures into groups, name and describe the attributes of the shapes (such as number of sides and corners (vertices)). (0.4.1 and 0.4.3 are taught together) (5.1, 5.2) ✓ 0.4.6 Identify positions (such as inside, outside, above, below, on, over, under, near, far, top, middle, bottom, beside, between, forward, backward, left, right) using models, illustrations and stories. (2.1, 2.2, 2.3, 2.4, 2.5)
<p>WEEKS 7-9</p>	<p>STANDARD</p>
	<p><i>Count by 1’s and 10’s to 50.</i> <i>Write numerals to 25.</i> <i>** The above skills are not listed in our curriculum standards, but are necessary.</i> 0.1.9 <i>Use age appropriate books, stories and videos to convey ideas of mathematics.</i> 0.2.3 <i>Count backward from 10 to 1.</i> 0.2.2 <i>Match quantities to 25 with numerals and written words.</i> <i>**The above Checks for Understanding will be taught throughout the year.</i></p> <p>Number and Operation</p> <ul style="list-style-type: none"> ✓ 0.2.1 Count objects to 25 using 1 to 1 correspondence and identify the quantity in the counted group. (7.5, 7.7, 7.8, 4.6, 15.1) ✓ 0.2.5 Create a set with a given number of objects. (7.5, 7.7, 7.8, 4.6, 15.1) ✓ 0.2.9 Order the numbers through 25 using numerals and words. (<i>Determine for yourself if you want to teach ordering by numerals first and words later, or if you want to teach them together. This skill will be repeated in the second nine weeks.</i>) (4.6, 8.2) <p>Algebra</p> <ul style="list-style-type: none"> ✓ 0.3.1 Use a variety of manipulatives (such as connecting cubes, number cards, shapes) to create patterns. (2.7, 2.8, 2.9) ✓ 0.3.2 Name, copy and extend patterns. (2.7, 2.8, 2.9, 5.3) ✓ 0.3.3 Translate simple patterns into rules. (2.7, 2.8, 2.9, 5.3) <p><i>Any extra days may be used for reviewing and/or making-up missed lessons.</i></p>

- **The parenthesis denotes the correlation to the Houghton Mifflin text.**

KINDERGARTEN- Math Pacing Guide For SECOND Grading Period

WEEKS 1-3	STANDARD
	<p><i>Count by 1's and 10's to 50.</i> <i>Write numerals to 25.</i> <i>** The above skills are not listed in our curriculum standards, but are necessary.</i> <i>0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics.</i> <i>0.2.3 Count backward from 10 to 1.</i> <i>0.2.2 Match quantities to 25 with numerals and written words.</i> <i>**The above Checks for Understanding will be taught throughout the year.</i></p> <p>Number and Operation</p> <ul style="list-style-type: none"> ✓ 0.2.1. Count objects to 25 using 1 to 1 correspondence and identify the quantity in the counted group. (15.2, 15.3, 15.4, 15.5, 15.6) ✓ 0.2.5 Create a set with a given number of objects. (15.2, 15.3, 15.4, 15.5, 15.6) ✓ 0.2.9 Order the numbers through 25 using numerals and words. <i>(Determine for yourself if you want to teach ordering by numerals first and words later, or if you want to teach them together. This skill will be repeated in the third nine weeks.)</i> (4.6, 8.2)
WEEKS 4-6	STANDARD
	<p><i>Count by 1's and 10's to 50.</i> <i>Write numerals to 25.</i> <i>** The above skills are not listed in our curriculum standards, but are necessary.</i> <i>0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics.</i> <i>0.2.3 Count backward from 10 to 1.</i> <i>0.2.2 Match quantities to 25 with numerals and written words.</i> <i>**The above Checks for Understanding will be taught throughout the year.</i></p> <p>Number and Operation</p> <ul style="list-style-type: none"> ✓ 0.2.8. Compare sets of 10 or fewer objects and identify which are equal to, more than or less than others. (3.3, 3.4, 3.5) <p>Data Analysis and Probability</p> <ul style="list-style-type: none"> ✓ 0.5.3 Collect and count data. (graphing) (3.5, 3.6, 3.7, 3.8) <p>Geometry</p> <ul style="list-style-type: none"> ✓ 0.4.2 Identify, name and describe three-dimensional shapes. (such as sphere, cube, cone and cylinder) (6.1, 6.2) ✓ 0.4.4. Sort solid figures into groups; name and describe the attributes of the shapes.

	<p>Mathematical Process</p> <ul style="list-style-type: none"> ✓ 0.1.3 Use words to describe time (e.g., day, night, morning, afternoon, yesterday, today, tomorrow). (9.1) ✓ 0.1.5 Recognize a calendar as a way of measuring time. (9.2, 9.4, 16.4) <i>Any extra days may be used for reviewing and/or making-up missed lessons.</i>
WEEKS 7-9	STANDARD
	<p><i>Count by 1's and 10's to 50.</i> <i>Write numerals to 25.</i> <i>** The above skills are not listed in our curriculum standards, but are necessary.</i> <i>0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics.</i> <i>0.2.3 Count backward from 10 to 1.</i> <i>0.2.2 Match quantities to 25 with numerals and written words.</i> <i>**The above Checks for Understanding will be taught throughout the year.</i></p> <p>Number and Operation</p> <ul style="list-style-type: none"> ✓ 0.2.11 Recognize and use ordinal numbers (e.g, first, fourth, last) (4.8, 9.6) <i>Reference lesson bank.</i>

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KINDERGARTEN- Math Pacing Guide For THIRD Grading Period

WEEKS 1-3	STANDARD
	<p><i>Count by 1's and 10's to 50.</i> <i>Write numerals to 25.</i> <i>** The above skills are not listed in our curriculum standards, but are necessary.</i> <i>0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics.</i> <i>0.2.3 Count backward from 10 to 1.</i> <i>0.2.2 Match quantities to 25 with numerals and written words.</i> <u><i>0.2.4 Count to 20 by twos.</i></u> <i>**The above Checks for Understanding will be taught throughout the year.</i></p> <p>Mathematical Process</p> <ul style="list-style-type: none"> ✓ 0.1.4 Tell time to the hour. (9.7, 9.8, 9.9) ✓ 0.1.6. Name and identify coins and their values. (10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 15.7) ✓ 0.1.7 Use words to describe temperature (e.g. hot, warm, cool, cold). (9.3) ✓ 0.1.8 Recognize a thermometer as a way to measure temperature. (12.9) <p><i>The above skills may require additional review throughout this nine weeks grading period.</i></p>
WEEKS 4-6	STANDARD
	<p><i>Count by 1's and 10's to 50.</i> <i>Write numerals to 25.</i> <i>** The above skills are not listed in our curriculum standards, but are necessary.</i> <i>0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics.</i> <i>0.2.3 Count backward from 10 to 1.</i> <i>0.2.2 Match quantities to 25 with numerals and written words.</i> <u><i>0.2.4 Count to 20 by twos.</i></u> <i>**The above Checks for Understanding will be taught throughout the year.</i></p> <p>Number and Operation</p> <ul style="list-style-type: none"> ✓ 0.2.1. Count objects to 25 using 1 to 1 correspondence and identify the quantity in the counted group. (16.1, 16.2) ✓ 0.2.5 Create a set with a given number of objects. (16.1, 16.2) ✓ 0.2.9 Order the numbers through 25 using numerals and words. (16.3) <p>Algebra</p> <ul style="list-style-type: none"> ✓ 0.3.5 Describe changes in attributes according to qualitative criteria such as longer/shorter, colder/warmer, heavier/lighter. (11.1, 11.2, 12.1, 12.2, 12.5, 12.6,) <p>Geometry and Measurement</p> <p>0.4.7 Make direct and indirect comparisons between objects (such as recognize which is shorter, longer, taller, lighter, heavier, or holds more) (12.1, 12.2)</p>

WEEKS 7-9	STANDARD
	<p><i>Count by 1's and 10's to 50.</i> <i>Write numerals to 25.</i> <i>** The above skills are not listed in our curriculum standards, but are necessary.</i> <i>0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics.</i> <i>0.2.3 Count backward from 10 to 1.</i> <i>0.2.2 Match quantities to 25 with numerals and written words.</i> <u><i>0.2.4 Count to 20 by twos.</i></u> <i>**The above Checks for Understanding will be taught throughout the year.</i></p> <p>Mathematical Processes ✓ 0.1.2 Begin to develop the concept of estimation using concrete objects. (8.5, 15.8)</p> <p>Number and Operations ✓ 0.2.12 Model simple joining and separating situations with objects.</p> <p><i>Any extra days may be used for reviewing and/or making-up missed lessons.</i></p>

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KINDERGARTEN- Math Pacing Guide For FOURTH Grading Period

