

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.						
California Standards		Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	
Routines	NS 1.0 Students understand and use numbers up to 100. NS 1.1 Count, read, and write whole numbers to 100. NS 1.2 Compare and order whole numbers to 100 by using the symbols for less than, equal to, or greater than (<, =, >). NS 2.3 Identify one more than, one less than, 10 more than, and 10 less than a given number. NS 2.4 Count by 2s, 5s, and 10s to 100. MG 2.0 Students identify common geometric figures, classify them by common attributes, and describe their relative position or their location in space. MG 2.2 Classify familiar plane and solid objects by common attributes, such as color, position, shape, size, roundness, or number of corners, and explain which attributes are being used for classification. MG 2.3 Give and follow directions about location. MG 2.4 Arrange and describe objects in space by proximity, position, and direction (e.g., near, far, below, above, up, down, behind, in front of, next to, left or right of). SDAP 1.2 Represent and compare data (e.g., largest, smallest, most often, least often) by using pictures, bar graphs, tally charts, and picture graphs.		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.		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.			
	1♦1	NS 1.1 Count, read, and write whole numbers to 100. <i>NS 1.4 NS 1.5 MG 2.0 MR 1.2</i>	Count by 1s (Mental Math).	Use language such as first, second, and twelfth day of the month to reinforce ordinal numbers. <i>For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG</i>	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.
	1♦2	NS 1.0 Students understand and use numbers up to 100. <i>NS 1.1 SDAP 1.2</i>	Use a number line to determine number of students that are absent (counting up).		less than, more than, equal to	P1 <i>Monster Squeeze</i> : MM p4-5 NS 1.2	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.
	1♦3	NS 1.1 Count, read, and write whole numbers to 100. <i>NS 1.2</i>	Count objects by 1s.	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).	tool kit, pattern-block template square, hexagon, circle, triangle, trapezoid, rhombus	P1 <i>Penny-Dice Game</i> NS 1.1 P2 <i>Monster Squeeze</i> : MM p4-5 NS 1.2	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.
	1♦4	NS 1.1 Count, read, and write whole numbers to 100. <i>NS 1.0 NS 2.4</i>	Count by 5s (Mental Math).	LIT <i>Anno's Counting Book</i> by Mitsumasa Anno LIT <i>City by Numbers</i> by Stephen T. Johnson	slate	P2 <i>Penny-Dice Game</i> NS 1.1	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.

1♦5	<p>NS 2.3 Identify one more than, one less than, 10 more than, and 10 less than a given number.</p> <p style="text-align: center;"><i>NS 1.0 NS 1.2 MR 1.2</i></p>	Use a number line to solve and explain “one more” and “one less” stories.		less than, more than	P1 <i>Bunny Hop</i> . MM p341 AF 1.3 ; P2 <i>Penny-Dice Game</i> NS 1.2		Name numbers before and after a given number, using a number line.
1♦6	<p>NS 1.2 Compare and order whole numbers to 100 by using the symbols for less than, equal to, or greater than (<, =, >).</p> <p style="text-align: center;"><i>NS 1.1 NS 2.3</i></p>	Compare whole numbers with values up to 15.	<i>Top-It</i> Game is introduced. Students need to read the numbers aloud.	less than, more than	P1 <i>Top-It</i> . MRB p154, MM p305 NS 1.2 ; P2 <i>Monster Squeeze</i> . MM p4-5 NS 1.2 ; P3 <i>Penny Dice Game</i> NS 1.1	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.	Tell the number that is one more and one less than any number up to 10.
1♦7	<p>SDAP 1.2 Represent and compare data (e.g., largest, smallest, most often, least often) by using pictures, bar graphs, tally charts, and picture graphs.</p> <p style="text-align: center;"><i>NS 1.1 NS 2.4 SDAP 1.1</i></p>	Represent numbers using tally marks.	Create picture graph of tally chart to count children’s pets. 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?).	tally mark	P2 <i>Top-It</i> . MRB p154, MM p305 NS 1.2	Create a class data chart (TLG p43-44), coins or straws to count days; (E) TLG p42 for can & pennies.	Write the numbers 3 and 4 legibly.
