

Unit 1: Establishing Routines							
Overview: To practice counting on a number line; to practice comparing pairs of numbers; to practice daily routines for marking on slates and making and recording weather observations; to learn how to represent data using tally counts.							
Big Ideas		Number 1: Every number has a point on the number line. Comparison: Numbers can be compared by their relative sizes, by analyzing corresponding place values or by their position on the number-line. Chance: Collecting data on the occurrence of an event can help to determine its likelihood which can then be used to make predictions about the event. Data: Data can be collected, classified, analyzed & displayed using tables, charts & graphs.					
Performance Expectations		Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs
Routines	<p>K.3.C Describe the location of one object relative to another object using words such as in, out, over, under, above, below, between, next to, behind, and in front of.</p> <p>1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100.</p> <p>1.1.B Name the number that is one less or one more than any number given verbally up to 120.</p> <p>1.1.C Read aloud numerals from 0 to 1,000.</p> <p>1.3.B Identify and name two-dimensional figures, including those in real-world contexts, regardless of size or orientation.</p> <p>1.5.A Represent data using tallies, tables, picture graphs, and bar-type graphs.</p> <p>2.3.D Describe the relative size among minutes, hours, days, weeks, months, and years.</p> <p>3.5.B Measure temperature in degrees Fahrenheit and degrees Celsius using a thermometer.</p>		<p>Comments: Routines are an essential component of quality math instruction. Described extensively in your Teacher’s Reference Manual starting on p41: “Unit 5: Organizing Daily Routines and Displays. Read the descriptions and map out which routines you will start with and which routines you will begin later. Each Lesson in Unit 1 introduces additional Routines that you will be using throughout the school year.</p>			<p>Advanced Prep: Prepare the materials for your routines before school starts in September so you can begin on the first day. Items for Display (listed on TLG p xxvii) include Number Line (-35 to 180), Class Data Pad, Number Grid Poster, Thermometer Poster, Monthly Calendar, Attendance Chart, Daily Class Schedule, Job Chart and N, S, E, W directional indicators.</p>	
1♦1	<p>K.1.A Rote count by ones forward from 1 to 100 and backward from any number in the range of 10 to 1.</p> <p>1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100.</p> <p>1.1.D Order objects or events using ordinal numbers.</p>	Count by 1s (Mental Math). PE K.1.A	Use language such as first, second, and twelfth day of the month to reinforce ordinal numbers to support PE 1.1.D .	number line		Use either “Growing Number Line” or “Class Number Line”; TLG p13. Planning Ahead: For Lesson 1♦3, 10 pennies per student in tool kit.	Count by 1s to 20. PE K.1.A
1♦2	<p>1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100.</p> <p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.2.C Represent addition and subtraction on a number line.</p>	Use a number line to determine number of students that are absent (counting up). PE 1.2.C		less than, more than, equal to	P1 <i>Monster Squeeze</i> : MM p4-5 PE 1.1.E	Prepare brackets or frames for Monster Squeeze TLG p21, MM p4-5. Planning Ahead: For Lesson 1♦4, you will need socks from students or other material for white board erasers.	Count by 1s and 5s. PE 1.1.A
1♦3	<p>K.1.E Count objects in a set of up to 20, and count out a specific number of up to 20 objects from a larger set.</p> <p>K.1.F Compare two sets of up to 10 objects each and say whether the number of objects in one set is equal to, greater than, or less than the number of objects in the other set.</p> <p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.3.B Identify and name two-dimensional figures, including those in real-world contexts, regardless of size or orientation.</p>	Count objects by 1s. PE K.1.E	Although the <i>Penny-Dice Game</i> is a Kindergarten skill, it is great reinforcement of counting and comparing quantities. Have students use more pennies if they are ready for enrichment. To enhance the lesson you could have students create patterns and name their patterns (i.e. hexagon, triangle, square) to support PE 1.3.B .	tool kit, pattern-block template square, hexagon, circle, triangle, trapezoid, rhombus	P1 <i>Penny-Dice Game</i> PE K.1.E ; P2 <i>Monster Squeeze</i> : MM p4-5 PE 1.1.E	Prepare tool kit, one per student (pattern block template, 10 pennies, & 1 die), MM p8, and one number line section per partner (save for future lessons). Prepare numbers lines for “Monster Squeeze”, MM p8. Set up “Lost and Found” Routine for misplaced tool-kit items.	Compare groups of pennies and tell which group has more. PE K.1.F
1♦4	<p>K.1.E Count objects in a set of up to 20, and count out a specific number of up to 20 objects from a larger set.</p> <p>1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100.</p> <p>1.1.E Write, compare, and order numbers to 120.</p>	Count by 5s (Mental Math). PE 1.1.A		slate	P2 <i>Penny-Dice Game</i> PE K.1.E	Decide on management of slates. Planning Ahead: For Lesson 1♦6, prepare demonstration set of number cards, 0-15, using 4 X 6 index cards. Use Everything Math deck for student number cards or Activity Sheets 1 & 2, labeled distinctly.	Write the numbers 1 and 2 legibly. PE 1.1.E
1♦5	<p>K.1.E Count objects in a set of up to 20, and count out a specific number of up to 20 objects from a larger set.</p> <p>1.1.B Name the number that is one less or one more than any number given verbally up to 120.</p> <p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.2.C Represent addition and subtraction on a number line.</p>	Use a number line to solve and explain “one more” and “one less” stories. PE 1.1.B		less than, more than	P1 <i>Bunny Hop</i> : MM p341 PE 1.2.C ; P2 <i>Penny-Dice Game</i> PE K.1.E		Name numbers before and after a given number, using a number line. PE 1.1.E

1♦6	<p>K.1.E Count objects in a set of up to 20, and count out a specific number of up to 20 objects from a larger set.</p> <p>1.1.B Name the number that is one less or one more than any number given verbally up to 120.</p> <p>1.1.C Read aloud numerals from 0 to 1,000.</p> <p>1.1.E Write, compare, and order numbers to 120.</p>	<p>Compare whole numbers with values up to 15.</p> <p>PE 1.1.E</p>	<p><i>Top-It</i> Game is introduced. Students need to read the numbers aloud to support PE 1.1.C.</p>	<p>less than, more than</p>	<p>P1 <i>Top-It</i>: MRB p154, MM p305 PE 1.1.E; P2 <i>Monster Squeeze</i>: MM p4-5 PE 1.1.E; P3 <i>Penny Dice Game</i> PE K.1.E</p>	<p>Label student Math Decks or SJ, Activity Sheet 1; Use number lines from 1♦3. Consider laminating number cards (math journal activity sheet 1) and number lines (math master pg. 3) for use each year.</p>	<p>Tell the number that is one more and one less than any number up to 10.</p> <p>PE 1.1.B</p>
1♦7	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.1.H Group and count objects by tens, fives, and twos.</p> <p>1.5.A Represent data using tallies, tables, picture graphs, and bar-type graphs.</p> <p>1.5.B Ask and answer comparison questions about data.</p>	<p>Represent numbers using tally marks.</p> <p>PE 1.1.H & 1.5.A</p>	<p>Create picture graph of tally chart to count children's pets PE 1.5.A Ask comparison questions about the picture graph you created (i.e. Which pet do we have the most of? Least? How many more dogs than cats?) to support PE1.5.B.</p>	<p>tally mark</p>	<p>P2 <i>Top-It</i>: MRB p154, MM p305 PE 1.1.E</p>	<p>Create a class data chart (TLG p43-44), coins or straws to count days; (E) TLG p42 for can & pennies.</p>	<p>Write the numbers 3 and 4 legibly.</p> <p>PE 1.1.E</p>
1♦8	<p>1.5.A Represent data using tallies, tables, picture graphs, and bar-type graphs.</p> <p>1.5.B Ask and answer comparison questions about data.</p>	<p>Use tally marks to record rolls of a die.</p> <p>PE 1.5.A</p>	<p>Create a class bar graph of the results and ask comparison questions about the graph to support PE1.5.A & 1.5.B.</p>		<p>P3E <i>Rock, Paper, Scissors</i>: MM p352 PE 1.5.A</p>	<p>For Part 3 (R), 3" x 5" index cards; For (E), MM p352, 1 per 2 students. Planning Ahead: See TLG p51 for preparing & marking number cards.</p>	<p>Represent numbers using tally marks. PE 1.5.A</p>
1♦9	<p>1.1.D Order objects or events using ordinal numbers.</p> <p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.4.F Name the days of the week and the months of the year, and use a calendar to determine a day or month.</p>	<p>Use a calendar to answer questions about days, weeks, months and dates.</p> <p>PE 1.4.F</p>	<p>Use language like Sunday is the first day of the week, Monday is the second day of the week to add in ordinal number practice using days of the week. Make this a part of your calendar time and do it every day to support PE 1.1.D.</p>	<p>calendar; date</p>		<p>Class Calendar displayed for students to access, For Part 3 (E), copies of variety of calendars.</p>	<p>Write the numbers 5 and 6 legibly.</p> <p>PE 1.1.E</p>
1♦10	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.2.C Represent addition and subtraction on the number line.</p>	<p>Compare whole numbers with values up to 22. PE 1.1.E</p>			<p>P1 <i>Top-It</i>: MRB p154, MM p305 PE 1.1.E; P2 <i>Monster Squeeze</i>: MM p4-5 PE 1.1.E</p>	<p>Each student needs number cards 0 – 22 (Math Deck or Activity Sheet 1-2 SJ); Number line sections from 1♦3 Optional poster of small group rules.</p>	<p>Count hops on a number line. PE 1.2.C</p>
1♦11	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.2.C Represent addition and subtraction on the number line.</p>	<p>Use a number line to solve problems (Mental Math).</p> <p>PE 1.2.C</p>			<p>P2 <i>Top-It</i>: MRB p154, MM p305 PE 1.1.E</p>	<p>EXPLORATION: For organizing Explorations, see TLG p61-62 (materials needed: pattern blocks, base-10 blocks, geoboards); For Part 3 (R), see TLG p 63 in margin. Planning Ahead: Thermometer Poster prep. See TLG p63 & 66-67.</p>	<p>Compare numbers and tell which is greater.</p> <p>PE 1.1.E</p>
1♦12	<p>1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100.</p> <p>1.1.H Group and count objects by tens, fives, and twos.</p> <p>1.2.C Represent addition and subtraction on the number line.</p> <p>1.5.A Represent data using tallies, tables, picture graphs, and bar-type graphs.</p> <p>1.5.B Ask and answer comparison questions about data.</p>	<p>Use a number line to count by 2s (Mental Math).</p> <p>PE 1.1.A</p>	<p>Discuss strategies for counting tally marks (i.e. recognizing five and count up or down, group by five) to support PE 1.1.H. Create a class picture graph of tally chart to show favorite weather to support PE 1.5.A. Ask comparison questions about the picture graph you created (Which season was the favorite? Least favorite? How many more students chose Fall as their favorite season than Spring?) to support PE 1.5.B.</p>	<p>temperature, degree, thermometer, Fahrenheit</p>	<p>P2 <i>Bunny Hop</i>: MM p341 PE 1.2.C</p>	<p>2-Day Lesson. Use MM p307 - symbols for weather chart; See TLG p66-67 for thermometer poster prep.</p>	<p>Count by 2s to 8.</p> <p>PE 1.1.A</p>
1♦13	<p>K.1.E Count objects in a set of up to 20, and count out a specific number of up to 20 objects from a larger set.</p> <p>1.2.H Solve and create word problems that match addition and subtraction equations.</p>	<p>Share number story strategies and solutions with pennies. PE 1.2.H</p>	<p>Begin weekly routine of having students look at equations like $7-4=3$ and connect it to a situation or problem using objects, pictures, or words to support PE 1.2.H.</p>	<p>number story</p>	<p>P2 <i>Penny Dice Game</i> PE K.1.E</p>		<p>Solve simple number stories.</p> <p>PE 1.2.H</p>