WEEKS 1-3	STANDARD
	<p><i>Count by 1's and 10's to 50. Write numerals to 25. ** The above skills are not listed in our curriculum standards, but are necessary.</i></p> <p><i>0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics. 0.2.3 Count backward from 10 to 1. 0.2.2 Match quantities to 25 with numerals and written words. 0.2.4 Count to 20 by twos. **The above Checks for Understanding will be taught throughout the year.</i></p> <p><u>ADDITION</u></p> <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 0.1.1 Model addition and subtraction (e.g. using a number chart, number line and/or concrete objects) (13.1) <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 0.2.13 Add and subtract single-digit numbers whose total or difference is between 0 and 10. ✓ 0.2.14 Understand add as “put-together” or “count on” and solve addition problems with sums less than twenty. ✓ 0.2.16 Model, demonstrate and solve story problems that illustrate addition and subtraction. ✓ 0.2.17 Understand that numbers can be represented by different groupings. <p><i>Use the following lessons to teach the above Checks for Understanding. (13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8)</i></p>
WEEKS 4-6	STANDARD
	<p><i>Count by 1's and 10's to 50. Write numerals to 25. ** The above skills are not listed in our curriculum standards, but are necessary.</i></p> <p><i>0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics. 0.2.3 Count backward from 10 to 1. 0.2.2 Match quantities to 25 with numerals and written words. 0.2.4 Count to 20 by twos. **The above Checks for Understanding will be taught throughout the year.</i></p> <p><u>SUBTRACTION</u></p> <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 0.1.1 Model addition and subtraction (e.g. using a number chart, number line and/or concrete objects) (14.1)

	<p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 0.2.13 Add and subtract single-digit numbers whose total or difference is between 0 and 10. ✓ 0.2.14 Understand add as “put-together” or “count on” and solve addition problems with sums less than twenty. ✓ 0.2.16 Model, demonstrate and solve story problems that illustrate addition and subtraction. ✓ 0.2.17 Understand that numbers can be represented by different groupings. <p><i>Use the following lessons to teach the above Checks for Understanding (14.2, 14.3, 14.4, 14.5, 14.6)</i></p>
<p>WEEKS 7-9</p>	<p>STANDARD</p>
	<p><i>Count by 1’s and 10’s to 50. Write numerals to 25. ** The above skills are not listed in our curriculum standards, but are necessary. 0.1.9 Use age appropriate books, stories and videos to convey ideas of mathematics. 0.2.3 Count backward from 10 to 1. 0.2.2 Match quantities to 25 with numerals and written words. 0.2.4 Count to 20 by twos. **The above Checks for Understanding will be taught throughout the year.</i></p> <p><u>ADDITION AND SUBTRACTION</u></p> <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 0.1.1 Model addition and subtraction (e.g. using a number chart, number line and/or concrete objects) (14.7) <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 0.2.13 Add and subtract single-digit numbers whose total or difference is between 0 and 10. ✓ 0.2.14 Understand add as “put-together” or “count on” and solve addition problems with sums less than twenty. ✓ 0.2.16 Model, demonstrate and solve story problems that illustrate addition and subtraction. ✓ 0.2.17 Understand that numbers can be represented by different groupings. <p><i>Any extra days may be used for reviewing and/or making-up missed lessons and end-of-the year testing.</i></p>

- The parenthesis denotes the correlation to the Houghton Mifflin text.
- The underlined words indicate what is taught for the accomplishment

CLEVELAND CITY SCHOOLS

First Grade Math Curriculum Pacing Guide

The Math Pacing Guide for first grade is STANDARDS driven and has been reformatted for a more efficient flow throughout the school year. Every Check for Understanding has been covered and there are suggested Houghton Mifflin lessons listed in bold face at the end of the standard. Teachers will need to use additional resources to assist students in mastering each standard. The math textbook needs to be considered as a resource, not something to be covered from beginning to end.

The three-week increments in this guide have been set as guidelines to assist teachers in their planning and implementation of Grade level Expectations. Differences in teaching styles and student demographics may create variation in the amount of time spent on each skill during a three-week span.

Checks for Understanding are the core standard for formative (teacher-created) and summative (TCAP) assessments in the classroom. Teaching the Checks is essential for mastery of the SPIs. Although first grade does not have SPIs, we are responsible for making sure all Grade Level Expectations are taught. In order for mastery of an SPI in third grade, it is imperative that students master the Checks. Teachers should pay special attention to the verbs in the Checks for Understanding (i.e. students should successfully analyze, explore, construct, etc.).

All Checks for Understanding will be covered by the end of the third nine weeks. The fourth nine weeks is left for TCAP preparation, TCAP testing, cumulative review of assessments, and introducing second grade standards.

First Grade – Math Pacing Guide for FIRST Grading Period

WEEKS 1-3	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 1.1.9 Use age-appropriate books, stories, and videos to convey ideas of mathematics. <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 1.2.1 Read and write numerals up to 100 (20). (1.2, 1.3) ✓ 1.2.2 Write numbers up to 10 in words. (1.2, 1.3) ✓ 1.2.3 Count forward and backward by ones beginning with any number less than 100. (1.4) ✓ 1.2.5 Order and compare (less than, greater than, or equal to) whole number less than 100 (20). (1.5, 1.6) <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 1.1.16 Represent whole numbers up to 100 (20) on a number line. (1.1.16)
WEEKS 4-6	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 1.1.8 Recognize the “word clues” and mathematical symbols for <u>addition</u> and subtraction. (2.3, 2.8, 5.5, 15.8) <p>Numbers and Operations</p> <ul style="list-style-type: none"> ✓ 1.2.7 Develop fluency with <u>adding</u> and subtracting facts of sums through 10. ✓ 1.2.8 Relate “counting on” and “counting back” to <u>addition</u> and subtraction and understand them as inverse operations. (5.1, 15.1) ✓ 1.2.9 Adding three single-digit numbers. (15.3) ✓ 1.2.10 Use models (such as discrete objects, connecting cubes, and number lines) to represent “part-whole”, “adding to,” “taking away from, and “comparing to” situations to develop understanding of the meaning of <u>addition</u> and subtraction. (2.1, 2.2, 2.3, 2.6, 5.2) ✓ 1.2.12 Use various models to develop strategies for solving arithmetic problems. (5.3, 5.4, 15.2, 15.3, 15.5) <p>Algebra</p> <ul style="list-style-type: none"> ✓ 1.3.5 Use various strategies to find unknowns in problems involving <u>addition</u> and subtraction. (15.7) ✓ 1.3.3 Use objects to illustrate the commutative property with basic facts and show that subtraction is not commutative. (2.5, 15.4) ✓ 1.3.9 Recognize that zero is the identity element for <u>addition</u>. (2.4)

WEEKS 7-9	STANDARD
	<p>Mathematical Process</p> <ul style="list-style-type: none"> ✓ 1.1.7 Apply spatial sense to recreate a figure from memory. <p>Data, Probability and Statistics</p> <ul style="list-style-type: none"> ✓ 1.5.1 Represents measurements and discrete data using concrete objects, picture graphs, and bar graphs. (4.2, 4.3, 4.4, 4.5) ✓ 1.5.2 Represent data in both horizontal and vertical form. (4.2, 4.3, 4.4, 4.5) ✓ 1.5.3 Display data using appropriate titles and labels. (4.2, 4.3, 4.4, 4.5) ✓ 1.5.4 Count and compare collected data. (4.1, 4.6) <p>Geometry and Measurement</p> <ul style="list-style-type: none"> ✓ 1.4.1 Recognize and describe similarities and differences between two-dimensional figures. (7.1, 7.2, 7.3) ✓ 1.4.2 Recognize two and three-dimensional figures from different perspectives and orientations. (7.4, 7.5) ✓ 1.4.3 Model part-whole relationships and properties of plane and solid figures by breaking apart an object into smaller shapes. (7.7) ✓ 1.4.4 Identify two-dimensional shapes as faces of three-dimensional figures. (7.6)

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FIRST GRADE – Math Pacing Guide for SECOND Grading Period

WEEKS 1-3	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 1.1.8 Recognize the “word clues” and mathematical symbols for addition and <u>subtraction</u>. (3.3, 3.8, 6.7, 16.8) ✓ 1.1.9 Use age-appropriate books, stories, and videos to convey ideas of mathematics. <p>Numbers and Operations</p> <ul style="list-style-type: none"> ✓ 1.2.7 Develop fluency with adding and <u>subtracting</u> facts of sums through 10. ✓ 1.2.8 Relate “counting on” and “counting back” to addition and <u>subtraction</u> and understand them as inverse operations. (6.1, 16.1) ✓ 1.2.10 Use models (such as discrete objects, connecting cubes, and number lines) to represent “part-whole,” “adding to,” “taking away from,” and “comparing to” situations to develop understanding of the meaning of addition and <u>subtraction</u>. (Chapter 3; 6.2, 6.3, 16.2, 16.3) ✓ 1.2.12 Use various models to develop strategies for solving arithmetic problems. (6.6) <p>Algebra</p> <ul style="list-style-type: none"> ✓ 1.3.4 Demonstrate understanding of the basic equation $a + b = c$ by using objects to illustrate the number sentences (fact families) associated with any particular sum. (6.5, 16.5, 16.6) ✓ 1.3.5 Use various strategies to find unknowns in problem solving addition and subtraction. ✓ 1.3.6 Use objects to demonstrate the inverse relationship between addition and subtraction. ✓ 1.3.7 Use the inverse relation between addition and subtraction to check arithmetic problems. (6.4, 16.4)
WEEKS 4-6	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 1.1.10 Match the spoken, written, concrete, and pictorial representations of whole numbers, one half, and one fourth. (9.2, 9.3) <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 1.2.11 Recognize the “part-whole” relationship in representations of basic fractions such as $\frac{1}{2}$, and $\frac{1}{4}$. (9.4) ✓ 1.2.1 Read and write numerals up to 100. (10.3, 10.4) ✓ 1.2.6 Recognize the place value of numbers with any number less than 100. (10.5) ✓ 1.2.15 Represent whole numbers between 10 and 100 in groups of ten and ones.(10.1, 10.2, 10.3,10.4)