1♦8	<p>SDAP 1.2 Represent and compare data (e.g., largest, smallest, most often, least often) by using pictures, bar graphs, tally charts, and picture graphs.</p> <p style="text-align: center;"><i>NS 1.1 SDAP 1.1</i></p>	Use tally marks to record rolls of a die.	Create a class bar graph of the results and ask comparison questions about the graph.		P3E <i>Rock, Paper, Scissors</i> . MM p352 SDAP 1.2	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.	Represent numbers using tally marks.
1♦9	<p>NS 1.1 Count, read, and write whole numbers to 100.</p> <p style="text-align: center;"><i>NS 1.0</i></p>	Use a calendar to answer questions about days, weeks, months and dates.	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.	calendar; date		Class Calendar displayed for students to access, For Part 3 (E), copies of variety of calendars.	Write the numbers 5 and 6 legibly.
1♦10	<p>NS 1.2 Compare and order whole numbers to 100 by using the symbols for less than, equal to, or greater than (<, =, >).</p> <p style="text-align: center;"><i>NS 1.1</i></p>	Compare whole numbers with values up to 22.			P1 <i>Top-It</i> . MRB p154, MM p305 NS 1.2 ; P2 <i>Monster Squeeze</i> . MM p4-5 NS 1.2	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.	Count hops on a number line.
1♦11	<p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p style="text-align: center;"><i>NS 1.1</i></p>	Use a number line to solve problems (Mental Math).		Exploration, pattern blocks, base-10 blocks, geoboard	P2 <i>Top-It</i> . MRB p154, MM p305 NS 1.2	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.	Compare numbers and tell which is greater.

1♦12	<p>NS 1.1 Count, read, and write whole numbers to 100.</p> <p><i>NS 2.4 SDAP 1.1 SDAP 1.2</i></p>	<p>Use a number line to count by 2s (Mental Math).</p>	<p>Discuss strategies for counting tally marks (i.e. recognizing five and count up or down, group by five). Create a class picture graph of tally chart to show favorite weather. 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?).</p>	<p>temperature, degree, thermometer, Fahrenheit</p>	<p>P2 <i>Bunny Hop</i>. MM p341 AF 1.3</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>
1♦13	<p>MR 1.1 Determine the approach, materials, and strategies to be used.</p> <p><i>NS 2.4 NS 2.5 MR 1.0 MR 2.1</i></p>	<p>Share number story strategies and solutions with pennies.</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.</p>	<p>number story</p>	<p>P2 <i>Penny Dice Game</i> NS 1.1</p>		<p>Solve simple number stories.</p>
CA Project 9	<p>MG 2.3 Give and follow directions about location. MG 2.4 Arrange and describe objects in space by proximity, position, and direction (e.g., near, far, below, above, up, down, behind, in front of, next to, left or right of).</p>	<p><i>Where Is It?</i></p> <p>Give and follow positional directions.</p>	<p>Think about how to incorporate ELD strategies when addressing the planning of this lesson; model the vocabulary.</p>			<p>Find some <i>Spy</i> books and a CA map. Write the name of some classroom objects (clock, weather chart, etc.) on paper or sentence strips and fold them in half. TLG p 459A</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.							
	California Standards	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs
2♦1	NS 1.1 Count, read, and write whole numbers to 100. NS 2.5	Use a Number-Grid to count up and back by ones from a given number.	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) <i>For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG</i>	number grid	P1 <i>Rolling for Fifty:</i> SMJ p7; AF 1.3 P2 <i>Top-it:</i> MRB p154, MM p305 NS 1.2	Number Grid poster – color return sweeps to match number grid in MRB.	Compare numbers.
2♦2	NS 1.1 Count, read, and write whole numbers to 100. NS 2.4 SDAP 1.2	Use numbers to record personal information.	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.