Unit 2: Everyday Uses of Numbers							
Overview: To explore various uses of numbers; to introduce the analog clock; to practice finding the values of various combinations of pennies and nickels; to introduce number models for change-to-more and to change-to-less situations.							
Big Ideas		Equivalence: Any number or equation can be represented in multiple ways that have the same value. Comparison: Numbers have absolute value and can be compared and ordered by their relative size and by analyzing corresponding place value. Estimation: A calculated guess can be made by using numbers that are close to actual numbers but easier to compute.					
	Performance Expectations	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs
2♦1	1.2.C Represent addition and subtraction on the number line. 1.1.E Write, compare, and order numbers to 120.	Use a Number-Grid to count up and back by ones from a given number. PE 1.2.C	Modification for Rolling for 50: Instead of using a standard die, write rules on a blank die or use a spinner (i.e. 3 up)	number grid	P1 <i>Rolling for Fifty</i> ; SMJ p7 PE 1.2.C ; P2 <i>Top-it</i> ; MRB p154, MM p305 PE 1.1.E	Number Grid poster – color return sweeps to match number grid in MRB.	Compare numbers. PE 1.1.E
2♦2	1.1.E Write, compare, and order numbers to 120.	Use numbers to record personal information. PE 1.1.E	If your students do not know their personal information, provide a card or label showing their telephone number, full name, and age. Students need to know 9-1-1 as emergency phone number, rather than the ten-digit numbers.			Display number grid poster; Create display area for examples of numbers; Have list of phone #s for student use with Home Link 2♦1. If using adaptation, have cards/labels ready.	Write numbers 7 and 8 legibly. PE 1.1.E
2♦3	1.1.F Fluently compose and decompose numbers to 10. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.2.G Quickly recall addition facts and related subtraction facts for sums equal to 10.	Use counters to find pairs of numbers that equal 10 (complements of 10). PE 1.1.F & 1.2.G	<i>Two-Fisted Penny Addition</i> should be played often to help build student's recall of sums of 10. A variation could be that the teacher fills in left hand column of the <i>Two-Fisted Penny Addition</i> activity to support PE 1.1.F .	math boxes	P3 <i>Two Fisted Penny Addition</i> MM p25 PE 1.1.F & 1.2.F	For Enrichment activity: MM p27, 2 per partner. See TLG p108 for mystery bags prep.	Represent sums of 10. PE 1.1.F
2♦4	1.2.C Represent addition and subtraction on the number line. 1.1.E Write, compare, and order numbers to 120.	Use a Number-Grid to determine the amount counted up (Mental Math). PE 1.2.C		unit box, unit		Label (number) Calculators; Can or container to drop pennies in; For Readiness Activity, see TLG p113 – need paper bags and index cards.	Write numbers 0 and 9 legibly. PE 1.1.E
2♦5	1.1.E Write, compare, and order numbers to 120. 1.2.C Represent addition and subtraction on the number line. 2.3.E Use both analog and digital clocks to tell time to the minute.	Estimate time by 'reading' the hour hand on an analog clock. PE 2.3.E ▼	To support telling time to the minute in second grade the first grade goal is to master identifying parts of a clock (hour hand, minute hand) and telling time to the hour and half hour.	analog clock, hour hand, minute hand, estimate	P2 <i>Rolling for Fifty</i> ; SMJ p7 PE 1.2.C	Prepare demo clock, see TLG p115; Copy MM p31 (cardstock).	Order numbers. PE 1.1.E
2♦6	2.3.E Use both analog and digital clocks to tell time to the minute. 1.1.H Group and count objects by tens, fives, and twos 1.1.F Fluently compose and decompose numbers to 10.	Tell time to the nearest hour on an analog clock. PE 2.3.E		clockwise, midnight, noon, A.M., P.M.		Demonstration clocks from 2♦5; Students make clocks using paper plates/hole punch or MM p32 & tag board; For Extra Practice activity: MM p310.	Find equivalent names for numbers (Count tally marks). PE 1.1.H
2♦7	K.1.E Count objects in a set of up to 20 and count out a specific number of up to 20 objects from a larger set. 1.2.C Represent addition and subtraction on the number line.	Sort dominoes by the number of dots on one half (Exploration C). PE K.1.E		ruler	P2 <i>Rolling for Fifty</i> ; SMJp7 PE 1.2.C	EXPLORATIONS: For organizing Explorations, see TLG 125-126 (Materials needed: tool kit rulers, MM p35 and 37, 8 objects from 1" – 1") For Readiness activity: 10 pairs of string, each pair of different length.	Count on a number grid. PE 1.2.C
2♦8	K.1.E Count objects in a set of up to 20 and count out a specific number of up to 20 objects from a larger set. K.1.F Compare two sets of up to 10 objects each and say whether the number of objects in one set is equal to, greater than, or less than the number of objects in the other set. 1.1.A Count by 1's forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100. 1.1.E Write, compare, and order numbers to 120. 1.1.F Fluently compose and decompose numbers to 10.	Estimate, count and compare handfuls of pennies (Penny Grab). PE K.1.E▲ & K.1.F▲	To support money skills in second grade, the First grade goal is to master identifying and naming the value of pennies, nickels, and dimes, and counting a collection of the same coin. <i>Penny Plate</i> should be played often to help build student's recall of sums to 10 to support PE 1.1.F	penny, cent	P1 <i>Penny Grab</i> ; MM p350 PE 1.1.E ; P2 <i>Penny Plate</i> ; MRB p146 PE 1.1.F ; P3 <i>Penny Dice Game</i> PE K.1.E	Magnifying lenses and 10 pennies per student; Prepare "Story of Money" poster (TLG p130 & 683).	Compare quantities of pennies. PE K.1.F▲

2♦9	<p>1.1.A Count by 1's forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100</p> <p>2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value.</p>	Count and exchange pennies for nickels. PE 2.2.H		nickel		Display Story of Money poster Each student needs 5 nickels (nickels go in tool-kits).	Count by 5s. PE 1.1.A
2♦10	<p>2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value.</p> <p>2.2.I Determine the value of a collection of coins totaling less than \$1.00.</p>	Count nickels and pennies using a counting on strategy. PE 2.2.I			<i>P2 Penny- Nickel Exchange</i> PE 2.2.H	For Readiness activity: paper bag with pennies/nickels for partners For Enrichment activity: MM p43 for each partner (\$1 worth of pennies/nickels per student); Collect items for 'store' see TLG p144.	Count nickels and pennies. PE 2.2.I
2♦11	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.2.B Use the equal sign (=) and the word equals to indicate that two expressions are equivalent.</p> <p>2.2.I Determine the value of a collection of coins totaling less than \$1.00.</p> <p>2.3.E Use both analog and digital clocks to tell time to the minute.</p>	Write an equation (number model) using "+" and "=" symbols. PE 1.2.B	Extend lesson to allow ample time for students to write their own equations (number model) to support PE1.2.B .	add, plus, is equal to, number model, equation	<i>P3E Nickel-Penny Grab</i> : MM p347 PE 2.2.I & 1.1.E	2-day lesson. Container or can for pennies	Tell time to the hour. PE 2.3.E
2♦12	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.1.F Fluently compose and decompose numbers to 10.</p> <p>1.2.B Use the equal sign (=) and the word equals to indicate that two expressions are equivalent.</p> <p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p> <p>2.2.I Determine the value of a collection of coins totaling less than \$1.00.</p>	Write an equation using "-" and "=" symbols. PE 1.2.B	Modification: Play <i>Bunny-Hop Subtraction</i> starting at 20 instead of <i>High Roller</i> to reinforce the subtraction lesson. The cup activity on TLG p.151 would work well as an addition to your calendar routine. Use 10 cups often to support sums to 10 to support PE 1.1.F	subtract, minus	<i>P2 High Roller. (Moved to 3♦3)</i> MM p344 PE 1.1.E & 1.2.F	12 paper cups; Use real nickels and pennies for Mental Math/Reflexes.	Find sums of 1-digit numbers. PE 1.2.F
2♦13	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.2.H Solve and create word problems that match addition and subtraction equations.</p> <p>2.2.I Determine the value of a collection of coins totaling less than \$1.00.</p> <p>2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value.</p>	Share and justify strategies for solving number stories with nickels and pennies. PE 1.2.H & 2.2.H	Share and justify strategies are mentioned in several Learning Targets. At times, the TLG mentions sharing opportunities but there may not be a detailed description of a possible discussion. As part of High Leverage Moves, have more than one student not only share, but also explain why or how they determined their responses.		<i>P2 Coin Top-It</i> PE 1.1.E & 2.2.I	For Readiness activity: 7 large poster paper (see TLG p160).	Count nickels and pennies. PE 2.2.I

