TRG Mathematics Pacing Guide Alignment with Common Core Standards
First Grade

Time:	**4 Weeks - September**						
Theme/ Big Idea	**Objectives**	**Essential Questions**	**Strategy**	**Assessment**	**Vocabulary**	**Resources**	**Board Objectives**
Number Relationships	**Extend the counting sequence** 1. NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. **Understand place value** 1. NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: a. 10 can be thought of as a bundle of ten ones — called a "ten." b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). 1. NBT.3 Compare two two-digit numbers based on meanings of the tens and ones	What are numbers? How do we group numbers?	Use whole group, small group, and independent work to along with listed resources to develop understanding of whole number relationship and place value, including grouping in tens and ones.	**Before** Oral counting **During** Oral skip counting Response to flash cards Counting with base ten blocks	Count Greater Less Fewer Smallest Largest More Left Right Forward Backward Bigger Smaller Number line Grouping Add Subtract	Math Lessons: www.aaastudy.com Math Games: www.gamequarium.com www.funbrain.com www.arcademicskillbuilders.com www.mathisfun.com Games and Worksheets: www.aplusmath.com Base ten blocks Number line 100's chart Flash cards Straw bundles Counters	Count to 120, starting at any number less than 120 to become better problem solvers. Understand that the two digits of a two-digit number represent amounts of tens and ones to become better problem solvers. Use place value understanding and properties of

	digits, recording the results of comparisons with the symbols >, =, and <. **Use place value understanding and properties of operations to add and subtract** 1. NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.						operations to add and subtract to become better problem solvers.
Time:	**4 Weeks – October**						
Theme/ Big Idea	**Common Core**	**Essential Questions**	**Strategy**	**Assessment**	**Vocabulary**	**Resources**	**Board Objectives**
Addition and Subtraction	**Represent and solve problems involving addition and subtraction** 1. OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	How do numbers go together? How do numbers change?	Use whole group, small group, and independent work to along with listed resources to develop understandings of addition and subtraction	**Before** Representing addition and subtraction with base ten blocks **During** Game: Around the World	Sum Addition Subtraction Inverse Doubles Fact families Equal Greater than Less than Addends Difference Adding to Taking	Math Lessons: www.aaastudy.com Math Games: www.gamequarium.com www.funbrain.com www.arcademicskillbuilders.com www.mathisfun.com Games and Worksheets: www.aplusmath.com Math Resources: www.svsu.edu/supo	Represent and solve problems involving addition and subtraction to become better problem solvers. Understand and apply properties

	1. OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. **Understand and apply properties of operations and the relationship between addition and subtraction** 1. OA.3 Apply properties of operations as strategies to add and subtract. Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.) 1. OA.4 Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. **Add and subtract within 20** 1. OA.5 Relate counting to		and strategies for additions and subtractions within 20.	**<u>After</u>** Timed Test Mental math	from Together Apart Comparing Symbol Represent Equation Number sentence Fact families Digit	Counters Flash cards Connecting cubes	of operations and the relationship between addition and subtraction to become better problem solvers.

	addition and subtraction (e.g., by counting on 2 to add 2). 1. OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). **Work with addition and subtraction equations** 1. OA.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 +? = 11, 5 = □ – 3, 6 + 6 = □..						

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Time	4 Weeks - November						
Theme	Objective	Essential Question	Strategy	Assessment	Vocabulary	Resources	Board Objectives
Addition and Subtration	**Use place value understanding and properties of operations to add and subtract** 1. NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. 1. NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero	How do numbers go together? How do numbers change?	Use small group, whole group, and independent work, along with counters and place value discs to guide students.	**Before** Add and subtract using base ten blocks **During** Game: Around the World **After** Timed tests	Addends Difference Adding to Taking from Together Apart Comparing Symbol Represent Equation Number sentence Fact families Digit	Play Money Tangrams Number Tiles Place Value Discs Place Value Strips Place Value Blocks Base-10 Blocks Counters Hundreds Chart Number Cubes and Regular Dice Place Value Chart Measuring Tools Fraction Circles Equation Tiles Plastic Coins Geometric Foam Shapes Pattern Blocks Math Lessons: www.aaastudy.com Math Games: www.gamequarium.com www.funbrain.com www.arcademicskillbuilders.com www.mathisfun.com Games and Worksheets: www.aplusmath.com	Add within 100, to become better problem solvers. Subtract multiples of 10 in the range 10-90 to become better problem solvers.

	differences), 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. **Represent and interpret data** 1. MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.					Flashcards Number line	
Time:	**3 Weeks – December**						
Theme/ Big Idea	**Common Core Objective**	**Essential Questions**	**Strategy**	**Assessment**	**Vocabulary**	**Resources**	**Board Objective**
Equations	**CRITICAL AREA: Develop understanding of addition, subtraction, and strategies for addition and subtraction within 20**	How do numbers change?	Use whole group, small group, and independe	**Before** Adding and subtractin g basic	Add Subtract Difference Sum Equation	Math Lessons: www.aaastudy.com Math Games: www.gamequarium.com	Work with addition and subtraction equations