2♦3	NS 1.3 Represent equivalent forms of the same number through the use of physical models, diagrams, and number expressions (to 20) (e.g., 8 may be represented as 4 + 4, 5 + 3, 2 + 2 + 2 + 2, 10 - 2, 11 - 3). NS 1.1 NS 2.5	Use counters to find pairs of numbers that equal 10 (complements of 10).	<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.	math boxes	P1 <i>Two Fisted Penny Addition</i> MM p25 NS 1.3	For Enrichment activity: MM p27, 2 per partner. See TLG p108 for mystery bags prep.	Represent sums of 10.
2♦4	NS 1.1 Count, read, and write whole numbers to 100. MR 1.2	Use a Number-Grid to determine the amount counted up (Mental Math).		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.
2♦5	MG 1.2 Tell time to the nearest half hour and relate time to events (e.g., before/after, shorter/longer). NS 1.1	Estimate time by 'reading' the hour hand on an analog clock.	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 AF 1.3	Prepare demo clock, see TLG p115; Copy MM p31 (cardstock).	Order numbers.
2♦6	MG 1.2 Tell time to the nearest half hour and relate time to events (e.g., before/after, shorter/longer). NS 2.5 MR 2.2	Tell time to the nearest hour on an analog clock.		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).
2♦7	MR 1.2 Use tools, such as manipulatives or sketches, to model problems. NS 2.5 MG 1.1 SDAP 1.1 MR 1.1	Sort dominoes by the number of dots on one half (Exploration C).		ruler	P2 <i>Rolling for Fifty:</i> SMJp7 AF 1.3	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.

2+8	<p>NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value.</p> <p style="text-align: center;"><i>NS 1.1 NS 1.2 NS 2.5</i></p>	Estimate, count and compare handfuls of pennies (Penny Grab).	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.	penny, cent	P1 <i>Penny Grab</i> : MM p350; NS 3.1 P2 <i>Penny Plate</i> : MRB p146; NS 3.1 P3 <i>Penny Dice Game</i> NS 1.1	Magnifying lenses and 10 pennies per student; Prepare "Story of Money" poster (TLG p130 & 683).	Compare quantities of pennies.
2+9	<p>NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value.</p> <p style="text-align: center;"><i>NS 1.1 NS 2.4</i></p>	Count and exchange pennies for nickels.		nickel		Display Story of Money poster Each student needs 5 nickels (nickels go in tool-kits).	Count by 5s.
2+10	<p>NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value.</p> <p style="text-align: center;"><i>NS 2.4</i></p>	Count nickels and pennies using a counting on strategy.			P2 <i>Penny-Nickel Exchange</i> NS 1.5	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.
2+11	<p>NS 2.5 Show the meaning of addition (putting together, increasing) and subtraction (taking away, comparing, finding the difference).</p> <p style="text-align: center;"><i>NS 1.1 NS 2.6 AF 1.0 AF 1.1 AF 1.2</i></p>	Write an equation (number model) using "+" and "=" symbols.	Extend lesson to allow ample time for students to write their own equations (number model).	add, plus, is equal to, number model, equation	P3E <i>Nickel-Penny Grab</i> : MM p347 NS 1.5	2-day lesson. Container or can for pennies	Tell time to the hour.
2+12	<p>NS 2.5 Show the meaning of addition (putting together, increasing) and subtraction (taking away, comparing, finding the difference).</p> <p style="text-align: center;"><i>NS 1.1 NS 1.5 NS 2.6 AF 1.0 AF 1.1 AF 1.2 AF 1.3</i></p>	Write an equation using "-" and "=" symbols.	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.	subtract, minus	P2 <i>High Roller</i> : (Moved to 3+3) MM p344 NS 2.1	12 paper cups; Use real nickels and pennies for Mental Math/Reflexes.	Find sums of 1-digit numbers.
2+13	<p>AF 1.1 Write and solve number sentences from problem situations that express relationships involving addition and subtraction.</p> <p style="text-align: center;"><i>NS 2.4 NS 2.5 NS 2.7 AF 1.0 AF 1.2 MR 1.2</i></p>	Share and justify strategies for solving number stories with nickels and pennies.	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; have more than one student not only share, but also explain why or how they determined their responses. LIT <i>Twenty Is Too Many</i> by Kate Dunn		P2 <i>Coin Top-It</i> NS 1.5	For Readiness activity: 7 large poster paper (see TLG p160).	Count nickels and pennies.