WEEKS 7-9	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 1.2.13 Solve problems that require addition and subtraction of numbers through 100 (20). (chapter 19) ✓ 1.2.3 Count forward and backward by ones beginning with any number less than 100. ✓ 1.2.4 Skip count by twos, fives, and tens. (12.1, 12.2) ✓ 1.2.5 Order and compare (less than, greater than, or equal to) whole numbers less than 100. (10.1, 11.1, 11.4, 11.5) ✓ 1.2.16 Represent whole numbers up to 100 on a number line. ✓ 1.2.17 Use the number line to create visual representations of sequences. (12.1) ✓ 1.2.14 Use composition and decomposition of numbers to identify and discuss patterns. <p>Algebra</p> <ul style="list-style-type: none"> ✓ 1.3.8 Determine whether a number is odd or even by pairing objects. (such as even numbers) (12.4) ✓ 1.3.1 Find repeating patterns on the number line, addition table, and hundreds chart. (12.1, 12.2, 12.3) ✓ 1.3.2 Determine a reasonable next term in a given sequence and describe the rule.

- **The parenthesis denotes the correlation to the Houghton Mifflin text.**

FIRST GRADE – Math Pacing Guide for THIRD Grading Period

WEEKS 1-3	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 1.1.1 Describe the relationship between days and months. (13.7, 13.8) ✓ 1.1.2 Read and write time to the hour, half-hour, and quarter hour (13.3, 13.4, 13.6) ✓ 1.1.3 Compare units of time. (13.2) <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 1.2.13 Solve problems that require addition and <u>subtraction</u> of numbers through 100 (20) (Chapter 20)
WEEKS 4-6	STANDARDS
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 1.1.4 Count the value of a set of coins up to fifty cents. (14.1, 14.2, 14.3, 14.5, 14.6, 14.7) ✓ 1.1.5 Use a thermometer to measure temperature. (18.4) ✓ 1.1.6 Recognize scales as a way of measuring weight. (18.5) <p>Geometry and Measurement</p> <ul style="list-style-type: none"> ✓ 1.4.5 Estimate and measure length using non-standard units (counting by using groups of tens and ones) to represent addition. (17.2) ✓ 1.4.6 Recognize the essential role of units in measurement, and understand the difference between standard and non-standard units. (17.3) ✓ 1.4.7 Understand and use comparative words such as long, longer, longest; short, shorter, shortest; tall, taller, tallest; high, higher highest. (17.1)
WEEKS 7-9	
	<p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 1.2.13 Solve problems that require addition and subtraction of Numbers through 100. (Chapter 21 and Chapter 22)

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FIRST GRADE – Math Pacing Guide for FOURTH Grading Period

WEEKS 1-3	STANDARD
	<p>TCAP PREPARATION/ REVIEW TCAP TESTING</p>
WEEKS 4-6	STANDARD
	<p>CUMULATIVE ASSESSMENTS FOR MASTERY FOR FIRST GRADE SKILLS</p>
WEEKS 7-9	STANDARD
	<p align="center"><u>LAY THE FOUNDATION FOR SECOND GRADE</u></p> <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.2.1 Starting at any number, count by ones, twos, fives, tens, and hundreds up to 1000. ✓ 2.2.2 Locate and interpret numbers on a number line. ✓ 2.2.5 Compare and order multi-digit numbers up to 1000. <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 2.1.15 Use age-appropriate books, stories, and videos to convey ideas of mathematics. ✓ 2.1.10 Develop a story problem that illustrates a given addition or subtraction sentence. ✓ 2.1.11 Use manipulatives to demonstrate addition and subtraction sentences written symbolically. ✓ 2.1.12 Write numbers and translate word clues to number sentences and vice versa.

- The parenthesis denotes the correlation to the Houghton Mifflin text.

CLEVELAND CITY SCHOOLS

Second Grade Math Curriculum Pacing Guide

The Math Pacing Guide for second grade is STANDARDS driven and has been reformatted for a more efficient flow throughout the school year. Every Check for Understanding has been covered and there are suggested Houghton Mifflin lessons listed in bold face at the end of the standard. Teachers will need to use additional resources to assist students in mastering each standard. The math textbook needs to be considered as a resource.

The three-week increments in this guide have been set as guidelines to assist teachers in their planning and implementation of the standards. Differences in teaching styles and student demographics may create variation in the amount of time spent on each skill during a three-week span.

Checks for Understanding are the core standard for formative (teacher-created) and summative (TCAP) assessments in the classroom. Teaching the Checks is essential for mastery. Teachers should pay special attention to the verbs in the Checks for Understanding (i.e. students should successfully analyze, explore, construct, etc.).

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SECOND GRADE – Math Pacing Guide for FIRST Grading Period

WEEKS 1-3	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.2.1 Starting at any number, count by ones, twos, fives, tens, and hundreds up to 1000. (1.1, 6.2) ✓ 2.2.2 Read and write numbers up to 1000 using numerals and up to 100 using words. (1.2, 6.3, 2.2) ✓ 2.2.5 Compare and order multi-digit numbers up to 1000. (1.2, 1.3, 6.3, 5.5) <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 2.1.15 Use age-appropriate books, stories, and videos to convey ideas of mathematics. *Apply all year. ✓ 2.1.10 Develop a story problem that illustrates a given addition or subtraction sentence. (1.5, 2.7, 3.8, 5.6) ✓ 2.1.11 Use manipulatives to demonstrate addition and subtraction sentences written symbolically. (2.1, 3.3, 3.7) ✓ 2.1.12 Write numbers and translate word clues to number sentences and vice versa. (1.1, 2.7, 3.8, 5.1, 5.2, 6.4 10.1)
WEEKS 4-6	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 2.1.14 Create and observe numerical patterns on a calculator by repeatedly adding or subtracting the same number from some starting number. (11.3) <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.2.6 Use various models such as number lines, pictures, and base-ten blocks to illustrate addition and subtraction. (2.1, 2.2, 2.3, 2.5, 3.2, 3.3, 3.7, 10.1) ✓ 2.2.7 Develop fluency at recalling basic addition facts and related subtraction facts. (2.1, 2.2, 2.3, 2.4, 3.1, 3.4, 3.5, 3.6) <p>Data, Probability and Statistics</p> <ul style="list-style-type: none"> ✓ 2.5.1 Read, interpret, and analyze data shown in tables, bar graphs, and picture graphs. (4.1, 4.2, 4.3, 4.8) ✓ 2.5.2 Read, interpret, and create tables using tally marks. (4.2, 4.3) ✓ 2.5.3 Explain whether a real world event is likely or unlikely. (4.6) ✓ 2.5.4 Predict outcomes of events based on data gathered and displayed. (4.6, 4.7)
WEEKS 7-9	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.2.4 Recognize that place-value notation represents the sums of multiples of powers of ten. (5.1, 5.2, 5.3, 5.4) <p>Algebra</p> <ul style="list-style-type: none"> ✓ 2.3.1 Given rules, complete tables to reveal both arithmetic and geometric patterns. (6.2) ✓ 2.3.2 Given a description, extend or find a missing term in a pattern sequence. (6.5, 6.6, 7.7) ✓ 2.3.3 Record and study patterns resulting from the addition, subtraction, and multiplication of combinations of odd and even number. (6.5, 6.6, 6.2) ✓ 2.3.4 Generalize the patterns resulting from the addition, subtraction, and multiplication of combinations of odd and even numbers. (6.1, 6.2, 6.5)

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SECOND GRADE – Math Pacing Guide for SECOND Grading Period