Unit 3: Visual Patterns, Number Patterns, and Counting						Recommended Time Frame: October 27 – November 20		
Overview: To explore numeric, visual, and concrete patterns; to introduce addition and subtraction on the number line; to introduce the Frames-and-Arrows routine; and to find the values of collections of dimes, nickels, and pennies.								
Big Ideas Patterns: Patterns repeat and can be extended in predictable ways. Place Value: There is a predictable pattern in the Base-Ten numeration system. The value of the digits 0-9 is determined by their position.								
	Performance Expectations	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
3♦1	K.2.A Copy, extend, describe, and create simple repetitive patterns. 1.1.B Name the number that is one less and one more than any number given orally up to 120.	Create and extend shape patterns. PE K.2.A		pattern	<i>P2 Before and After:</i> MRB p126 PE 1.1.B	16 craft sticks per partner.	Create and extend patterns. PE K.2.A	TLG p186, No. 1: "How do you know which is the winning number in <i>Top-It?</i> ?"
3♦2	1.1.I Classify a number as odd or even and demonstrate that it is odd or even 1.2.I Recognize, extend, and create number patterns 2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value.	Use pennies to determine patterns in odd and even numbers. PE 1.1.I & 1.2.I		even number; odd number	<i>P2 Penny-Nickel Exchange</i> PE 2.2.H	40 pennies per partner.	Distinguish between even and odd numbers. PE 1.1.I	TLG p192, "How do you know which coins show the cost in No. 1?"
3♦3	1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100. 1.1.E Write, compare, and order numbers to 120. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.2.I Recognize, extend, and create number patterns	Determine patterns on a Number-Grid when counting by twos. PE 1.1.A & 1.2.I	After briefly discussing probability in part 2, introduce the game <i>High Roller</i> (from 2♦12)	column; row	<i>P2 High Roller (Moved from lesson 2♦12):</i> MM p344 PE 1.1.E & 1.2.F	Overhead transparency of number grid or large laminated grid with erasable pens; Optional: use "Each Orange Has 8 Slices" book as support.	Compare numbers. PE 1.1.E	
3♦4	1.1.B Name the number that is one less or one more than any number given verbally up to 120. 1.1.I Classify a number as odd or even and demonstrate that it is odd or even 1.2.C Represent addition and subtraction on the number line 1.3.C Combine known shapes to create shapes and divide known shapes into other shapes.	Sort dominoes by Odd and Even numbers of dots (Exploration A). PE 1.1.I	Extend Exploration B to allow ample time for students to cover shapes in a variety of ways. This is one of the few activities to support PE1.3.C . Have students create their own figure by combining pattern blocks, trace the outer edge of their figure. Have a partner use blocks to fill it in differently.		<i>P2 Before and After:</i> MRB p126 PE 1.1.B	EXPLORATIONS: For organizing Explorations, see TLG p200-202 (Materials needed: MM p57-62, dominoes, pattern blocks) 3♦5 Part 3 (R) uses a large, on-the-floor number line (TLG p208).	Count spaces on a number grid. PE 1.2.C	
3♦5	1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens 1.1.E Write, compare, and order numbers to 120. 1.2.C Represent addition and subtraction on the number line 2.2.I Determine the value of a collection of coins totally less than \$1.	Use a number line to count up or back from a given number. PE 1.2.C	Connect skip counting to hops on the number line to support addition PE 1.2.C .	number line; negative number	<i>P2 Coin Top-It</i> PE 2.2.I & 1.1.E	For Part 3 (R) activity: see TLG p208 – large number line – save for future lessons.	Skip Count. PE 1.1.A	
3♦6	1.2.B Use the equal sign (=) and the word equals to indicate that two expressions are equivalent. 1.2.C Represent addition and subtraction on the number line 1.2.H Solve and create word problems that match addition and subtraction equations.	Use a number line to solve addition and subtraction number stories. PE 1.2.C & 1.2.H			<i>P3EP Bunny Hop.</i> MM p341 PE 1.2.C		Write number models. PE 1.2.B	
3♦7	1.5.B Ask and answer comparison questions about data. 2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value. 2.3.E Use both analog and digital clocks to tell time to the minute.	Tell time to the nearest half-hour. PE 2.3.E		half-past (the hour)	<i>P2 Penny-Nickel Exchange</i> PE 2.2.H	Demonstration clock.	Use tally chart to answer questions. PE 1.5.B	TLG p217, "How do you know if a number is even or odd?"

3♦8	<p>1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens</p> <p>1.2.I Recognize, extend, and create number patterns</p> <p>2.3.E Use both analog and digital clocks to tell time to the minute.</p>	Use a rule to complete repeated addition or subtraction problems (Frames-and-Arrows). PE 1.2.I		Frames-and-Arrows diagram; frame; arrow; arrow rule		Ask students to bring 10 dimes each for 3♦11.	Count up and back from a given number. PE 1.1.A▲	TLG p222, "Why is it important to use a calendar?"
3♦9	1.2.I Recognize, extend, and create number patterns	Determine the 'rule' and solve Frames-and-Arrows problems. PE 1.2.I					Solve Frames-and-Arrows problems. PE 1.2.I	
3♦10	<p>1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens</p> <p>2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value.</p>	Count forward and backward by 1s, 2s, and 5s from a given number. PE 1.1.A	Counting on a calculator can be difficult for students even when done as a class. The most important learning is for students to identify and describe the patterns they see when skip counting.	program	<i>P2 Penny-Nickel Exchange</i> PE 2.2.H	Calculators (preview functions to see what fits with lesson).	Count by 5s and then by 1s. PE 1.1.A	TLG p233, "How do you find a missing number to make a sum of 10?"
3♦11	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value.</p> <p>2.2.I Determine the value of a collection of coins totaling less than \$1.00.</p>	Show money equivalencies with the fewest coins possible. PE 2.2.H			<i>P2 Coin Top-It</i> PE 1.1.E & 2.2.I	Story of Money poster (lesson 2♦8) 10 dimes for each student (goes in tool-kit).	Make coin exchanges. PE 2.2.H	TLG p239, "How do you find the missing numbers in a Frames-and-Arrows problem?"
3♦12	<p>1.2.H Solve and create word problems that match addition or subtraction equations.</p> <p>2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value.</p> <p>2.2.I Determine the value of a collection of coins totaling less than \$1.00.</p>	Find the values of combinations of dimes, nickels and pennies. PE 2.2.I	Allow ample time for students to practice counting combinations of Dimes, Nickels and Pennies.		<i>P2 Coin-Dice</i> PE 2.2.H	Optional: use "The Great Pet Sale" to support lesson; Prepare dominoes from SMJ1 for each student for 3♦14	Solve parts-and-total number stories. PE 1.2.H	
3♦13	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.1.F Fluently compose and decompose numbers to 10.</p> <p>1.5.B Ask and answer comparison questions about data.</p> <p>2.2.I Determine the value of a collection of coins totaling less than \$1.00</p>	Use a class generated line plot to answer simple questions about sibling data. PE 1.5.B	Emphasize data discussion about siblings (i.e. Who has no siblings? Who has more than 3 siblings?) to support PE 1.5.B	line plot, data	<i>P2 Dime-Nickel-Penny Grab</i> . MM p342 PE 1.1.E & 2.2.I		Make sums of 10. PE 1.1.F	
3♦14	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.2.A Connect physical and pictorial representations to addition and subtraction.</p> <p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p>	Use dominoes to find sums for Parts-and-Total diagrams. PE 1.2.A & 1.2.F	The domino addition activities build a strong foundation for basic addition facts which are introduced in Unit 4. Have students write equations under their Parts-and-Total diagrams. Consider extending the lesson or provide additional practice as a center or part of your daily routines to support PE 1.2.A .		<i>P1 Domino Top-It Roller</i> . MM p344 PE 1.1.E & 1.2.F	Dominoes from SMJ 1, Activity Sheets 4-5 for each student (cardstock); For Enrichment activity: MM p58-60 from 3♦4	Find dice sums. PE 1.2.A	TLG p254, "Why do you use a number line?"

Unit 4: Measurement and Basics Facts								
Overview: To measure and compare lengths using nonstandard and standard units; to review telling time on the hour, half-hour, and quarter-hour; to introduce and practice addition facts.								
Big Ideas		Place Value: There is a predictable pattern in the Base-Ten numeration system. The value of the digits 0-9 is determined by their position. Measurement & Geometry: Objects and two-dimensional shapes can be quantified, classified, described and analyzed by their attributes and by using unit amounts. Equivalence 2: Numbers represent values that can be put together and taken apart.						
	Performance Expectations	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
4♦1	1.1.A Count by ones, forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100. 1.1.E Write, compare, and order numbers to 120. 3.5.B Measure temperature in degrees Fahrenheit and degrees Celsius using a thermometer.	Read and record temperatures to the nearest 2 degrees F. PE 3.5.B	Although measuring temperature is a 3rd grade standard, it is taught in grades 1 and 2 in EDM. To support grade 2 students mastery of PE 3.5.B , first graders should be able to measure temperature in increments of ten degrees. For problems that measure by increments of two, including home link, model as necessary.	Math Message; thermometer; temperature; degree; Fahrenheit	<i>P2 Domino Top-It</i> PE 1.1.E	Class thermometer poster. Start collecting paper towel tubes for 4♦10.	Skip count by 2s. PE 1.1.A▲	
4♦2	1.1.F Fluently compose and decompose numbers to 10. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.4.B Use a variety of non-standard units to measure length. 1.4.C Compare lengths using the transitive property.	Use non-standard units (body parts or spans) to measure objects. PE 1.4.B	Extend lesson to allow ample time for students to compare lengths using the transitive property (bottom of TLG p283) to support PE 1.4.C . In addition, have students compare objects in their own SMJ p57 (i.e. If the door is taller than I am, and I am taller than the desk, then the door is taller than the desk). Then use Supplement 4♦2: Comparing Rope Lengths for additional practice using the transitive property.	unit; measure; length; digit; hand; hand span; yard; cubit; arm span	<i>P2 Two Fisted Penny Addition</i> MM p25 PE 1.1.F & 1.2.F	8 classroom objects of various lengths to measure. For Part 3 (R), 8 small objects, labeled, index cards, see TLG p281	List the complements of 6 and 7. PE 1.1.F	
4♦A	1.4.D Use non-standard units to compare objects according to their capacities or weights.	Use non-standard units to make comparisons. PE 1.4.D	Supplemental Lesson to support Non-Standard Units Gr1 California Project #11: Comparing Length, Weight, and Volume Do all of part 1.			Collect different size containers (for example, pitchers, juice cups, empty frozen juice cans, and drinking glasses) and gallon, quart, and/or pint containers.		TLG p289, "How does drawing help you solve a number story?"
4♦3	1.2.I Recognize, extend, and create number patterns. 1.4.A Recognize that objects used to measure an attribute (length, weight, capacity) must be consistent in size. 1.4.E Describe the connection between the size of the measurement unit and the number of units needed to measure something. 2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value.	Compare results when measuring objects using a personal "foot" and a standard foot. PE 1.4.A & 1.4.E	During "Measuring with a Standard Foot-Long Foot", make a point to find two students who were correct in their measurements but disagree (someone with very small feet and someone with very large feet) and lead a discussion about the need for a standard unit. See bottom of TLG p288. Additionally, to support PE 1.4.E , If possible, use <i>How Big is a Foot?</i> to emphasize the connection between the size of the unit and the student's measurements.	foot; feet; standard foot	<i>P2 Coin-Dice</i> PE 2.2.H	1-foot strips of construction paper. Part 3 (E) uses the book, <i>How Big is a Foot?</i>	Solve Frames-and-Arrows problems. PE 1.2.I	TLG p295, "Why is it important to use a thermometer?"
4♦4	2.3.C Measure length to the nearest whole unit in both metric and U.S. customary units. 2.3.E Use both analog and digital clocks to tell time to the minute.	Use a ruler to measure objects to the nearest inch. PE 2.3.C	Although measuring length to the nearest inch is a second grade standard, it is appropriate to introduce at this time.	inch; in.	<i>P2 Time Match.</i> MM p354-9 PE 2.3.E	One inch cubes. MM p354-355, one set per partner, cut apart – save for 4♦10. For Part 3 (R), cut 10" & 11" strips	Measure in feet. PE 2.3.C	TLG p300, "How do you know which pet is most popular in No. 2?"
4♦5	1.1.E Write, compare, and order numbers to 120. 2.3.B Estimate length using metric and US. customary units. 2.3.C Measure length to the nearest whole unit in both metric and U.S. customary units.	Estimate lengths, and then measure to the nearest inch. PE 2.3.B & 2.3.C		estimate	<i>P2 Domino Top-It</i> PE 1.1.E		Find domino sums and compare quantities. PE 1.1.E	
4♦6	1.2.H Solve and create word problems that match addition or subtraction equations. 2.3.C Measure length to the nearest whole unit in both metric and U.S. customary units.	Measure around and across objects with a tape measure. PE 2.3.C		tape measure		Tape measures placed in Tool Kits, labeled. For Part 3 (R), prepare 8 objects, 8 strings. See TLG p302.	Solve parts-and-total number stories. PE 1.2.H	