	<u>Content moving into 1st grade</u> **Work with addition and subtraction equations** 1. OA.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.		nt work to along with listed resources to develop	facts **<u>During</u>** Practice using equal sign **<u>After</u>** Test or quiz with problems determining whether equations are true or false	Number sentence Addend	www.funbrain.com www.arcademicskillbuilders.com www.mathisfun.com Games and Worksheets: www.aplusmath.com Number line Flash cards Base ten blocks	to become better problem solvers.
Time:	**4 Weeks – January**						
Theme/ Big Idea	**Common Core Objective**	**Essential Question**	**Strategy**	**Assessment**	**Vocabulary**	**Resources**	**Board Objective**
Using Clocks to Tell Time	**Tell and write time** 1. MD.3 Tell and write time in hours and half-hours using analog and digital clocks.	What is time?	Use whole group, small group, and independent work to along with listed resources	**<u>Before</u>** Observation **<u>During</u>** Orally tell time Write time	Clock Minute hand Hour hand Analog Digital Half hour Minute Hour	Math Games: www.mathisfun.com Teacher clock Student clock	Tell and write time in hours and half-hours using analog and digital clocks to become

			to develop understanding of time.	when shown clocks **After** Test or quiz with pictures of clocks			better problem solvers.
Time:	**4 Weeks – February**						
Theme/ Big Idea	**Common Core Objective**	**Essential Questions**	**Strategy**	**Assessment**	**Vocabulary**	**Resources**	**Board Objectives**
Graphing Data on Pictographs	**Represent and interpret data** 1. MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	What is a graph?	Use interactive bar graph to help students graph data.	**Before** Observation **During** Making pictographs from class data (e.g., shirt color, favorite sports, number of letters in first name, etc.) **After**	Legend Pictograph Bar graph Pie chart More Less Horizontal Vertical Key Symbolize Scale Data points Category	Interactive Bar Graph: http://www.amblesideprimary.com/ambleweb/mentalmaths/grapher.html Math Games: www.mathisfun.com Graph paper Manipulatives	Organize, represent, and interpret data with up to three categories to become better problem solvers.

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				Interpret data given pictographs			
Time	4 Weeks - March						
Theme/ Big Idea	Objective	Essential Question	Strategy	Assessment	Vocabulary	Resources	Board Objective
Graphing Data on Pictographs	G.SR.01.03 Create and describe patterns, such as repeating patterns and growing patterns using number, shape, and size. G.SR.01.04 Distinguish between repeating and growing patterns. G.SR.01.05 Predict the next element in a simple repeating pattern. G.SR.01.06 Describe ways to get to the next element in simple repeating patterns.	How can we organize numbers?	Use interactive bar graph to help students graph data.	Interpret data given pictographs	Pattern Same Different Number Size Shape Repeat Growing Predict Describe	Math Games: www.mathisfun.com Manipulatives	Create and describe patterns involving geometric objects to become better problem solvers.

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Time:	**4 Weeks – April**						
Theme/ Big Idea	**Common Core Objective**	**Essential Question**	**Strategy**	**Assessment**	**Vocabulary**	**Resources**	**Board Objective**
Measuring Length	**Measure lengths indirectly and by iterating length units** 1. MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object. 1. MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.	What is measurement? What can we measure?	**Develop understanding of linear measurement and measuring lengths as iterating length units**	**Before** Observation **During** Observation **After** Put 3 objects in order by length Use paperclips to measure objects	Compare Length Unit Object Shorter Gap Overlap Sum Add Count Compare Line Straight	Number line Objects Ruler	Order three objects by length; compare the lengths of two objects indirectly by using a third object to become better problem solvers. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end to become

							better problem solvers.
Time:	**4 Weeks – May**						
Theme/ Big Idea	**Objective**	**Essential Question**	**Strategy**	**Assessment**	**Vocabulary**	**Resources**	**Board Objective**
Shapes	**Reason with shapes and their attributes** 1. G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); for a wide variety of shapes; build and draw shapes to possess defining attributes.	What are shapes?	**Reason about attributes of, and composing and decomposing geometric shapes**	Observe students using blocks to build shapes	Rectangle Squares Trapezoid Triangles Half-circles Quarter-circles Cubes Prisms Cones	Math Lessons: www.aaastudy.com Math Games: www.gamequarium.com www.funbrain.com www.arcademicskillbuilders.com www.mathisfun.com Games and Worksheets: www.aplusmath.com	Build and draw shapes to possess defining attributes to become better problem solvers.
Shapes	**Reason with shapes and their attributes** 1. G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes	How does dimension change shapes?	**Reason about attributes of, and composing and decomposing geometric shapes**	Drawing shapes Sort blocks by attributes	Rectangle Squares Trapezoid Triangles Half-circles Quarter-circles Cubes Prisms Cones Cylinders Composite shape	Math Lessons: www.aaastudy.com Math Games: www.gamequarium.com www.funbrain.com www.arcademicskillbuilders.com www.mathisfun.com Games and Worksheets: www.aplusmath.com Straws and twist ties	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-

	from the composite shape.[1]				Two-dimensional shape Three-dimensional shape Equal Halves Fourths Quarters Whole Shape Closed Sides Color Orientation Position Size Attributes	Variety of 2D and 3D shapes Shape stencil Ruler Graph paper	dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape to become better problem solvers.
Time	3 Weeks - June						
	1. G.3. Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares.	Where can we find shapes?	**Reason about attributes of, and composing and decomposing geometric**	Drawing shapes Sort blocks by attributes	Rectangle Circle Half Quarter Fourth	Games and Worksheets: www.aplusmath.com Straws and twist ties Variety of 2D and 3D shapes Shape stencil	Cut circles and rectangles into two and four equal shares to become better

[1] Students do not need to learn formal names such as "right rectangular prism"

	Understand for these examples that decomposing into more equal shares creates smaller shares.		**shapes**				problem solvers.