WEEKS 1-3	STANDARD
	<p>Geometry and Measurement</p> <ul style="list-style-type: none"> ✓ 2.4.1 Describe common geometric attributes of familiar plane and solid shapes. (7.1, 8.1) ✓ 2.4.2 Reflect, rotate, and translate shapes to explore the effects of transformations. (7.6) ✓ 2.4.7 Investigate and describe composition, decomposition, and transformations of polygons. (7.6) ✓ 2.4.8 Combine polygons to form other polygons and subdivide a polygon into other polygons (7.1, 7.2, 7.3, 7.5, 8.2, 8.4) ✓ 2.4.9 Recognize the composition and decomposition of polygons. (7.1, 7.2, 7.5, 8.2, 8.4) <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 2.1.13 Use manipulatives such as pattern blocks, tangrams, etc. to explore geometric concepts of symmetry and transformations. (7.4)
WEEKS 4-6	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 2.1.8 Use concrete models or pictures to show whether a fraction is less than half, more than half, or equal to a half. (9.1, 9.3) ✓ 2.1.9 Match the spoken, written, concrete, and pictorial representatives of halves, thirds, and fourths. (9.1) <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.2.8 Use efficient procedures, and understand why they work, to solve problems involving the addition and subtraction of two- and three-digit whole numbers (including those that require regrouping). (10.2, 10.3, 10.4, 10.5, 10.6, 11.1) ✓ 2.2.10 Add three two-digit numbers. (11.4)
WEEKS 7-9	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.2.8 Use efficient procedures, and understand why they work, to solve problems involving the addition and subtraction of two- and three-digit whole numbers (including those that require regrouping) (12.1, 12.2, 12.3, 12.4) ✓ 2.2.9 Apply appropriate methods to estimate and mentally calculate sums or differences with ones, tens, and hundreds. (11.2, 11.3, 12.1, 12.2, 13.4, 13.3) ✓ 2.2.11 Solve addition and subtraction problems in context using various representations. (12.7, 13.6)

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SECOND GRADE – Math Pacing Guide for THIRD Grading Period

WEEKS 1-3	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 2.1.5 Count the value of a set of coins up to one dollar and use the transitive property of equality to recognize equivalent forms of values up to \$1.00. (14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 15.1, 15.2, 15.3, 15.4, 15.6, 15.7, 15.8) ✓ 2.1.3 Use strategies to make estimates of time. (16.1) ✓ 2.1.1 Read and write time up to five-minute intervals. (16.2, 16.3, 16.4) ✓ 2.1.4 Solve problems involving elapsed time in hour and half-hour intervals. (16.5, 16.7, 16.8) ✓ 2.1.2 Relate days, weeks, months, and years to calendar. (16.6)
WEEKS 4-6	STANDARD
	<p>Algebra</p> <ul style="list-style-type: none"> ✓ 2.3.8 Describe change in measure according to quantitative criteria such as growing two inches in one year. <p>Geometry and Measurement</p> <ul style="list-style-type: none"> ✓ 2.4.3 Understand the property of transitivity as it relates to linear measurement (For example: If A is longer than B, and B is longer than C, then A is longer than C.) ✓ 2.4.4 Estimate, measure, and calculate length to the nearest unit: meter, centimeter, yard, foot, and inch. (17.1, 17.2, 17.3, 17.4, 17.5, 17.8) ✓ 2.4.5 Use rulers to measure the lengths of sides and diagonals of common two-dimensional figures and polygons. ✓ 2.4.6 Understand the inverse relationship between the size of a unit and the number of units used in a particular measurement (the smaller the unit, the more iterations needed to cover the length). <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.1.7 Measure weight to the nearest pound or kilogram. (18.3, 18.4, 18.8) ✓ 2.1.6 Read thermometers with Fahrenheit and Celsius scales. (18.5, 18.6)
WEEKS 7-9	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.2.12 Demonstrate skip counting on the number line and relate to repeated addition and multiplication. (19.1, 19.2) ✓ 2.2.13 Relate patterns in skip counting to multiplication. (19.2, 19.3) <p>Algebra</p> <ul style="list-style-type: none"> ✓ 2.3.5 Understand and use commutative and associative properties of addition and multiplication. (19.4) ✓ 2.3.6 Relate repeated addition to multiplication. (19.1, 19.2, 19.3) ✓ 2.3.7 Find unknowns in number sentences and problems involving addition, subtraction and multiplication.

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SECOND GRADE – Math Pacing Guide for FOURTH Grading Period

WEEKS 1-3	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.2.1 Starting at any number, count by ones, twos, fives, tens, and hundreds up to 1000. (20.1, 20.2) ✓ 2.2.2 Read and write numbers up to 1000 using numerals and up to 100 using words. (20.3, 20.4, 20.5) ✓ 2.2.5 Compare and order multi-digit numbers up to 1000. (20.6, 20.7, 20.8) <p>Algebra</p> <ul style="list-style-type: none"> ✓ 2.3.1 Given rules, complete tables to reveal both arithmetic and geometric patterns. (20.9) ✓ 2.3.2 Generalize the patterns resulting from the addition, subtraction, and multiplication of combinations of odd and even numbers. (20.9, 21.1) <p>TCAP Practice/Review</p>
WEEKS 4-6	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 2.2.8 Use efficient procedures, and understand why they work, to solve problems involving the addition and subtraction of two- and three-digit numbers (including those that require regrouping). (21.1, 21.2, 21.3, 21.4, 21.5, 21.6, 22.1, 22.2, 22.3, 22.4, 22.5, 22.6) ✓ 2.2.9 Apply appropriate methods to estimate and mentally calculate sums or differences with ones, tens, and hundreds. (21.1, 22.1, 22.6) ✓ 2.2.11 Solve addition and subtraction problems in context using various representations (21.1, 21.2, 21.3, 21.4, 21.5, 21.6, 22.1, 22.2, 22.3, 22.4, 22.5, 22.6)
WEEKS 7-9	STANDARD
	<p align="center"><u>LAY THE FOUNDATION FOR 3RD GRADE</u></p> <p>Number and Operations</p> <ul style="list-style-type: none"> • 2.2.7 Develop fluency at recalling basic addition facts and related subtraction facts. • 3.2.6 Recall basic multiplication facts through ten times ten and the related division facts. • 3.2.4 Compare and order numbers up to 10,000 using the words less than, greater than, and equal to, and the symbols $<$, $>$, $=$. • 3.2.2 Understand and use the symbols $=$, $<$, $>$ to signify order and comparison. <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 3.1.1 Solve problems using a calendar. <p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 3.4.2 Determine if two figures are congruent based on size and shape. • 3.4.3 Identify the line of symmetry in a two-dimensional design or shape. • 3.4.4 Identify, create and describe figures with line symmetry.

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Third Grade Math Pacing Guide

The Math Pacing Guide for third grade is STANDARDS driven and has been reformatted for a more efficient flow throughout the school year. Every standard has been covered in grading periods one, two, and three. There are suggested Houghton Mifflin lessons listed in bold face at the end of each State Performance Indicator (SPI). Teachers are encouraged to use additional resources to assist the students in mastering each standard. **The math textbook needs to be considered as a resource, not something to be covered from beginning to end.**

The three-week increments in this guide have been set as guidelines to assist teachers in their planning and implementation of the (SPIs). Differences in teaching styles and student demographics may create variations in the amount of time spent on each skill during a three-week span.

Checks for Understanding are the core standard for formative (teacher-created) and summative (TCAP) assessments in the classroom. Teaching the checks is essential for mastery of the SPIs. In order for mastery of an SPI, it is imperative that students master the Checks for Understanding. Teachers should pay special attention to the verbs in the Checks for Understanding (i.e. Students should successfully analyze, explore, construct, etc.).

All SPIs and Checks for Understanding will be covered by the end of the third nine weeks. The fourth nine weeks is left for TCAP preparation, TCAP testing, cumulative review of assessments, and introducing fourth grade standards.

For many of the SPIs, the new calculators will be very helpful. The calculators can be available to students at all times. Students can be instructed to use more advanced calculator keys such as adding/subtracting fractions, order of operations, or exponent functions.

THIRD GRADE-Math Pacing Guide For FIRST Grading Period

WEEKS 1-3	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> • Solve problems using a calendar (12.5) <p>Number and Operations</p> <ul style="list-style-type: none"> • 3.2.4 Compare and order numbers up to 10,000 using the words less than, greater than, and equal to, and the symbols $<$, $>$, $=$. (2.1, 2.2) ✓ 3.1.14 Use age-appropriate books, stories, and videos to convey ideas of mathematics. *Applies for all year. ✓ 3.2.2 Understand and use the symbols $=$, $<$, $>$ to signify order and comparison. <p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 3.4.2 Determine if two figures are congruent based on size and shape. (16.1, 16.2) • 3.4.3 Identify the line of symmetry in a two-dimensional design or shape. (16.3) ✓ 3.4.4 Identify, create, and describe figures with line symmetry.
WEEKS 4-6	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> • 3.1.8 Express answers clearly in verbal, numerical, or graphical (bar and picture) form, using units when appropriate. (6.1, 6.3, 6.4, 6.5, 6.6, 8.7) ✓ 3.1.13 Create and use representation to organize, record, and communicate mathematical ideas. <p>Number and Operations</p> <ul style="list-style-type: none"> • 3.2.9 Solve contextual problems involving the addition (with and without regrouping) and subtraction (with and without regrouping) of two- and three digit whole numbers. (4.3, 4.4, 4.5, 5.4, 5.5, 5.8) ✓ 3.2.6 Solve a variety of addition and subtraction story problems including those with irrelevant information. ✓ 3.2.4 Use a variety of methods to perform mental computations and compare the efficiency of those methods. <p>Algebra</p> <ul style="list-style-type: none"> • 3.3.2 Express mathematical relationships using number sentences/ equations. (10.8) <p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 3.4.6 Measure length to the nearest centimeter or half inch. (13.2, 14.1) • 3.4.7 Solve problems requiring the addition and subtraction of lengths. (13.3, 13.4, 14.3)