4♦7	<p>1.1.F Fluently compose and decompose numbers to ten. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.5.B Ask and answer comparison questions about data.</p>	<p>Find complements of 8 and 9 (Part 2). PE 1.1.F</p>	<p>Exploration A is revisited in 9♦5 and 10♦1. Save your data to use in those lessons.</p>	<p>typical; bar graph cubes, longs, flats, ones</p>	<p>P2 <i>Two Fisted Penny Addition</i> MM p25 PE 1.1.F & PE1.2.F</p>	<p>EXPLORATIONS: For organizing Explorations, see TLG p309-310. Choose MM p315 or 316 to match geoboards. MM p102, 1 per 2 students, cut in half. Base-10 blocks for each student - TLG p310. Save height data for Lesson 9♦5.</p>	<p>Solve easy dice sums. PE 1.1.F</p>	<p>TLG p317, "How did you draw the line segment in No. 2?"</p>
4♦8	<p>1.1.A Count by ones forward and backward from 1 to 120, starting at any number, and count by twos, fives, and tens to 100. 1.1.E Write, compare, and order numbers to 120. 1.1.F Fluently compose and decompose numbers to ten. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 2.2.I Determine the value of a collection of coins totaling less than \$1.00. 2.3.E Use both analog and digital clocks to tell time to the minute.</p>	<p>Use common phrases to tell time to the nearest half- and quarter-hour. PE 2.3.E</p>	<p>Since grade 1 focuses on the hour and half hour, review hour and half-hour times (TLG p314) to support Home Link. Optional "Telling Time to the Quarter-Hour". Spend most of your time on part 2 activities.</p>	<p>half-past (the hour); quarter-after; quarter past (the hour); quarter-before, quarter-to (the hour)</p>	<p>P2 <i>Dime-Nickel-Penny Grab</i> MM p342 PE 1.1.E & 2.2.I; P2 <i>Two Fisted Penny Addition</i> MM p25 PE 1.1.F & 1.2.F</p>	<p>Demonstration Clock</p>	<p>Tell time. PE 2.3.E</p>	
4♦9	<p>1.1.D Order object or events using ordinal numbers. 2.3.C Measure length to the nearest whole unit in both metric and U.S. customary units.</p>	<p>Sequence activities using ordinal numbers (Part 3). PE 1.1.D</p>	<p>Modification: Begin with Readiness Activity "Sequencing Before-School Activities" in part 3. Use ordinal language when sequencing before-school activities to support PE 1.1.D. Do the Math Boxes. Skip Part 1 and Home Link. Optional "Practicing Telling Time" in Part 2.</p>	<p>timeline</p>		<p>Draw 24-hour timeline – See TLG p320.</p>	<p>Measure to the nearest inch. PE 2.3.C</p>	
4♦10	<p>1.1.E Write, compare, and order numbers to 120. 2.3.E Use both analog and digital clocks to tell time to the minute. 4.4.F Describe and compare the likelihood of events.</p>	<p>Record counting numbers up to 300 on blank Number-Grids (Number Scrolls). PE 1.1.E▲</p>	<p>Play <i>Time Match</i> as you did before, only use quarter hour to provide enrichment if necessary.</p>	<p>number scroll</p>	<p>P2 <i>Time Match</i> MM p356 PE 2.3.E</p>	<p>Paper towel roll for each student, MM p356 – add cards to decks made in 4♦4 (Time Match). For Part 3 (E), label sticky notes, 1 – 100, TLG p329.</p>	<p>Answer probability questions. PE 4.4.F</p>	<p>TLG p333, "Why is it important to use a ruler?"</p>
4♦11	<p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.1.E Write, compare, and order numbers to 120. 2.3.E Use both analog and digital clocks to tell time to the minute.</p>	<p>Share and justify strategies for solving addition 'facts'. PE 1.2.F</p>		<p>addition facts; sum; fact power</p>	<p>P2 <i>High Roller</i>. MM p344 PE 1.1.E & 1.2.F</p>	<p>For Part 3 (R), 1 set dominoes for pair. Part 3 (EP), modify MM p317 (see TLG p330 & 334).</p>	<p>Tell time to the quarter-hour. PE 2.3.E</p>	<p>TLG p338, "How do you know which color ou are more likely to grab in No. 1?"</p>
4♦12	<p>1.1.F Fluently compose and decompose numbers to ten. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 2.2.A Quickly recall basic addition facts and related subtraction fact for sums through 20.</p>	<p>Use choral reading to develop automaticity with addition facts (+0, +1, doubles). PE 2.2.A</p>	<p>To reinforce the choral activity for <i>Shaker Addition Top-It</i>, use the pre-filled Game Master. Students roll only one die and either enter the value in the empty box or twice for the "D" for doubles problems. Finally, students solve using their own choral chant.</p>		<p>P1 <i>Shaker Addition Top-It</i>. MM p353 PE 1.2.F; P2 <i>Penny Plate</i>. MRB p146 PE 1.1.F</p>	<p>Base-10 cubes, 6-sided dice (or10-sided) – 2 per group.</p>	<p>Write addition facts. PE 2.2.A</p>	

Unit 5: Place Value, Number Stories, and Basic Facts								
Overview: To investigate place-value concepts for tens and ones; to explore addition of 2-digit numbers; to make up and solve a variety of number stories; and to introduce the "What's My Rule?" routine.								
Big Ideas		Properties: Properties of operations and equality are rules based on relationships that are always true. Patterns: Patterns repeat and can be extended in predictable ways. Place Value: There is a predictable pattern in the Base-Ten numeration system. The value of the digits 0-9 is determined by their position. Comparison: Numbers can be compared by their relative sizes, by analyzing corresponding place values or by their position on the number-line.						
Performance Expectations		Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
5♦1	1.1.C Read aloud numerals from 0 to 1,000. 1.1.E Write, compare, and order numbers to 120. 2.1.B Connect place value models with their numerical equivalents to 1,000.	Use base-10 blocks to model and then record whole numbers to 99. PE 2.1.B	For many of your students this will be the first time for them to experience base-10 blocks. Allow ample time for them to explore. Specifically, students need to be able to relate base-10 blocks as a concrete model to our place value system. Modification: Begin day 1 with Math Message Follow-up and "Naming Numbers with Base-10 Blocks", play the <i>Digit Game</i> having students read their two-digit numbers aloud to support PE 1.1.C , and do math boxes. Begin day 2 by asking students to write the value of base-10 blocks that you have displayed on their slates. For example, display 3 longs and 2 cubes, students write 32. After several problems, do "Making Exchanges with Base-10 Blocks" and "Naming Numbers of Collections of Base-10 Blocks". Play " <i>Guessing My 2-Digit Number</i> " in Part 3 as whole class. Emphasize place value vocabulary by asking how many ones? How many tens?	base-10 blocks, longs, cubes, tens place, ones place	<i>P2 Digit Game</i> MRB p132 PE 1.1.E	2-day Lesson Part 1 uses MM p318 for instruction. Use MM p119 for class poster. The book <i>Let's Count</i> by Tana Hoban relates to this lesson. Prepare base-10 blocks for tool kit – 12 longs, 25 units per student. Base-10 blocks are needed for this lesson. It is helpful to have individual bags of blocks for each student.	Name numbers represented by base-10 blocks. PE 2.1.B	TLG p361, No 2, "How do you find a missing rule?"
	1.1.F Fluently compose and decompose numbers to 10. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.2.I Recognize, extend, and create number patterns. 2.1.B Connect place value models with their numerical equivalents to 1,000.	Determine patterns in base-10 numeration system using a calculator, a number-grid and base-10 blocks. PE 1.2.I & 2.1.B	For calculator activities, emphasize place value vocabulary of hundreds place, tens place and ones place.	flat, hundreds, digit	<i>P2 Two Fisted Penny Addition</i> MM p25 PE 1.1.F & 1.2.F	Use MM p319 for instruction - Place Value Mat. Make extra copies for student use if SMJ won't stay flat or use Activity Sheet 6.	Find complements of the number 13 and 14. PE 1.2.F	TLG p367, "How do you count base-10 blocks?"
5♦3	1.1.E Write, compare, and order numbers to 120. 1.1.G Group numbers into tens and ones in more than one way. 1.2.I Recognize, extend, and create number patterns. 2.1.F Compare and order numbers from 0 to 1,000.	Use relation symbols (<, >, =) to compare whole numbers. PE 1.1.E & 2.1.F▼	This is the introduction to relation symbols. Have an anchor chart that includes examples. Focus on the use of words (less than, more than) to describe the comparison. While playing <i>Base 10 Exchange</i> – allow ample time to model, emphasize that a role of 1 or 2 results in longs.	is more than, is less than	<i>P1 Top-it</i> (with Relation Symbols): MRB p154, MM p321 PE 1.1.E ; <i>P2 Base-10 Exchange</i> : SMJ p81, MM p339 PE 1.1.G		Solve Frames-And-Arrows problems. PE 1.2.I	
5♦4	1.1.E Write, compare, and order numbers to 120. 1.1.H Group and count objects by tens, fives, and twos.	Share and explain strategies to count large quantities of pennies (Exploration C). PE 1.1.H	Exploration A requires teacher guidance when completing the recording sheet.	area, pan balance	<i>P2 Digit Game</i> : MRB p132 PE 1.1.E	EXPLORATION: Choose a surface and unit for Math Message. Exploration C uses 50 more pennies per group.	Find equivalent names for numbers. b	
5♦5	1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.4.C Compare lengths using the transitive property. 2.2.C Add and subtract two-digit numbers efficiently and accurately using a procedure that works with all two-digit numbers and explain why the procedure works.	Use base-10 blocks to model addition of 1- and 2-digit numbers. PE 2.2.C	Begin with Readiness Activity "Solving Parts-and-Total Problems" MM p.139.		<i>P2 Shaker Addition Top-It</i> : MM p353 PE 1.2.F ; <i>P3E Animal Weight Top-It</i> : SMJ 1 A7,8 PE 2.2.C	Part 1 uses MM p132-7 which matches SMJ Activity Sheets 7 & 8. (Used in later lessons.) For Part 3 (R), see directions TLG p383.	Compare lengths. PE 1.4.C	TLG p382, "How do you know how many tens are in a number?"