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.								
	California Standards	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
3♦1	SDAP 2.1 Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape). <i>NS 2.4 MR 2.0 MR 3.0</i>	Create and extend shape patterns.	LIT <i>Pattern Bugs</i> by Trudy Harris <i>For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG</i>	pattern	<i>P2 Before and After</i> : MRB p126 NS 2.3	16 craft sticks per partner.	Create and extend patterns.	TLG p186, No. 1: “How do you know which is the winning number in <i>Top-It?</i> ”
3♦2	SDAP 2.1 Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape). <i>NS 1.1 NS 2.4 MR 1.2</i>	Use pennies to determine patterns in odd and even numbers.	LIT <i>Missing Mittens</i> by Stuart J Murphy	even number; odd number	<i>P2 Penny-Nickel Exchange</i> NS 1.5	40 pennies per partner.	Distinguish between even and odd numbers.	TLG p192, “How do you know which coins show the cost in No. 1?”
3♦3	SDAP 2.1 Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape). <i>NS 1.1 NS 2.4</i>	Determine patterns on a Number-Grid when counting by twos.	After briefly discussing probability in part 2, introduce the game <i>High Roller</i> (from 2♦12) LIT <i>Each Orange Has 8 Slices</i> by Paul Gigante	column; row	<i>P2 High Roller (Moved from lesson 2♦12)</i> : MM p344 NS 2.1	Overhead transparency of number grid or large laminated grid with erasable pens; Optional: use “Each Orange Has 8 Slices” book as support.	Compare numbers.	
3♦4	SDAP 2.1 Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape). <i>SDAP 1.1 MR 1.2</i>	Sort dominoes by Odd and Even numbers of dots (Exploration A).	Extend Exploration B to allow ample time for students to cover shapes in a variety of ways. This is one of the few activities. 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 NS 2.3	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.	
3♦5	NS 2.4 Count by 2s, 5s, and 10s to 100. <i>NS 1.1 NS 1.5</i>	Use a number line to count up or back from a given number.	Connect skip counting to hops on the number line. LIT <i>Two Ways to Count to Ten</i> by Ruby Dee	number line; negative number	<i>P2 Coin Top-It</i> NS 1.5	For Part 3 (R) activity: see TLG p208 – large number line – save for future lessons.	Skip count.	
3♦6	NS 2.5 Show the meaning of addition (putting together, increasing) and subtraction (taking away, comparing, finding the difference). <i>NS 2.0 AF 1.1 AF 1.3 MR 1.1 MR 1.2</i>	Use a number line to solve addition and subtraction number stories.			<i>P3EP Bunny Hop</i> : MM p341 AF 1.3		Write number models.	
3♦7	MG 1.2 Tell time to the nearest half hour and relate time to events (e.g., before/after, shorter/longer). <i>NS 1.2 NS 2.6</i>	Tell time to the nearest half-hour.		half-past (the hour)	<i>P2 Penny-Nickel Exchange</i> NS 1.5	Demonstration clock.	Use tally chart to answer questions.	TLG p217, “How do you know if a number is even or odd?”
3♦8	SDAP 2.1 Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape). <i>NS 1.1 NS 2.4</i>	Use a rule to complete repeated addition or subtraction problems (Frames-and-Arrows).		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.	TLG p222, “Why is it important to use a calendar?”

3♦9	<p>SDAP 2.1 Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape).</p> <p><i>NS 2.4 MR 1.0</i></p>	Determine the 'rule' and solve Frames-and-Arrows problems.					Solve Frames-and-Arrows problems.	
3♦10	<p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p><i>NS 1.1 AF 1.2</i></p>	Count forward and backward by 1s, 2s, and 5s from a given number.	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 NS 1.5</i>	Calculators (preview functions to see what fits with lesson).	Count by 5s and then by 1s.	TLG p233, "How do you find a missing number to make a sum of 10?"