WEEKS 7-9	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> • 3.1.7 Select appropriate units and tools to solve problems involving measures. (13.8, 14.4) <p>Number and Operations</p> <ul style="list-style-type: none"> • 3.2.2 Identify the place value of numbers in the ten-thousands, thousands, hundreds, and ones positions. (1.2, 1.3, 1.4, 1.6) ✓ 3.2.5 Use highest order value (such as tens or hundreds digit) to make simple estimates. • 3.2.3 Convert between expanded and standard form with whole numbers to 10,000. (1.4, 1.6) ✓ 3.2.1 Represent whole numbers up to 10,000 using various models (such as base-ten blocks, number lines, place-value charts) and in standard form, written form, and expanded form. <p>Algebra</p> <ul style="list-style-type: none"> • 3.3.4 Describe or extend (including finding missing terms) geometric and numeric patterns. (1.5, 9.7, 15.5) ✓ 3.3.7 Create different representations of a pattern given a verbal description. <p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 3.4.1 Recognize polygons and be able to identify examples based on geometric definitions. (15.2, 15.3, 15.4) ✓ 3.4.1 Describe properties of plane figures (such as circles, triangles, squares, and rectangles) and solid shapes (such as spheres, cubes, and cylinders). ✓ 3.4.2 Classify polygons according to the number of their sides and angles. ✓ 3.4.3 Classify lines and segments as parallel, perpendicular, or intersecting.

- The parenthesis denotes the correlation to the Houghton Mifflin text.

THIRD GRADE-Math Pacing Guide for SECOND Grading Period

WEEKS 1-3	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> • 3.2.1 Read and write numbers up to 10,000 in numerals and up to 1,000 in words. (1.2, 1.4) <p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 3.4.4 Calculate the perimeter of shapes made from polygons.(17.1, 17.2, 17.5) • 3.4.5 Choose reasonable units of measure, estimate common measurements using benchmarks, and use appropriate tools to make measurements.(13.1, 13.2, 13.3, 13.5, 13.6, 13.7, 14.1, 14.2, 14.3, 14.4, 14.5) ✓ 3.4.5 Understand that all measurements require units. ✓ 3.4.6 Recognize the use of fractions in liquid measures. ✓ 3.4.7 Recognize the relationships among cups, pints, quarts, and gallons. ✓ 3.4.8 Estimate and/or measure the capacity of a container. ✓ 3.4.9 Measure weight to the nearest ounce or gram. ✓ 3.4.10 Use reasonable units of length (i.e. kilometer, meter, centimeter, mile, yard, foot, inch) in estimates and measures. ✓ 3.4.11 Know common equivalences for length (1 meter=100 centimeters, 1 yard=3 feet, 1 foot=12 inches). ✓ 3.4.12 Make and record measurements that use mixed units within the same system of measurement (such as feet and inches, meters and centimeters). ✓ 3.4.13 Use common abbreviations: km, m, cm, in., ft, yd, mi. <p>Data, Probability, and Statistics</p> <ul style="list-style-type: none"> • 3.5.1 Interpret a frequency table, bar graph, pictograph, or line graph. (2.5, 6.3, 6.4, 6.5, 6.6, 8.7) ✓ 3.5.1 Collect and organize data using observations, surveys, and experiments. ✓ 3.5.2 Construct a frequency table, bar graph, pictograph, or line plot of collected data. • 3.5.2 Solve problems in which data is represented in tables or graphs. (2.5, 4.5, 6.4, 8.7, 11.6, 12.6) ✓ 3.5.4 Solve problems using data from frequency tables, bar graphs, pictographs, or line plots.

WEEKS 4-6	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> • 3.1.3 Determine the correct change from a transaction less than a dollar. (3.1, 3.2, 3.3, 3.4, 3.5) ✓ 3.1.2 Compare and order decimal amounts in the context of money. ✓ 3.1.3 Count the value of combinations of coins and bills up to five dollars. • 3.1.5 Represent problems mathematically using diagrams, numbers, and symbolic expressions. (11.5, 11.6) <p>Number and Operations</p> <ul style="list-style-type: none"> • 3.2.7 Compute multiplication problems that involve multiples of ten using basic number facts. (8.6, 9.1, 9.7) ✓ 3.2.7 Represent multiplication using various representations such as equal-size groups, arrays, area models, and equal jumps on number lines.
WEEKS 7-9	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> • 3.1.2 Solve problems involving elapsed time. (12.4, 12.6) ✓ 3.1.1 Read and write time to the nearest minute. <p>Number and Operations</p> <ul style="list-style-type: none"> • 3.2.5 Identify various representations of multiplication and division. (8.1, 8.2, 9.1, 9.7, 10.1, 10.2, 10.3, 10.9, 11.1, 11.2) ✓ 3.2.7 Represent multiplication using various representations such as equal-size groups, arrays, area models, and equal jumps on number lines. • 3.2.6 Recall basic multiplication facts through 10 times 10 and the related division facts. (8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.8, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7) • 3.2.8 Solve problems that involve the inverse relationship between multiplication and division. (10.5, 10.8, 11.6) <p>Algebra</p> <ul style="list-style-type: none"> • 3.3.3 Find the missing values in simple multiplication and division equations. (9.8, 10.1, 10.3) ✓ 3.3.5 Find unknowns in number sentences and problems involving addition, subtraction, multiplication, or division.

- The parenthesis denotes the correlation to the Houghton Mifflin text.

THIRD GRADE-Math Pacing Guide For THIRD Grading Period

WEEKS 1-3	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> • 3.1.4 Match the spoken, written, concrete, and pictorial representations of fractions with denominators up to ten. (18.1, 18.2, 18.3, 18.4) <p>Data, Probability, and Statistics</p> <ul style="list-style-type: none"> • 3.5.1 Interpret a frequency table, bar graph, pictograph, or line plot. (6.3, 6.5, 6.6) ✓ 3.5.3 Compare and interpret different representations of the same data. ✓ 3.5.4 Solve problems using data from frequency tables, bar graphs, pictographs, or line plots. • 3.5.2 Solve problems in which data is represented in tables or graphs. (2.5, 4.5, 6.1, 6.3, 6.4, 6.5, 6.6, 6.7, 11.6) ✓ 3.5.4 Solve problems using data from frequency tables, bar graphs, pictographs, or line plots. • 3.5.3 Make predictions based on various representations of data. (7.1, 7.2, 7.3, 7.4, 7.5)
WEEKS 4-6	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> • 3.1.6 Identify and use vocabulary to describe attributes of two- and three- dimensional shapes.(15.2, 15.3, 15.4, 15.6, 15.7) • 3.2.11 Recognize and use different interpretations of fractions. (18.1, 18.2, 19.3) ✓ 3.2.11 Identify fractions as parts of whole units, as parts of sets, as locations on number lines, and as division of two whole numbers. • 3.2.14 Add and subtract fractions with like denominators. (19.4, 19.5) ✓ 3.2.4 Use a variety of methods to perform mental computations and compare the efficiency of those methods.
WEEKS 7-9	STANDARD
	<ul style="list-style-type: none"> • 3.2.10 Identify equivalent fractions given by various representations. (18.5, 18.6) ✓ 3.2.13 Understand that when a whole is divided into equal parts to create unit fractions, the sum of all the parts adds up to one. • 3.2.12 Name fractions in various contexts that are less than, equal to, or greater than one (18.1, 18.2, 18.3, 18.4, 18.5, 18.6, 18.7). ✓ 3.2.2 Understand and use the symbols =, <, > to signify order and comparison. ✓ 3.2.10 Understand that symbols such as $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ represent numbers called unit fractions. • 3.2.13 Recognize, compare, and order fractions (benchmark fractions, common numerators, or common denominators). (19.1, 19.2, 19.3)

	<ul style="list-style-type: none">✓ 3.2.12 Compare fractions using drawings, concrete objects, and benchmark fractions.• 3.3.1 Verify a conclusion using algebraic properties. (4.1, 5.1, 5.2, 8.2, 10.1, 10.2, 10.3, 11.2)✓ 3.3.1 Show that addition and multiplication are commutative operations.✓ 3.3.2 Show that subtraction and division are not commutative operations.✓ 3.3.3 Use commutative, associative, and distributive properties to multiply two numbers.✓ 3.3.4 Solve problems using the commutative, associative, and distributive properties.
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- The parenthesis denotes the correlation to the Houghton Mifflin text.