5♦6	1.1.E Write, compare, and order numbers to 120. 2.1.F Compare and order numbers from 0 to 1,000.	Use relation symbols (<, >, =) to compare animal weights. PE 1.1.E & 2.1.F▼				Part 3 (R); each child uses a different quantity of cubes up to 20.	Compare numbers through hundreds using < and>. PE 2.1.F	
5♦7	1.2.A Connect physical and pictorial representations to addition and subtraction equations. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.	Find differences using a comparison model. PE 1.2.A		difference	P1 <i>Difference Game</i> : MRB p130 PE 1.2.F		Solve comparison problems using pennies. PE 1.2.A	
5♦8	1.2.H Solve and Create word problems that match addition or subtraction equations. 2.1.C Identify the ones, tens, and hundreds place in a number and the digits occupying them.	Record equations to match solution strategies for Addition and Subtraction Number stories. PE 1.2.H	This is the introduction to problem solving. Reinforce a variety of problem solving strategies. Introduce solving word problems in your daily routines. Modification: Ask students to create problems that match a given addition or subtraction equation to support PE 1.2.H (see standards book for details).			Start collecting egg cartons for lesson 6♦7.	Identify digits in 2-digit numbers. PE 2.1.C	TLG p396, "What is a pattern?"
5♦9	1.1.G Group Numbers into tens and ones more than one way. 1.5.B Ask and answer comparison questions about data. 2.3.E Use both analog and digital clocks to tell time to the minute.	Use tally chart to draw conclusions about the frequency of dice roll sums. PE 1.5.B		multiple of 10	P <i>Base-10 Exchange</i> : MM p339 PE 1.1.G	Save tally chart to use with lesson 6♦1.	Show time to the quarter-hour on a clock. PE 2.3.E	TLG p 401, "How do you use > to compare numbers?"
5♦10	1.1.E Write, compare, and order numbers to 120. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.2.H Solve and Create word problems that match addition or subtraction equations.	Use the commutative property of addition to solve basic facts (Turn-Around facts). PE 1.2.F		turn-around fact, doubles fact	P3E <i>Domino Top-It</i> /PE 1.1.E		Solve simple number stories. PE 1.2.H	
5♦11	1.1.F Fluently compose and decompose numbers to 10. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.2.G Quickly recall addition facts and related subtraction facts for sums equal to 10. 2.2.A Quickly recall basic addition facts and related subtraction facts for sums through 20.	Develop automaticity of basic addition facts using 'Doubles' and '10 Sums' strategies. PE 1.2.F & 1.2.G	Have a class discussion so students can share the strategies and patterns for all the easy facts after each strategy has been colored.		P1 <i>Beat the Calculator</i> : MRB p124 PE 2.2.A; P2 <i>Penny Plate</i> : MRB p146 PE 1.1.F; P3 <i>Two Fisted Penny Addition</i> MM p25 PE 1.1.F & 1.2.F	Part 3 (EP) uses MM p317 – fill in before copying with easy facts.	Write turn-around facts. PE 1.2.F	
5♦12	2.2.F Create and state a rule for patterns that can be generated by addition and extend the pattern. 3.5.B Measure temperature in degrees Fahrenheit and degrees Celsius using a thermometer.	Solve "What's My Rule?" problems (Function Machine). PE 2.2.F	Provide ample time for students to develop their conceptual understanding of "What's My Rule?" Consider using manipulatives to allow students to deepen their understanding. Practice working backwards, from out to in.	function machine, rule		Use paper bag and craft sticks or other uniform objects for demo of function machine.	Record temperature to the nearest 10 degrees. PE 3.5.B	TLG p 417, "How do you find the temperature?"
5♦13	1.1.E Write, compare and order numbers to 120 2.2.F Create and state a rule for patterns that can be generated by addition and extend the pattern. 2.2.H Name each standard U.S. coin, write its value using the \$ and the ¢ sign, and name combinations of other coins with the same total value. 2.2.I Determine the value of a collection of coins totaling less than \$1.00.	Find or apply rules for function machine problems. PE 2.2.F	Encourage the use of number grids to check work on "What's My Rule?" Problems.		P2 <i>Penny-Nickel-Dime Exchange</i> PE 2.2.H	Part 3 (EP) uses MM p323 – fill in before copying with four rules and input numbers.	Compare values of coin combinations. PE 2.2.I & 1.1.E	

Unit 6: Developing Fact Power

Overview: To introduce fact-finding strategies; to review coin values, measurements, and time; to develop procedures for addition / subtraction problems; to introduce *My Reference Book*.

Big Ideas **Equivalence 1:** Any number or equation can be represented in multiple ways. **Number Relationships:** Addition and subtraction are inverse operations of each other and multiplication and division are inverse operations of each other. **Data:** Data can be collected, classified, analyzed & displayed using tables, charts & graphs. **Measurement & Geometry:** Objects and shapes can be quantified, classified and described by their attributes and by using unit amounts. **Chance:** Collecting data on the occurrence of an event can help to determine its likelihood which can then be used to make predictions about the event.

	Performance Expectations	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
6♦1	<p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p> <p>3.1.D Estimate sums and differences to approximate solutions to problems and determine reasonableness of answers.</p> <p>4.4.H Display the results of probability experiments and interpret the results.</p>	<p>Draw conclusions about probability of dice roll sums based on generated list of all possible outcomes. PE 4.4.H</p>		Addition / Subtraction Facts Table	<p>P1 <i>Addition Top-It</i>: MRB p122 PE 1.2.F; P2 <i>Difference Game</i>: MRB p130 PE 1.2.F</p>	<p>MM p324, Addition / Subtraction Facts Table -1 per student (laminated?). Part 3, (R) chart paper - columns, labeled 2-12, (E) chart paper - columns, labeled 2-16 per pair. Check to see if you have collected enough egg cartons for Lesson 6.7.</p>	<p>Estimate costs for items. PE 3.1.D</p>	<p>TLG p540, "How do turn-around facts help you learn math facts?"</p>
6♦2	<p>1.1.G Group numbers into tens and ones in more than one way.</p> <p>1.2.B Use the equal sign (=) and the word equals to indicate that the two expressions are equivalent.</p> <p>1.2.E Add three or more one-digit numbers using the commutative and associative properties of addition.</p> <p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p>	<p>Find equivalent names for numbers (Name-Collection Box). PE 1.2.B</p>	<p>Modeling Name Collection Boxes should also include base-10 blocks, three or more addends, and fact families to support PE 1.1.G & 1.2.E.</p>	<p>equivalent names; name-collection box</p>	<p>P2 <i>Addition Top-It</i>: MRB p122 PE 1.2.F</p>	<p>For Part 1, choose appropriate objects. See TLG p 542. For 5♦4, prepare Fact Triangles in SMJ2, Activity Sheets 9 & 10.</p>	<p>Write addition facts. PE 1.2.F</p>	
6♦3	<p>1.2.A Connect Physical and pictorial representations to addition and subtraction equations.</p> <p>1.2.D Demonstrate the inverse relationship between addition and subtraction by undoing an addition problem with subtraction and vice versa.</p>	<p>Use dominoes to generate addition and subtraction equations within a fact family. PE 1.2.D</p>		<p>fact family</p>		<p>Part 1, MM p166, 1 per 2 students, cut apart.</p>	<p>Find parts and totals. PE 1.2.A</p>	
6♦4	<p>1.1.A Count by ones forward and backward from 1-120 starting at any number, and count by twos, fives and tens to 100.</p> <p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p> <p>2.2.A Quickly recall basic addition facts and related subtraction facts for sums through 20.</p>	<p>Use fact triangles to develop automaticity with some addition and subtraction facts. PE 2.2.A</p>		<p>Fact Triangle</p>	<p>P1 <i>Beat the Calculator</i>: SMJ p116 PE 2.2.A; P2 <i>Fact Power Game</i>: MM p343 PE 1.2.F</p>	<p>The fact triangles are in back of student journals. Pull from books ahead of time and consider only giving Fact Triangle pgs. 1 and 2 for now. Save pgs. 3 and 4 for later when students have a better grasp of the first two pages.</p>	<p>Do stop-and-start counting by 10s, then 5s, and then 1s. PE 1.1.A</p>	
6♦5	<p>1.1.F Fluently compose and decompose numbers to 10.</p> <p>1.2.D Demonstrate the inverse relationship between addition and subtraction by undoing an addition problem with subtraction and vice versa.</p> <p>1.2.E Add three or more one-digit numbers using the commutative and associative properties of addition.</p> <p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p>	<p>Use the Addition / Subtraction Facts Table to solve problems. PE 1.2.E</p>	<p>When playing <i>Addition Top-It</i>, have students begin to use 3 addends (3 cards), emphasizing which numbers would be best/easiest to add together first to teach commutative/associative properties. PE 1.2.E. See the NOTE on TLG p561 regarding the use of the facts table.</p>		<p>P2 <i>Addition Top-It</i>: MRB p122 PE 1.2.F; P3EP <i>Penny Plate</i>: MRB p146 PE 1.1.F</p>	<p>For 5♦7, students add the remaining Fact Triangles to complete their set, Activity Sheets 11 & 12.</p>	<p>Use the Addition / Subtraction Facts Table to solve addition problems. PE 1.2.F</p>	<p>TLG p561, "What is a fact family?"</p>