3♦11	<p>NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value.</p> <p><i>NS 1.1 NS 2.4 MR 1.1 MR 2.1</i></p>	Show money equivalencies with the fewest coins possible.		Dime, dollars & cent notation, decimal point	<i>P2 Coin Top-It NS 1.5</i>	Story of Money poster (lesson 2♦8) 10 dimes for each student (goes in tool-kit).	Make coin exchanges.	TLG p239, "How do you find the missing numbers in a Frames-and-Arrows problem?"
3♦12	<p>NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value.</p> <p><i>NS 2.4 MR 2.1 MR 2.2</i></p>	Find the values of combinations of dimes, nickels and pennies.	Allow ample time for students to practice counting combinations of Dimes, Nickels and Pennies. LIT <i>The Great Pet Sale</i> by Mick Inkpen		<i>P2 Coin-Dice NS 1.5</i>	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.	
3♦13	<p>SDAP 1.0 Students organize, represent, and compare data by category on simple graphs and charts.</p> <p><i>NS 1.2 SDAP 1.1 SDAP 1.2 MR 2.1</i></p>	Use a class generated line plot to answer simple questions about sibling data.	Emphasize data discussion about siblings (i.e. Who has no siblings? Who has more than 3 siblings?).	line plot, data	<i>P2 Dime-Nickel-Penny Grab: MM p342 NS 1.5</i>		Make sums of 10.	
3♦14	<p>NS 1.3 Represent equivalent forms of the same number through the use of physical models, diagrams, and number expressions (to 20) (e.g., 8 may be represented as 4 + 4, 5 + 3, 2 + 2 + 2 + 2, 10 - 2, 11 - 3).</p> <p><i>NS 1.0 AF 1.0 SDAP 2.0</i></p>	Use dominoes to find sums for Parts-and-Total diagrams.	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.		<i>P1 Domino Top-It, NS 2.6 P2 High Roller: MM p344 NS 2.1</i>	Dominoes from SMJ 1, Activity Sheets 4-5 for each student (cardstock); For Enrichment activity: MM p58-60 from 3♦4	Find dice sums.	TLG p254, "Why do you use a number line?"
Project 1	<p>MG 2.0 Students identify common geometric figures, classify them by common attributes, and describe their relative position or their location in space.</p> <p>SDAP 2.1 Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape).</p>	<p><i>Geometric Gift Wrap & Greeting Cards</i></p> <p>Use and identify geometric shapes.</p>				TLG p 430		
Project 3	<p>NS 3.0 Students use estimation strategies in computation and problem solving that involve numbers that use the ones, tens, and hundreds places.</p> <p>MG 1.0 Students use direct comparison and nonstandard units to describe the measurements of objects.</p> <p><i>MG 1.1 MR 2.2</i></p>	<p><i>Pumpkin Math</i></p> <p>Compare objects and make estimates.</p>	Perfect activity to do around Halloween.			You will need 3 pumpkins of various sizes. Identify each with an A, B, or C. TLG p 436		

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.						
California Standards	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes	
4♦1 NS 2.4	Read and record temperatures to the nearest 2 degrees F.	Although measuring temperature is a 3rd grade standard, it is taught in grades 1 and 2 in EDM. To support grade 2 students mastery, 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. <i>For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG</i>	Math Message; thermometer; temperature; degree; Fahrenheit	P2 <i>Domino Top-It</i> NS 2.6	Class thermometer poster. Start collecting paper towel tubes for 4♦10.	Skip count by 2s.		
4♦2 NS 1.1 NS 2.4	Use non-standard units (body parts or spans) to measure objects.	Extend lesson to allow ample time for students to compare lengths using the transitive property (bottom of TLG p283). 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).	unit; measure; length; digit; hand; hand span; yard; cubit; arm span	P2 <i>Two Fisted Penny Addition</i> MM p25 NS 1.3	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.		
4♦3 MR 1.0 MR 1.2 MR 2.1	Compare results when measuring objects using a personal “foot” and a standard foot.	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, 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. LIT <i>How Big is a Foot?</i> by Rolf Myller	foot; feet; standard foot	P2 <i>Coin-Dice</i> NS 1.5	1-foot strips of construction paper. Part 3 (E) uses the book, <i>How Big is a Foot?</i>	Solve Frames-and-Arrows problems.	TLG p295, “Why is it important to use a thermometer?”	