THIRD GRADE-Math Pacing Guide for FOURTH Grading Period

WEEKS 1-3	STANDARD
	Review all standards in preparation for TCAP testing
Weeks 4-6	
	Cumulative Testing for Standards Based Report Card
Weeks 7-9	
	<p align="center">Lay the foundation for fourth grade.</p> <ul style="list-style-type: none"> • 2.2.7 Develop fluency at recalling basic addition facts and related subtraction facts. • 3.2.6 Recall basic multiplication facts through ten times ten and the related division facts. • 4.2.11 Solve problems using whole number multi-digit multiplication. ✓ 4.2.3 Multiply two-and three-digit whole numbers. • 4.2.4 Find factors, common factors, multiples, and common multiples of two numbers. ✓ 4.2.7 Identify factors of whole numbers and model factors and products beyond basic multiplication facts using arrays and area models. • 4.2.3 Identify the place value of a specified digit in a number and the quantity it represents. ✓ 4.2.1 Compose and decompose quantities according to place value. ✓ 4.2.2 Understand decimal notation as an extension of the base-ten number system. • 4.2.1 Read and write numbers from hundredths to hundred-thousands in numerals and in words. <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 4.1.3 Determine the correct change from a transaction. ✓ 4.1.3 Connect operations with decimals to money. • 4.1.1 Verify a conclusion using the commutative, associative, and distributive properties. <p>Algebra</p> <ul style="list-style-type: none"> • 4.3.1 Use letters and symbols to represent an unknown quantity and write a simple mathematical expression. • 4.2.12 Solve problems using whole number division with one- or two-digit divisor.

- **The parenthesis denotes the correlation to the Houghton Mifflin text.**

CLEVELAND CITY SCHOOLS

Fourth Grade Math Curriculum Pacing Guide

The Math Pacing Guide for fourth grade is STANDARDS driven and has been reformatted for a more efficient flow throughout the school year. Every State Performance Indicator (SPI) and Check for Understanding has been covered and there are suggested Houghton Mifflin lessons listed in bold face at the end of the SPI's. Teachers will need to use additional resources to assist students in mastering each standard. The math textbook needs to be considered as a resource, not something to be covered from beginning to end.

The three-week increments in this guide have been set as guidelines to assist teachers in their planning and implementation of the SPI's. Differences in teaching styles and student demographics may create variation in the amount of time spent on each skill during a three-week span.

Checks for Understanding are the core standards for formative (teacher-created) and summative (TCAP) assessments in the classroom. Teaching the Checks is essential for mastery of the SPI's. In order for mastery of an SPI, it is imperative that students master the Checks. Teachers should pay special attention to the verbs in the Checks for Understanding (i.e. students should successfully analyze, explore, construct, etc.).

All SPI's and Checks for Understanding will be covered by the end of the third nine weeks. The fourth nine weeks is left for TCAP preparation, TCAP testing, cumulative review of assessments, and introducing sixth grade standards.

For many of the SPI's, the new calculators will be very helpful. The calculators can be available to students at all times. Students can be instructed to use more advanced calculator keys such as adding/subtracting fractions, order of operations, or exponent functions.

The pacing guide is written to follow in sequential order to the Houghton Mifflin textbook with a few exceptions.

FOURTH GRADE-Math Pacing Guide For FIRST Grading Period

WEEKS 1-3	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> • 2.2.7 Develop fluency at recalling basic addition facts and related subtraction facts. *Applies to 2009-2010 • 3.2.6 Recall basic multiplication facts through ten times ten and the related division facts. *applies to 2009-2010 • 4.2.3 Identify the place value of a specified digit in a number and the quantity it represents. (1.2) <ul style="list-style-type: none"> ✓ 4.2.1 Compose and decompose quantities according to place value. ✓ 4.2.12 Understand and use decimal numbers up to hundredths and write them as fractions. • 4.2.1 Read and write numbers from hundredths to hundred-thousands in numerals and words. (1.2, 21.1)
WEEKS 4-6	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> • 4.2.4 Find factors, common factors, multiples, and common multiples of two numbers. (6.3, 7.3, 10.1, 10.2, 11.1) <ul style="list-style-type: none"> ✓ 4.2.7 Identify factors of whole numbers and model factors and products beyond basic multiplication facts using arrays and area models. • 4.2.11 Solve problems using whole number multi-digit multiplication. (6.4, 6.6, 6.7, 7.4, 7.6, 7.7) <ul style="list-style-type: none"> ✓ 4.2.3 Multiply two- and three-digit whole numbers. ✓ 4.2.4 Understand and use a reliable algorithm for multiplying multi-digit numbers and dividing numbers by a single-digit divisor accurately and efficiently. <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 4.1.1 Verify a conclusion using the commutative, associative, and distributive properties. (3.1, 4.1, 4.7) (distributive not covered in text) <ul style="list-style-type: none"> ✓ 4.1.4 Use commutative, associative, and distributive properties of numbers including oral descriptions of mathematical reasoning.

WEEKS 7-9	STANDARD
	<p>Algebra</p> <ul style="list-style-type: none"> • 4.3.1 Use letters and symbols to represent an unknown quantity and write a simple mathematical expression. (4.2, 5.2, 5.4) ✓ 4.3.1 Find an unknown quantity in simple equations using using whole numbers, fractions, decimals, and mixed numbers. ✓ 4.3.2 Translate between symbols and words to represent quantities in expressions or equations. <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 4.1.7 Translate the details of a contextual problem into diagrams and/or numeral expressions, and express answers using appropriate units. <p>Number and Operations</p> <ul style="list-style-type: none"> • 4.2.12 Solve problems using whole number division with one- or two-digit divisors. (4.8, 8.1, 8.2, 8.3, 8.4, 8.5, 9.1, 9.2, 9.4, 11.3, 11.4, 11.5) ✓ 4.2.4 Understand and use a reliable algorithm for multiplying multi-digit numbers and dividing numbers by a single-digit divisor accurately and efficiently. <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 4.2.5 Understand that division by zero is undefined. ✓ 4.2.6 Divide three-digit whole numbers by one-digit divisors. ✓ 4.2.10 Use models to understand division as the inverse of multiplication, partitioning, and repeated subtraction. ✓ 4.2.14 Understand the role of the remainder in division.

- The parenthesis denotes the correlation to the Houghton Mifflin text.

FOURTH GRADE-Math Pacing Guide for SECOND Grading Period

WEEKS 1-3	STANDARD
	<p>Algebra</p> <ul style="list-style-type: none"> • 4.3.3 Represent and analyze patterns using words, function tables, and graphs. (5.5) ✓ 4.3.3 Create, explain, and use a rule to generate terms of a pattern or sequence. ✓ 4.3.4 Translate between symbolic, numerical, verbal, or pictorial representations of a whole number pattern or relationship. • 4.3.2 Make generalizations about geometric and numeric patterns. (7.1) <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 4.1.4 Compare objects with respect to a given geometric or physical attribute and select appropriate measurement instrument <p>Geometry and Measurement.</p> <ul style="list-style-type: none"> • 4.4.7 Determine appropriate size of unit of measurement in problem situations involving length, capacity, or weight. (12.2., 12.3, 12.4, 12.6, 12.7, 12.8, 12.9) <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 4.1.6 Identify geometric or physical attributes that are appropriate to measure in a given situation. ✓ 4.1.5 Measure using ruler, meter stick, clock, thermometer, or other scaled instruments. <p>Geometry and Measurement</p> <ul style="list-style-type: none"> ✓ 4.4.13 Compare objects with respect to a given attribute such as length, area, and capacity.
WEEKS 4-6	STANDARD
	<p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 4.4.6 Determine situations in which a highly accurate measurement is important. ✓ 4.4.12 Estimate the size of an object with respect to a given measurement attribute (length, perimeter, area, or capacity). • 4.4.8 Convert measurements within a single system that are common in daily life (e.g., hours and minutes, inches and feet, centimeters and meters, quarts and gallons, liters and milliliters). (12.2, 12.3, 12.4, 12.7, 12.8, 12.9) ✓ 4.4.7. Measure liquids using both standard units and metric units. ✓ 4.46 Recognize the use of decimals in metric measures. <p>Data, Probability and Statistics</p> <ul style="list-style-type: none"> • 4.5.3 Given a set of data or a graph, describe the distribution of the data using median, range, or mode. (14.3, 14.4) ✓ 4.5.5 Use measures of central tendency to compare two sets of related data. • 4.5.1 Depict data using various representations (e.g., tables, pictographs, line graphs, bar graphs). (2.6, 14.5, 15.1, 15.2, 15.3, 15.4, 15.5, 20.8) ✓ 4.5.1 Create and label appropriate scales for graphs.