6♦6	<p>1.5.B Ask and answer comparison questions about data.</p> <p>2.3.C Measure length to the nearest whole unit in both metric and U.S. customary units.</p>	<p>Use ruler to measure to the nearest centimeter.</p> <p>PE 2.3.C</p>	<p>Although measuring in centimeters is a 2nd grade standard, the activities are appropriate.</p>	<p>cm, centimeter, metric system</p>		<p>For Math Message have base-10 longs available. Part 2; prepare spinners ahead of time, MM p328. See TLG p563 and p 566.</p>	<p>Analyze and interpret data.</p> <p>PE 1.5.B</p>	
6♦7	<p>1.1.I Classify a number as odd or even and demonstrate that it is odd or even.</p> <p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p> <p>2.2.A Quickly recall basic addition facts and related subtraction facts for sums through 20.</p>	<p>Solve randomly generated addition problems (Exploration B). PE 1.2.F & 1.1.I</p>	<p>Provide ample time to complete all explorations. See NOTE on TLG p571 regarding Exploration B.</p>		<p><i>P2 Fact Power Game:</i> MM p343 PE 1.2.F</p>	<p>EXPLORATION: Exploration B uses 1 labeled egg carton per pair. See TLG p571. Part 2 uses Fact Triangles in SMJ2, Activity Sheets 11 & 12. Plan for students to continue work on scrolls from 4♦10. See TLG p573.</p>	<p>Solve easy addition facts.</p> <p>PE 2.2.A</p>	
6♦8	<p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p> <p>2.2.F Create and state a rule for patterns that can be generated by addition and extend the pattern.</p>	<p>Solve “What’s My Rule?” function machine problems with missing inputs or outputs.</p> <p>PE 2.2.F</p>			<p><i>P2 Tric-Trac:</i> MRB p156, MM p360 PE 1.2.F</p>		<p>Find the rule in “What’s My Rule?” problems.</p> <p>PE 2.2.F</p>	<p>TLG p578, “How do you compare numbers on a graph?”</p>
6♦9	<p>1.1.E Write, compare and order numbers to 120.</p> <p>2.2.H Name each standard U.S. coin, write its value using the \$ sign and the ¢ sign, and name combinations of other coins with the same total value.</p> <p>2.2.I Determine the value of a collection of coins totaling less than \$1.00.</p> <p>4.4.F Describe and compare the likelihood of events.</p>	<p>Calculate the value of combinations of quarters, dimes, nickels, and pennies. PE 2.2.I▲</p>	<p>Although naming and finding the value of money is a 2nd grade standard, use this lesson as an introduction to the quarter and counting by 25s. Have students use coins that are appropriate for their level when adding money.</p>	<p>quarter</p>	<p><i>P2 Coin Top-It</i> PE 1.1.E & 2.2.I; P3R <i>Penny-Nickel-Dime Exchange</i> PE 2.2.H; P3E <i>Quarter-Dime-Nickel-Penny Grab:</i> MM p351 PE 2.2.H</p>	<p>Add 2 quarters to each child’s tool kit. For Part 2, make additional <i>Coin Top-It</i> cards and add to sets from 2♦13 and 3♦11. TLG p580. The book, “I” by Hoban would be helpful.</p>	<p>Answer probability questions.</p> <p>PE 4.4.F▼</p>	
6♦10	<p>2.2.B Solve addition and subtraction word problems that involve joining, separating, and comparing and verify the solution.</p> <p>2.2.H Name each standard U.S. coin, write its value using the \$ and the ¢ sign, and name combinations of other coins with the same total value.</p> <p>2.3.E Use both analog and digital clocks to tell time to the minute.</p>	<p>Tell and record digital and analog time to the quarter, half and hour. PE 2.3.E</p>	<p>First grade goal is to master identifying parts of a clock (hour hand, minute hand) and telling time to the hour and half hour to support telling time to the minute in second grade. Emphasize writing digital time and telling time on a digital clock. Touch & Go for “Introducing the 5-Minute Interval Marks on the Analog Clock”. Use Gr1 Singapore Exercise 34 p79.</p>	<p>digital clock</p>	<p><i>P2 Coin Exchange:</i> MRB p128 PE 2.2.H; P3EP <i>Time Match:</i> MM p354-9 PE 2.3.E</p>	<p>Part 3 (EP), use cards from 4♦4 (TLG p295) or make new ones from MM p354-5.</p>	<p>Solve number stories.</p> <p>PE 2.2.B</p>	<p>TLG p592, “How do you count a handful of coins?”</p>
6♦11	<p>1.1.D Order object or events using ordinal numbers.</p> <p>2.3.C Measure length to the nearest whole unit using metric and US customary units.</p> <p>2.3.E Use both analog and digital clocks to tell time to the minute.</p>	<p>Use ruler to measure to the nearest centimeter.</p> <p>PE 2.3.C</p>	<p>Begin with the Readiness Activity “Ordering Ourselves” to support PE 1.1.D. Use Gr1 Singapore Exercise 12 p28-29.</p>	<p>“My Reference Book”, table of contents</p>		<p>For Part 3 (R), prepare ordinal cards. TLG p593.</p>	<p>Show and tell time.</p> <p>PE 2.3.E</p>	<p>TLG p 596, “How do you know which color you are more likely to spin?”</p>
6♦12	<p>1.2.B Use the equal sign (=) and the word equals to indicate that two expressions are equivalent.</p> <p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p> <p>1.5.A Represent data using tallies, tables, picture graphs, and bar-type graphs.</p> <p>1.5.B Ask and answer comparison questions about data.</p>	<p>Create a tally chart and a bar graph to organize data.</p> <p>PE 1.5.A</p>	<p>If time allows, do Enrichment activity “Collecting and Analyzing Data”.</p>	<p>middle value, range</p>	<p><i>P2 Tric-Trac:</i> MRB p156, MM p360 PE 1.2.F</p>	<p>For Part 1, prepare class chart. See TLG p598.</p>	<p>Solve addition facts.</p> <p>PE 1.2.B & 1.2.F</p>	

Unit 7: Geometry and Attributes								
Overview: To sort attribute blocks according to attribute rules; to extend children's familiarity with polygons; to identify 3-dimensional shapes; to explore symmetrical shapes.								
Big Ideas	Measurement & Geometry: Objects and shapes can be quantified, classified and described by their attributes and by using unit amounts. Transformations: Objects in space can be rotated (turned), translated (slid), reflected (flipped) and scaled in multiple ways.							
Performance Expectations		Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
7♦1	<p>1.2.G Quickly recall addition facts and related subtraction facts for sums to 10.</p> <p>1.2.H Solve and create word problems that match addition and subtraction equations.</p> <p>1.3.A Compare and sort a variety of two- and three-dimensional figures according to their geometric attributes.</p> <p>2.4.A Solve problems involving properties of two- and three-dimensional figures.</p>	Sort Attribute Blocks according to a given rule. PE 1.3.A	Add Readiness activity "Fishing for Attributes" to your classroom routines for a few days to provide more practice sorting PE 1.3.A .	triangle, square, rectangle, hexagon, circle, attribute	P1 <i>Beat the Calculator</i> . SMJ p116 PE 1.2.G ; P2 <i>Make My Desigr</i> . SMJ p137 PE 2.4.A	Have a set of Attribute Blocks available for Math Message. For Part 1, adapt activities to match the type of Attribute Blocks you have.	Solve change-to-less problems. PE 1.2.H	
7♦2	<p>1.2.D Demonstrate the inverse relationship between addition and subtraction by undoing an addition problem with subtraction and vice versa</p> <p>1.3.A Compare and sort a variety of two- and three-dimensional figures according to their geometric attributes.</p> <p>2.3.E Use both analog and digital clocks to tell time to the minute.</p>	Identify attribute blocks that differ from each other in only one way. (Exploration A) PE 1.3.A			P1 <i>Attribute Train Game</i> PE 1.3.A ; P2 <i>Time Match</i> . MM p354-9 PE 2.3.E	EXPLORATION: Attribute blocks for Math Message. Prepare Fact Platters – see TLG p627 and Exploration C. For Shapes Museum in 7♦5, collect 3-D solid shapes. See TLG p732. You need more than one set of attribute blocks to run the explorations stations.	Write fact families. PE 1.2.D	
7♦3	<p>1.3.B Identify and name two-dimensional figures, including those in real-world contexts, regardless of size or orientation.</p> <p>1.5.B Ask and answer comparison questions about data.</p>	Identify pattern block shapes. PE 1.3.B		trapezoid, rhombus, side, corner, square corner, polygon		Math Message uses pattern blocks. Write names of blocks (triangle, square, rhombus, trapezoid and hexagon) on board.	Identify 2-dimensional shapes. PE 1.3.B	TLG p636, "What is a rectangle?"
7♦4	<p>1.2.E Add three or more one-digit numbers using the commutative and associative properties of addition.</p> <p>1.3.B Identify and name two-dimensional figures, including those in real-world contexts, regardless of size or orientation.</p> <p>1.5.B Ask and answer comparison questions about data.</p> <p>2.2.I Determine the value of a collection of coins totaling less than \$1.00.</p>	Compare shapes according to their attributes. PE 1.3.B	Prior to students completing the Name Collection Box, model the use of equations with three addends (i.e. 4+3+5=12) to support PE 1.2.E . Focus on the properties of the figures (sides/corners) and reinforce that a polygon must be a closed figure. During "Investigating Flipping Pennies" in Part 2 include comparison questions about the data to support PE 1.5.B .	closed figure		Continue to add to Shapes Museum. Math Message uses 4", 6", & 8" straws (3 per student) and 15 twist-ties each. For Part 3 (R), prepare posters of pattern blocks, labeled with same names in 7♦3.	Count the value of quarters to \$1.00. PE 2.2.I	
7♦5	<p>1.3.A Compare and sort a variety of two- and three- dimensional to their geometric attributes.</p> <p>2.1.B Connect place value models with their numerical equivalents to 1,000.</p> <p>2.2.H Name each standard U.S. coin, write its value using the \$ and the ¢ sign, and name combinations of other coins with the same total value.</p>	Describe basic characteristics of 3-D solid figures. (sphere, cylinder, rectangular prism) PE 1.3.A		sphere, cylinder, rectangular prism, surface, face	P2 <i>Coin Exchange</i> . MRB p128 PE 2.2.H	Math Message uses a sphere, cylinder and rectangular prism. For Part 1, label index cards with the 3 names and 'other'. Add objects to shapes museum. Part 3 (E) uses 3-D shapes. Create poster of MM p210 if needed.	Name numbers represented by base-10 blocks. PE 2.1.B	TLG p647, "What is a polygon?"
7♦6	<p>1.3.A Compare and sort a variety of two- and three-dimensional figures according to their geometric attributes.</p>	Describe basic characteristics of 3-D solid figures. (pyramid, cone, cube) PE 1.3.A		pyramid, cone, cube	P2 <i>Attribute Train Game</i> PE 1.3.A	For Math Message (cone) and Part 1 (cube, pyramid) prepare labeled index cards and models. Add to Shapes Museum.	Recognize attributes of Attribute Blocks PE 1.3.A	TLG p652, "What patterns do you see on the Number Grid, Problem 4?"