	<ul style="list-style-type: none"> ✓ 4.5.2 Evaluate how well various representations show the collected data. ✓ 4.5.3 Interpret and prepare pie charts using appropriate measurements of angles. ✓ 4.5.4 Develop and use stem-and-leaf plots. • 4.5.2 Solve problems using estimation and comparison within a single set of data.
WEEKS 7-9	STANDARD
	<p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 4.4.1 Classify lines and line segments as parallel, perpendicular, or intersecting. (16.1) ✓ 4.4.15 Explore properties of paths between points. • 4.4.4 Identify acute, obtuse, and right angles in two-dimensional shapes. (16.2, 16.3, 16.5) ✓ 4.4.3 Classify angles and triangles as obtuse, acute, or right. ✓ 4.4.4 Measure and draw angles. ✓ 4.4.2 Understand the definition of degree as it relates to the circle. • 4.4.5 Identify attributes of simple and compound figures composed of two- and three-dimensional shapes. (16.4, 16.7, 18.5) ✓ 4.4.1 Identify the basic parts of circles. ✓ 4.4.5 Determine if a figure is a polygon. ✓ 4.4.21 Recognize two-dimensional faces of three-dimensional shapes. • 4.4.10 Identify images resulting from reflections, translations, or rotations. (17.2) ✓ 4.4.16 Examine transformations in the coordinate plane. ✓ 4.4.17 Predict the results of a transformation of a geometric shape. ✓ 4.4.18 Determine whether a geometric shape has line and/or rotational symmetry. ✓ 4.4.19 Design and analyze simple tilings and tessellations. ✓ 4.4.20 Draw lines of symmetry in two-dimensional figures. • 4.4.9 Solve problems involving area and/or perimeter of rectangular figures. (18.1, 18.2, 18.3, 18.4) ✓ 4.4.8 Recognize that a measure of area represents the total number of same-sized units that cover the shape without gaps or overlaps. ✓ 4.4.9 Recognize that area does not change when two-dimensional figures are cut apart and rearranged. ✓ 4.4.10 Connect area measure to multiplication using a rectangular area model. ✓ 4.4.11 Estimate areas of rectangles in square inches and square centimeters.

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FOURTH GRADE-Math Pacing Guide For THIRD Grading Period

WEEKS 1-3	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> • 4.2.5 Generate equivalent forms of common fractions and decimals and use them to compare size. (19.2 19.3) • 4.2.6 Use the symbols $<$, $>$, and $=$ to compare common fractions and decimals in both increasing and decreasing order. (19.4) • 4.2.10 Solve contextual problems using whole numbers, fractions and decimals. (19.5, 19.6, 22.5) ✓ 4.2.13 Solve multi-step problems of various types using whole numbers, fractions and decimals. <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 4.1.7 Translate the details of a contextual problem into diagrams and/or numerical expressions, and express answers using appropriate units. ✓ 4.1.9 Develop a story problem that illustrates a given multiplication or division number sentence. ✓ 4.1.1 Understand the relationship between use of answers and the accuracy of the number. ✓ 4.1.2 Identify the range of appropriate estimates, including over-estimate and under-estimate. ✓ 4.1.3 Connect operations with decimals to money and make estimates. <p>Number and Operations</p> <ul style="list-style-type: none"> • 4.2.2 Locate and place mixed numbers on the number line.
WEEKS 4-6	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> • 4.2.7 Convert improper fractions into mixed numbers and/or decimals. (19.7) <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 4.1.8 Match the spoken, written, concrete (including base ten blocks), and pictorial representations of decimals. <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 4.2.2 Understand decimal notation as an extension of the base ten number system. ✓ 4.2.8 Generate equivalent forms of whole numbers, decimals, and common fractions. (e.g., $1/10$, $1/4$, $1/2$, $3/4$). ✓ 4.2.9 Compare equivalent forms of whole numbers, fractions, and decimals to each other and to benchmark numbers. ✓ 4.2.11 Use models, benchmarks, and equivalent forms to compare fractions/decimals and locate them on the number line.

	<ul style="list-style-type: none"> • 4.2.8 Add and subtract proper fractions with like and unlike denominators and simplify the answer. (20.1, 20.6, 20.7) <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 4.1.2 Compare decimals using concrete and pictorial representations. (21.4, 21.6) <p>Number and Operations</p> <ul style="list-style-type: none"> • 4.2.9 Add and subtract decimals through hundredths. (23.1, 23.2, 23.5) <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 4.1.3 Determine the correct change from a transaction. (2.4)
WEEKS 7-9	STANDARD
	<p>Data, Statistics, and Probability</p> <ul style="list-style-type: none"> • 4.5.4 List all possible outcomes of a given situation or event. (23.1, 23.2, 23.5) ✓ 4.5.6 Determine a simple probability. ✓ 4.5.7 Express a probability pictorially. <p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 4.4.2 Graph and interpret points with whole number or letter coordinates on grids or in the first quadrant of the coordinate plane. (24.1, 24.2) • 4.4.3 Construct geometric figures with vertices at points on a coordinate grid. ✓ 4.4.14 Explain how the components of a coordinate system are used to determine location.

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FOURTH GRADE-Math Pacing Guide for FOURTH Grading Period

WEEKS 1-3	STANDARD
	<p>Review all standards in preparation for TCAP testing</p>
WEEKS 4-6	
	<p>Cumulative Assessments for Mastery of Fourth Grade Standards</p>
WEEKS 7-9	
	<p align="center"><u>Lay the foundation for Fifth Grade.</u></p> <p align="center">Preview for Fifth Grade</p> <p>Number and Operations</p> <ul style="list-style-type: none"> • 5.2.1 Read and write numbers from millions to millionths in various contexts. • 5.2.9 Compare whole numbers and <u>decimals</u>, and fractions using the symbols $<$, $>$, and $=$. • 5.2.5 Solve addition and subtraction problems involving both fractions and <u>decimals</u>. • 5.2.4 Divide two- and three-digit numbers by one- and two-digit numbers. • 5.2.3 Select a reasonable solution to a real-world division problem in which the remainder must be considered. <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 5.1.2 Estimate fraction and <u>decimal</u> sums or differences. • 5.1.3 Recognize the unit associated with the remainder in a division problem or the meaning of the fractional part of a whole given in either decimal or fraction form. • 5.1.4 Identify missing information and/or too much information in contextual problems.

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CLEVELAND CITY SCHOOLS

Fifth Grade Math Curriculum Pacing Guide

The Math Pacing Guide for fifth grade is STANDARDS driven and has been reformatted for a more efficient flow throughout the school year. Every State Performance Indicator (SPI) and Check for Understanding has been covered and there are suggested Houghton Mifflin lessons listed in bold face at the end of the SPI's. Teachers will need to use additional resources to assist students in mastering each standard. The math textbook needs to be considered as a resource, not something to be covered from beginning to end. Each 5th grade teacher will receive a disc containing the 6th grade Houghton Mifflin teachers edition and workbook pages as an added resource.

The three-week increments in this guide have been set as guidelines to assist teachers in their planning and implementation of the SPI's. Differences in teaching styles and student demographics may create variation in the amount of time spent on each skill during a three-week span.

Checks for Understanding are the core standards for formative (teacher-created) and summative (TCAP) assessments in the classroom. Teaching the Checks is essential for mastery of the SPI's. In order for mastery of an SPI, it is imperative that students master the Checks. Teachers should pay special attention to the verbs in the Checks for Understanding (i.e. students should successfully analyze, explore, construct, etc.).

All SPI's and Checks for Understanding will be covered by the end of the third nine weeks. The fourth nine weeks is left for TCAP preparation, TCAP testing, cumulative review of assessments, and introducing sixth grade standards.

For many of the SPI's, the new calculators will be very helpful. The calculators can be available to students at all times. Students can be instructed to use more advanced calculator keys such as adding/subtracting fractions, order of operations, or exponent functions.

FIFTH GRADE – Math Pacing Guide for FIRST Grading Period

WEEKS 1-3	STANDARD
	<p>Numbers and Operations</p> <ul style="list-style-type: none"> • 5.2.1 Read and write numbers from millions to millionths in various contexts (1.1, 1.2, 1.3, 1.5) <ul style="list-style-type: none"> ✓ 5.2.1 Identify prime numbers up to 50. ✓ 5.2.4 Use divisibility rules to factor numbers ✓ 5.2.10 Use exponential notation to represent repeated multiplication of whole numbers • 5.2.9 Compare <u>whole numbers (and) decimals</u>, and fractions using the symbols $<$, $>$, and $=$. (1.4, 1.7) <ul style="list-style-type: none"> ✓ 5.2.9 Explore numbers less than 0 by extending the number line through familiar applications (e.g. temperatures below zero, owing money, measuring elevation below sea level). • 5.2.5 Solve <u>addition and subtraction</u> problems involving both fractions and <u>decimals</u>. (11.1, 11.2, 11.3) <ul style="list-style-type: none"> ✓ 5.2.3 Use visual models, benchmarks, and equivalent forms to add and subtract commonly used fractions and <u>decimals</u>. <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 5.1.2 Make reasonable estimates of fraction and <u>decimal</u> sums or differences. (11.4) <ul style="list-style-type: none"> ✓ 5.1.2 Make reasonable estimates of fractional and <u>decimal</u> sums or differences using models. ✓ 5.1.3 Explore different methods of estimation including rounding and truncating. ✓ 5.1.9 Use age-appropriate books, stories, and videos to convey ideas of mathematics. *(Applies all year.)
WEEKS 4-6	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> • 5.2.4 Divide two- and three-digit numbers by one- and two-digit numbers. (4.2, 4.4, 4.5, 5.1, 5.2, 5.4, 5.5, 14.4, 14.5, 14.6, 14.7) <ul style="list-style-type: none"> ✓ 5.2.4 Use divisibility rules to factor numbers ✓ 5.2.7 Understand the placement of the decimal point in calculations of multiplication and long division, including the placement in the estimation of the answer. ✓ 5.2.8 Understand that division by zero is undefined.

WEEKS 7-9	STANDARD
	<p>Mathematical Processes</p> <ul style="list-style-type: none"> • 5.1.3 Recognize the unit associated with the remainder in a division problem or the meaning of the fractional part of a whole given in either decimal or fraction form. (14.8) ✓ 5.1.4 Explore problems in different contexts to interpret the meaning of remainders as discrete values or not. ✓ 5.1.6 Communicate answers in correct verbal and numerical form; including use of mixed numbers or fractions and use of units. <p>Number and Operations</p> <ul style="list-style-type: none"> • 5.2.3 Select a reasonable solution to a real-world division problem in which the remainder must be considered. (5.7) <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 5.1.4 Identify missing information and/or too much information in contextual problems. (7.6) ✓ 5.1.5 Solve problems in more than one way and explain why one process may be more effective than another.

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FIFTH GRADE – Math Pacing Guide for SECOND Grading Period

WEEKS 1-3	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> • 5.2.5 Solve addition and subtraction problems involving both <u>fractions</u> and decimals. (10.2, 10.3, 10.4, 10.5, 10.6) • 5.2.6 Add and subtract mixed numbers. (10.4, 10.8) <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 5.1.7 Organize and consolidate verbal statements involving fractions and mixed numbers into diagrams, symbols, and numerical expressions. <p>Number and Operations</p> <ul style="list-style-type: none"> ✓ 5.2.3 Use visual models, benchmarks, and equivalent forms to add and subtract commonly used fractions and decimals. ✓ 5.2.5 Make reasonable estimates of fraction and decimal sums and differences. ✓ 5.2.6 Add and subtract mixed numbers. <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 5.1.2 Estimate <u>fraction</u> and decimal sums and differences. (10.1) ✓ 5.1.2 Make reasonable estimates of <u>fraction</u> and decimal sums or differences using models.
WEEKS 4-6	STANDARD
	<p>Number and Operations</p> <ul style="list-style-type: none"> • 5.2.8 Write terminating decimals in the form of fractions or mixed numbers. (19.3) • 5.2.2 Write the prime factorization of numbers through 50 using both exponential and standard notation. (9.2) ✓ 5.2.1 Identify prime numbers up to 50. ✓ 5.2.2 Use the prime factorization of two whole numbers to determine the greatest common factor and the least common multiple. ✓ 5.2.10 Use exponential notation to represent repeated multiplication of whole numbers. • 5.2.7 Recognize equivalent representations for the same number. (9.6) <p>Algebra</p> <ul style="list-style-type: none"> ✓ 5.3.6 Recognize there are many numbers between and two whole numbers on the number line. <p>Number and Operations</p> <ul style="list-style-type: none"> • 5.2.9 Compare <u>whole numbers</u>, decimals, and <u>fractions</u> using the symbols $<$, $>$, and $=$. (9.9) ✓ 5.2.9 Explore numbers less than 0 by extending the number line through familiar applications (e.g. temperatures below zero, owing money, measuring elevation below sea level).

WEEKS 7-9	STANDARD
	<p>Algebra</p> <ul style="list-style-type: none"> • 5.3.4 Given a set of values, identify those that make an inequality a true statement. (12.1, 21.2, 21.3, 22.2) ✓ 5.3.3 Solve single-step linear equations using inverse operations. ✓ 5.3.4 Solve single-step linear inequalities and graph solutions on a number line. ✓ 5.3.5 Determine if a given value is a solution to a linear equation/inequality. • 5.3.3 Find the unknown in single-step equations involving fractions and mixed numbers. (22.2) <p>Mathematical Processes</p> <ul style="list-style-type: none"> ✓ 5.1.8 Use patterns, models, and relationships as contexts for writing inequalities and simple equations. <p>Algebra</p> <ul style="list-style-type: none"> ✓ 5.3.1 Evaluate an expression by substituting non-negative rational number values for letter variables in the expression. ✓ 5.3.2 Use variables appropriately to represent numbers whose values are not yet known. • 5.3.1 Evaluate algebraic expressions involving decimals and fractions using order of operations. (5.6) • 5.3.2 Evaluate multi-step numerical expressions involving fractions using order of operations. (5.6)

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FIFTH GRADE – Math Pacing Guide for THIRD Grading Period

WEEKS 1-3	STANDARD
	<p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 5.4.6 Record measurements in context to reasonable degree of accuracy using decimals and/or fractions. ✓ 5.4.7 Understand, select, and use units of appropriate size and type to measure angles (15.2), lengths/distances (6.2, 6.4), area, surface area, and volume. ✓ 5.4.9 Correctly interpret significant digits in the accuracy of measurements and associated calculations. ✓ 5.4.10 Recognize that measurements are never exact. ✓ 5.4.11 Understand the usefulness of approximations. ✓ 5.4.12 Develop strategies for choosing correct tools of measurement. ✓ 5.4.13 Recognize and use measures of weight (6.3, 6.5) and temperature. <p>Mathematical Processes</p> <ul style="list-style-type: none"> • 5.1.1 Given a series of geometric statements, draw a conclusion about the figure described. (15.3, 15.4, 15.5) ✓ 5.1.1 Make and test conjectures about geometric properties and develop logical arguments to justify conclusions. <p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 5.4.2 Decompose irregular shapes to find perimeter and area. (16.1, 16.3, 16.4) ✓ 5.4.2 Find the area of a convex polygon by decomposing it into triangles/rectangles.
WEEKS 4-6	STANDARD
	<p>Geometry ad Measurement</p> <ul style="list-style-type: none"> • 5.4.1 Solve contextual problems that require calculating area of triangles and parallelograms. (16.5) ✓ 5.4.1 Develop the formula for the area of a triangle as it relates to the area of a parallelogram/rectangle. • 5.4.3 Identify a three-dimensional object from two-dimensional representations of that object and vice versa. (17.1, 17.3) • 5.4.4 Solve problems involving surface area and volume of rectangular prisms and polyhedral solids. (17.4, 17.6) ✓ 5.4.3 Build, draw, and work with prisms by means of orthogonal views, projective views, and nets. ✓ 5.4.4 Describe and identify the five regular (Platonic) solids and their properties with respect to faces, shapes of faces, edges, and vertices. ✓ 5.4.5 Quantify total volume as filling space with same-sized units of volume without gaps and overlap.

	<ul style="list-style-type: none"> ✓ 5.4.6 Decompose prisms to calculate surface area and volume.
WEEKS 7-9	STANDARD
	<p>Geometry and Measurement</p> <ul style="list-style-type: none"> • 5.4.5 Find the length of vertical or horizontal line segments in the first quadrant of the coordinate system, including problems that require the use of fractions and decimals. (23.1, 23.3) ✓ 5.4.8 Identify characteristics of the set of points that define vertical and horizontal line segments. <p>Data, Probability, and Statistics</p> <ul style="list-style-type: none"> ✓ 5.5.2 Represent data using ordered pairs in the first quadrant of the coordinate system. • 5.5.3 Calculate measures of central tendency to analyze data. (8.2) ✓ 5.5.5 Evaluate how different measures of central tendency describe data. ✓ 5.5.6 Identify outliers and determine their effect on mean, median, mode, and range. • 5.5.2 Make predictions based on various data representations, including double bar and line graphs. (7.1, 7.3, 7.4, 7.5) ✓ 5.5.1 Construct and analyze double bar and line graphs. ✓ 5.5.3 Design investigations to address a question and consider how data collection methods affect the nature of the data set. ✓ 5.5.4 Recognize the differences in representing categorical and numerical data. • 5.5.1 Depict data using various representation, including decimal and/or fractional data.

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FIFTH GRADE – Math Pacing Guide for FOURTH Grading Period

WEEKS 1-3	STANDARD
	<p>TCAP Preparation/Review</p> <p>TCAP Testing</p>
WEEKS 4-6	STANDARD
	<p>Cumulative Assessments for Mastery of Fifth Grade Standards</p>
WEEKS 7-9	STANDARD
	<p align="center">Introduction of Sixth Grade Standards</p> <p>Number and Operations</p> <ul style="list-style-type: none"> • 6.2.1 Solve problems involving the multiplication and division of fractions. (12.1, 12.2, 12.5) ✓ 6.2.2 Use area models to represent multiplication of fractions. ✓ 6.2.3 Create and solve contextual problems that lead naturally to division of fractions. • 6.2.2 Solve problems involving the addition, subtraction, multiplication, and division of mixed numbers. (10.4, 10.8, 12.3, 12.6)