7♦7	<p>1.2.E Add three or more one-digit numbers using the commutative and associative properties of addition.</p> <p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p> <p>1.3.A Compare and sort a variety of two- and three-dimensional figures according to their geometric attributes.</p> <p>2.4.A Solve problems involving properties of 2 and 3-D figures.</p>	<p>Use folded paper to create symmetrical shapes. PE 2.4.A</p>	<p>When playing <i>Addition Top-It</i>, continue to have students use 3 addends (3 cards), emphasizing which numbers would be best/easiest to add together first to teach commutative/associative property PE 1.2.E. Touch & Go "Making Symmetrical Shapes".</p>	<p>symmetrical, symmetry</p>	<p>P2 <i>Addition Top-It</i>: MRB p122 PE 1.2.F; P3EP <i>Make My Design</i>: SMJ p137 PE 2.4.A</p>	<p>Math Message uses MM p215, 1 per student. Part 3, (E) uses symmetry cards. See TLG p654.</p>	<p>Identify cylinders. PE 1.3.A</p>	
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Unit 8: Mental Arithmetic, Money, and Fractions								
Overview: To extend work with money to include dollars; to extend place-value concepts to hundreds; and to continue to develop an understanding of fractional parts of a whole.								
Big Ideas		Place Value: There is a predictable pattern in the Base-Ten numeration system. The value of the digits 0-9 is determined by their position. Number 2: A fraction represents a comparison of a part to the whole (region, set, segment). Equivalence 2: Numbers represent values that can be put together and taken apart.						
Performance Expectations		Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
8♦1	1.1.E Write, compare and order numbers to 120. 2.2.H Name each standard U.S. coin, write its value using the \$ and the ¢ sign, and name combinations of other coins with the same total value. 2.2.I Determine the value of a collection of coins totaling less than \$1.00.	Calculate the value of combinations of quarters, dimes, nickels, and pennies. PE 2.2.I	Provide extra teacher support with money notation. If your students are not comfortable with quarters, do SMJ p151 whole class.		P1 <i>Coin Exchange</i> : MRB p128 PE 2.2.H ; P3EP <i>Coin Top-it</i> PE 1.1.E & 2.2.I	For Part 2, create spinners using MM p328, 1 per pair, on heavy paper or paper plates, see TLG p676. Lesson 8♦2 uses real dollar bills, 1 per small group.	Count money. PE 2.2.I	TLG p680, “Why is it important to know addition facts?”
	2.1.B Connect place value models with their numerical equivalents to 1,000. 2.1.F Compare and order numbers from 0 to 1,000. 2.2.I Determine the value of a collection of coins totaling less than \$1.00.	Use dollars bills and coins to represent amounts written in dollars-and-cents notation. PE 2.1.B▲	In this lesson students look at dollars- and-cents notation and represent money using dollar bills and coins. Note the deliberate absence of quarters and nickels in the <i>One-Dollar Exchange</i> game. This game is designed to support students’ understanding of the base-10 number system by relating it to money and supports the concepts covered in the next lesson 8♦3. The <i>One-Dollar Exchange</i> game is played again in lesson 8♦7 and 9♦8.	decimal point	P1 <i>One-Dollar Exchange</i> : MRB p144, MM p224 PE 2.1.B	For Part 1, students cut out MM p331 & 332, 5 bills per student, leftovers go into class bank. The book, “Follow the Money” relates to lesson content.	Write accurate number models using <, >, and =. PE 2.1.F & 2.2.I▲	TLG p686, “What is a prism?”
8♦3	1.1.C Read aloud numerals from 0 to 1,000. 1.1.E Write, compare, and order numbers to 120. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 2.1.B Connect place value models with their numerical equivalents to 1,000. 2.1.D Write three-digit numbers in expanded form. 2.2.A Quickly recall basic addition facts and related subtraction facts for sums through 20.	Write 3-digit whole numbers modeled with base-10 blocks. PE 2.1.B & 1.1.E▲	During “Naming Numbers Shown with Base-10 Blocks” model, with student participation, expanded form. For example, 1 flat, 4 longs, and 6 cubes is written as $100+40+6=146$. Next, have the students read the 3-digit numbers aloud to support PE 1.1.C & 2.1.D . Add these practices to your daily routines. You may need additional base-10 blocks to complete this activity independently, borrow additional blocks or complete as a station.	hundreds, tens, ones, hundreds place, tens place, ones place	P2 <i>Tric-Trac</i> : MRB p156, MM p360; PE 1.2.F ; P3R <i>Beat the Calculator</i> : SMJ p116 PE 2.2.A	In Part 1, students use Base-10 blocks. For Part 1, teaching master or poster of MM p324 might be helpful.	Model numbers with base-10 blocks. PE 2.1.B	
	1.1.G Group numbers into tens and ones in more than one way. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.6.D Select from a variety of problem-solving strategies and use one or more strategies to solve a problem. 2.2.C Add and subtract 2-digit numbers efficiently and accurately using a procedure that works with all 2-digit numbers and explain why the procedure works.	Share and justify strategies for solving student generated number stories. PE 2.2.C & 1.6.D	Students need multiple opportunities to work on a variety of problems. Extend this lesson over 2 days and add examples to your routines. The activities in this lesson are very valuable. They summarize many of the computational skills, models and strategies learned so far; give students the opportunity to share their thinking while modeling the fact that there are multiple ways to solve a problem.		P2 <i>Base-10 Exchange</i> : MM p224&339 PE 1.1.G	2-Day Lesson	Solve easy subtraction facts. PE 1.2.F	
8♦5	1.2.E Add three or more one-digit numbers using the commutative and associative properties of addition. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 2.1.C Identify the ones, tens, and hundreds place in a number and the digits occupying them. 2.2.C Add and subtract 2-digit numbers efficiently and accurately using a procedure that works with all 2-digit numbers and explain why the procedure works.	Make change using a counting up strategy. PE 2.2.C	Encourage students to use equations with three addends to support PE 1.2.E .	to make change	P2 <i>3, 2, 1 Game</i> : MRB p150 PE 1.2.F ; P3R <i>Difference Game</i> : MRB p130 PE 1.2.F	Part 3 (E), MM p233, cut into quarters. For Lesson 8♦6, 2 different sized candy bars, fruit bars, or paper rectangles, scored for breaking apart.	Identify the tens digit in numbers. PE 2.1.C	

8↔6	<p>2.4.E Interpret a fraction as a number of equal parts of a whole or a set.</p>	<p>Fold paper crackers to show equal parts (halves, thirds & fourths). PE 2.4.E</p>	<p>Touch & Go. This is the introduction to fraction concepts.</p>	<p>whole, equal parts, halves, fourths, thirds</p>		<p>For Math Message, use 2 'candy' bars. Part 3, (E), requires cereal. Label measuring cups <i>small, medium, large</i>. The books, "Eating Fractions", and "Picture Pie" relate to lesson content.</p>	<p>Show equal parts. PE 2.4.E</p>	<p>TLG p707, "How do you make change?"</p>
8↔7	<p>2.1.B Connect place value models with their numerical equivalents to 1,000. 2.4.A Solve problems involving properties of two-and three-dimensional figures. 2.4.E Interpret a fraction as a number of equal parts of a whole or a set.</p>	<p>Label fractional parts of a whole. PE 2.4.E</p>		<p>fraction, fractional part</p>	<p>P2 <i>One-Dollar Exchange</i>: MRB p144, MM p224 PE 2.1.B</p>	<p>Part 3 (R), for each student from 8 1/2 X 11 paper prepare large circle, square, triangle and semi-circle. For Part 3(E), MM p239, several for each student, cut in half or have students create their own booklets.</p>	<p>Complete a symmetric shape. PE 2.4.A</p>	<p>TLG p712, "How do you know how many hundreds are in a number?"</p>
8↔8	<p>1.2.E Add three or more one-digit numbers using the commutative and associative properties of addition. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 2.4.E Interpret a fraction as a number of equal parts of a whole or a set. 4.4.F Describe and compare the likelihood of events.</p>	<p>Use pennies to determine quantities for fractional parts of sets. PE 2.4.E</p>	<p>When playing <i>Addition Top-It</i>, decide whether to focus on fact fluency practice (2 addends) or commutative/associative property practice (3 addends), to support PE 1.2.F & 1.2.E.</p>		<p>P2 <i>Addition Top-It</i>: MRB p122 PE 1.2.F</p>	<p>The books "Father Who Had 10 Children" and "How Hungry Are You?" relate to lesson content.</p>	<p>Determine the likelihood of spinning a certain number. PE 4.4.F▼</p>	
8↔9	<p>1.1.F Fluently compose and decompose numbers to 10. 1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18. 1.3.B Identify and name 2-dimensional figures, including those in real-world contexts, regardless of size or orientation.</p>	<p>Sort Fact Triangles according to strategies (doubles, near doubles & 10 sums). (Exploration C) PE 1.2.F</p>		<p>near doubles</p>	<p>P2 <i>3, 2, 1 Game</i>: MRB p150 PE 1.2.F; P3 <i>Two Fisted Penny Addition</i> MM p25 PE 1.1.F & 1.2.F</p>	<p>EXPLORATION: Math Message requires pieces of paper for drawing shapes with template.</p>	<p>Name 2-dimensional shapes. PE 1.3.B</p>	

Unit 9 : Place Value and Fractions								
Overview: To reinforce counting, adding, and subtracting with 10s and 1s; to extend fraction concepts to fractions other than unit fractions; to use region models to compare fractions; and to introduce the concept of equivalent fractions.								
Big Ideas		Place Value: There is a predictable pattern in the Base-Ten numeration system. The value of the digits 0-9 is determined by their position. Number 2: A fraction represents a comparison of a part to the whole (region, set, segment). Number 1: Every number has a point on the number line. Two numbers are equal when they share the same point on the number line. Transformations: Objects in space can be rotated (turned), translated (slid), reflected (flipped) and scaled in multiple ways.						
	Performance Expectations	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
9♦1	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.2.I Recognize, extend, and create number patterns.</p> <p>2.2.A Quickly recall basic addition facts and related subtraction facts for sums through 20.</p>	Use patterns in the base-10 number system to name missing numbers in a number-grid. PE 1.2.I	Provide ample time for this lesson. For additional support, use Readiness Activity “Piecing Together a Number Grid”.		P1 <i>Beat the Calculator</i> . SMJ p116 PE 2.2.A	Consider providing laminated copies of number-grids for students (or place in sheet-protectors. For Part 3 (R), create number-grid puzzles on cardstock from MM p249. See TLG p742.	Order numbers to 110. PE 1.1.E	
9♦2	<p>1.1.A Count by ones forward and backward from 1 to 120, starting at any number and count by twos, fives, and tens to 100</p> <p>1.2.C Represent addition and subtraction on the number line.</p> <p>1.5.B Ask and answer comparison questions about data.</p> <p>2.1.A Count by 10s or 100s forward and backward from 1 to 1,000, starting at any number.</p>	Use a Number-Grid to count forward and backward by 1s and 10s from any number. PE 1.1.A & 2.1.A▼	Modification: Begin with Readiness Activity “Adding and Subtracting 10’s” to provide practice drawing pictorial representations of base-10 blocks. Students who are not ready should construct with blocks. Emphasize a data discussion around the “Letters in Our First Names Graph” (i.e. How many more students had 6 letters in their name than 4?) to support PE 1.5.B .		P1 <i>Number-Grid Game</i> . MRB p142, MM p249 PE 1.2.C	Students cut out the shapes on Activity Sheets 15 & 16 in Lesson 9♦3.	Use a number grid to add and subtract. PE 1.2.C	TLG p751; “What is the pattern in the sums in No. 2?”
9♦3	<p>1.1.G Group numbers into tens and ones in more than one way.</p> <p>1.2.I Recognize, extend, and create number patterns.</p> <p>1.3.B Identify and name two-dimensional figures, including those in real-world contexts, regardless of size or orientation.</p> <p>2.4.A Solve problems involving properties of two- and three-dimensional figures.</p>	Use patterns in the base-10 number system to complete number grid puzzles. PE 1.2.I	Having pre-made laminated number grid puzzles with beginning numbers works great for extra practice.	number-grid puzzle	P2 <i>Make My Design</i> . SMJ p137 PE 2.4.A	For Part 1, MM p258, 1 per 4 students cut apart plus teaching master or chart. Use MM p259 to prepare T- and L-shaped pieces, see TLG p753.	Name 2-dimensional shapes. PE 1.3.B	TLG p746; “How do you know who has more money in No. 6?”
9♦4	<p>2.2.C Add and subtract two-digit numbers efficiently and accurately using a procedure that works with all two-digit numbers and explain why the procedure works.</p> <p>2.4.E Interpret a fraction as a number of equal parts of a whole or a set.</p> <p>2.5.F Describe how a problem was solved.</p>	Share and justify strategies to solve animal stories involving 2-digit numbers. PE 2.2.C & 2.5.F	Although adding two-digit numbers is a second grade standard, this lesson is appropriate. Teacher support is needed; use number grid, manipulatives, or other strategies your students are familiar with.			Home Link 9♦3 for discussion. Planning Ahead: See materials list in Part 1, Lesson 9♦5	Find fractions of a set. PE 2.4.E	
9♦5	<p>1.1.E Write, compare, and order numbers to 120.</p> <p>1.2.C Represent addition and subtraction on the number line.</p> <p>2.4.A Solve problems involving properties of two and three-dimensional figures.</p>	Complete a symmetrical design using pattern blocks. PE 2.4.A	If time allows, have students create their own half of a symmetrical design with pattern blocks and have a partner complete the other half. They can record their creations using paper pattern block cutouts or their pattern block templates, or save their favorites for other students to view.		P2 <i>Number-Grid Game</i> . MRB p142, MM p249 PE 1.2.C	EXPLORATION: For each measuring station (A), provide 3 different sized containers, pourable material (rice, popcorn, or beans), 3 large and 3 small cups. For (C), measuring tape on wall for heights. You will need the height data saved from Lesson 4♦7. and may want to save all for lesson 10♦1. The book, “Lulu’s Lemonade” relates to the content of lesson.	Create numbers using given digits. PE 1.1.E	TLG p756; “What is a fraction of a shape?”
9♦6	<p>2.4.E Interpret a fraction as a number of equal parts of a whole or a set.</p>	Find multiple ways to fold paper squares to show the same fractional part. PE 2.4.E▲	Lessons 9♦6 through 9♦8 are lessons on comparing fractions and equivalent fractions. Although this is beyond 1 st grade standards, exposure to the concepts is critical to support students in reaching mastery in 2 nd and 3 rd grade.			MM p267 for Math Message. The book “Fraction Action” relates to the content of lesson.	Divide shapes into equal parts. PE 2.4.E	

9+7	<p>1.2.F Apply and explain strategies to compute addition facts and related subtraction facts for sums to 18.</p> <p>1.2.I Recognize, create, and extend number patterns.</p> <p>3.3.B Compare and order fractions that have denominators of 2,3,4,5,6,8,9,10, and 12</p>	<p>Use fraction strips to compare fractions.</p> <p>PE 3.3.B</p>	<p>This lesson is for exposure. During “Comparing Fractions” bullet two, push the discussion around “why”, so students can generalize about the concept, rather than making a “rule” about which numerator is bigger. For example, if one strip is cut into more parts, each of these parts is smaller than an equal sized strip cut into fewer parts.</p>	<p>denominator; numerator</p>	<p><i>P2 Difference Game</i>: MRB p130 PE 1.2.F</p>	<p>MM p270 for Math Message. For Part 3 (E), prepare fraction cards. See TLG p774.</p>	<p>Solve number-grid puzzles.</p> <p>PE 1.2.I</p>	
9+8	<p>2.1.B Connect place value models with their numerical equivalents to 1,000.</p> <p>2.2.E Estimate sums and differences.</p> <p>3.3.C Represent and identify equivalent fractions with denominators of 2,3,4,5,6,8,9,10, and 12</p>	<p>Find names for equivalent fractions using fraction strips. PE 3.3.C</p>	<p>This lesson is for exposure. If your students are not ready, complete “Finding Names for Fractional Parts” whole class, rather than independently.</p>		<p><i>P2 One-Dollar Exchange</i>: MRB p144, MM p224 PE 2.1.B</p>	<p>Part 3 (EP), prepare half sheets of fraction name-collection boxes from MM p325. See TLG p778.</p>	<p>Estimate sums.</p> <p>PE 2.2.E</p>	<p>TLG p781; “What is a fraction of a group of objects?”</p>

Unit 10: Year End Review and Assessment								
Overview: To analyze the children's height measurements made in Units 4 and 9. In the process, children, review the standard procedures used to make sense of collections of data; to present you and the children with information about their progress on some of the concepts and skills presented in first grade. Therefore, most of the lessons contain reviews, reminders, and assessment activities; and to provide "Summer Home Link" activities for children and parents.								
Big Ideas		Equivalence 2: Numbers represent values that can be put together and taken apart. Data: Data can be collected, classified, analyzed & displayed using tables, charts & graphs. Chance: Collecting data on the occurrence of an event can help to determine its likelihood which can then be used to make predictions about the event.						
Performance Expectations		Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
10♦1	1.5.A Represent data using tallies, tables, picture graphs, and bar-type graphs. 3.5.E Construct and analyze pictographs, frequency tables, line plots, and bar graphs.	Interpret data represented in a line plot. PE 1.5.A & 3.5.E	Although finding the median (middle value) of a data set is beyond 1 st grade standard, EDM covers this concept again in 2 nd and 3 rd grade. Provide ample time to discuss the height data. You can ask the following: "What do you notice about the line plot?" "What might happen if we measure another First grade class in your school?" "What might be the height of a new student?" If a 2 nd grade class plotted their heights, what might that look like? You also might have a more extensive discussion if you create and compare two line-plots for the 2 sets of data from Lessons 4♦7 and 9♦5. To provide a concrete experience in finding the median, have each student write their height on a post-it. Line up in order from least to greatest. Have the two end students' step back out of the line. Continue until the middle value(s) is left.	No new vocabulary in Unit 10		You need the height data you collected in the fall and in lesson 9♦5, recorded on journal pg. 215. to prepare class line plot for student heights. Provide sticky notes. See TLG p800.	Find data landmarks. PE 1.5.A	
10♦2	2.2.A Quickly recall basic addition facts and related subtraction facts for sums through 20. 2.3.E Use both analog and digital clocks to tell time to the minute.	Tell and show time to the nearest 5 minutes. PE 2.3.E	First grade goal is to master identifying parts of a clock (hour hand, minute hand) and to tell time to the hour and half hour. This supports telling time to the minute in second grade. If you did not do the introduction to the 5-Minute Interval Marks in Lesson 6♦10 (TLG p589) do so now. Then teach the rest of Part 1 as is appropriate for your students.		<i>P2 Beat the Calculator.</i> SMJ p116 PE 2.2.A	For Part 3 (R), prepare sticky notes with various digital times from school day.	Know the movement of the minute hand. PE 2.3.E	TLG p809, "How do you solve a number-grid puzzle?"
10♦3	2.1.F Compare and order numbers from 0 to 1,000. 2.2.C Add and subtract two-digit numbers efficiently and accurately using a procedure that works with all two-digit numbers and explain why the procedure works. 2.2.H Name each standard U.S. coin, write its value using the \$ and the ¢ sign, and name combinations of other coins with the same total value. 2.2.I Determine the value of a collection of coins totaling less than \$1.00.	Share and justify strategies for solving number stories. PE 2.2.I & 2.2.C			<i>P3EP Coin Dice</i> PE 2.2.H	Planning Ahead: Lesson 10♦4, Part 3 (E) uses advertisements from paper publications for computation practice.	Compare numbers using <, >, and =. PE 2.1.F	TLG p814, "How do you add 10 to a number?"
10♦4	1.1.E Write, compare, and order numbers to 120. 2.1.B Connect place value models with their numerical equivalents to 1,000. 2.2.C Add and subtract two-digit numbers efficiently and accurately using a procedure that works with all two-digit numbers and explain why the procedure works. 2.2.I Determine the value of a collection of coins totaling less than a dollar		Focus on using coin manipulatives to make change when modeling with students, rather than formal subtraction.		<i>P2 \$1, \$10, \$100 Exchange Game.</i> MM p331-4&349 PE 2.1.B ; <i>P3EP Dime-Nickel-Penny Grab.</i> MM p342 PE 1.1.E & 2.2.I	For Part 3 (E), provide collected advertisements. See TLG p 816.	Find differences in amounts of money. PE 2.2.C	

10♦5	<p>1.3.A Compare and sort a variety of two- and three-dimensional figures according to their geometric attributes.</p> <p>2.2.E Estimate sums and differences.</p> <p>2.3.E Use both analog and digital clocks to tell time to the minute</p>	<p>Identify and describe attributes of basic plane shapes.</p> <p>PE 1.3.A</p>	<p>Depending on your student's skills, it may be more appropriate to play <i>Time Math</i> as a class.</p>		<p><i>P2 Time Match.</i> MM p354-9 PE 2.3.E</p>	<p>Provide straws and twist-ties for Math Message. For Part 1, display some 2- and 3-D objects from Shapes Museum. The book "Color Zoo" relates to content of lesson.</p>	<p>Estimate sums.</p> <p>PE 2.2.E</p>	
10♦6	<p>1.1.E Write, compare and order numbers to 120</p> <p>2.2.C Add and subtract two-digit numbers efficiently and accurately using a procedure that works with all two-digit numbers and explain why the procedure works.</p> <p>3.5.B Measure temperature in degrees Fahrenheit and degrees Celsius using a thermometer.</p>	<p>Use subtraction to find differences between high and low temperatures of US cities.</p> <p>PE 2.2.C</p>	<p>Although measuring temperature is beyond 1st grade standard, this lesson is appropriate. Touch and Go. During "Finding Differences Between High and Low Temperatures" have students use number grids or the class number line to find the differences.</p>			<p>Planning Ahead: Helpful items for 10♦6: US Map, national weather map (newspaper), local forecast. Books that relate to lesson content are on TLG p827.</p>	<p>Compare temperatures.</p> <p>PE 3.5.B▼ & 1.1.E</p>	
10♦7	<p>1.2.I Recognize, extend, and create number patterns.</p> <p>2.1.C Identify the ones, tens, and hundreds place in a number and the digits occupying them.</p> <p>2.1.D Write three-digit numbers in expanded form.</p>	<p>Name values of digits in 2- and 3-digit numbers.</p> <p>PE 2.1.C</p>	<p>Provide ample time for this lesson. Do the enrichment activity "Writing Numbers in Expanded Notation" to support PE 2.1.D.</p>			<p>2-day Lesson</p>	<p>Solve number-grid puzzles.</p> <p>PE 1.2.I</p>	<p>TLG p836, "How do you read a clock?"</p>