4♦4 NS 1.0 NS 1.1 MG 1.0	Use a ruler to measure objects to the nearest inch.	Although measuring length to the nearest inch is a second grade standard, it is appropriate to introduce at this time.	inch; in.	P2 <i>Time Match.</i> MM p354-9 MG 1.2	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.	TLG p300, “How do you know which pet is most popular in No. 2?”	
4♦5 NS 1.5	Estimate lengths, and then measure to the nearest inch.	LIT <i>Jack and the Beanstalk</i> (any version)	estimate	P2 <i>Domino Top-It</i> NS 2.6		Find domino sums and compare quantities.		

4♦6	<p>MG 1.0 Students use direct comparison and nonstandard units to describe the measurements of objects.</p> <p><i>NS 1.1 NS 2.5 AF 1.3</i></p>	Measure around and across objects with a tape measure.		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.	
4♦7	<p>MG 2.1 Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects.</p> <p>SDAP 1.2 Represent and compare data (e.g., largest, smallest, most often, least often) by using pictures, bar graphs, tally charts, and picture graphs.</p> <p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p><i>NS 2.0 MG 1.0 MR 2.2</i></p>	Find complements of 8 and 9 (Part 2).	Exploration A is revisited in 9♦5 and 10♦1. Save your data to use in those lessons.	typical; bar graph cubes, longs, flats, ones	P2 <i>Two Fisted Penny Addition</i> MM p25 NS 1.3	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.	Solve easy dice sums.	TLG p317, "How did you draw the line segment in No. 2?"
4♦8	<p>MG 1.2 Tell time to the nearest half hour and relate time to events (e.g., before/after, shorter/longer).</p> <p><i>NS 2.4 MR 1.2</i></p>	Use common phrases to tell time to the nearest half- and quarter-hour.	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.	half-past (the hour); quarter-after; quarter past (the hour); quarter-before, quarter-to (the hour)	P2 <i>Dime-Nickel-Penny Grab</i> : MM p342; NS 1.5 P2 <i>Two Fisted Penny Addition</i> MM p25 NS 1.3	Demonstration Clock	Tell time.	
4♦9	<p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p><i>NS 1.2 NS 2.5 MR 2.2</i></p>	Sequence activities using ordinal numbers (Part 3).	Modification: Begin with Readiness Activity "Sequencing Before-School Activities" in part 3. Use ordinal language when sequencing before-school activities. Do the Math Boxes. Skip Part 1 and Home Link. Optional "Practicing Telling Time" in Part 2.	timeline		Draw 24-hour timeline – See TLG p320.	Measure to the nearest inch.	
4♦10	<p>NS 1.2 Compare and order whole numbers to 100 by using the symbols for less than, equal to, or greater than (<, =, >).</p> <p><i>NS 1.2 NS 1.5 NS 2.3 SDAP 2.0 MR 1.2</i></p>	Record counting numbers up to 300 on blank Number-Grids (Number Scrolls).	Play <i>Time Match</i> as you did before, only use quarter hour to provide enrichment if necessary.	number scroll	P2 <i>Time Match</i> MM p356 MG 1.2	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.	Answer probability questions.	TLG p333, "Why is it important to use a ruler?"
4♦11	<p>NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory.</p> <p><i>NS 2.0 NS 2.4</i></p>	Share and justify strategies for solving addition 'facts'.	LIT <i>Anno's Counting House</i> by Mitsumasa Anno	addition facts; sum; fact power	P2 <i>High Roller</i> : MM p344 NS 2.1	For Part 3 (R), 1 set dominoes for pair. Part 3 (EP), modify MM p317 (see TLG p330 & 334).	Tell time to the quarter-hour.	TLG p338, "How do you know which color ou are more likely to grab in No. 1?"
4♦12	<p>NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory.</p> <p><i>NS 2.3 NS 2.7 NS 3.1 AF 1.3 MR 1.2</i></p>	Use choral reading to develop automaticity with addition facts (+0, +1, doubles).	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.		P1 <i>Shaker Addition Top-It</i> : NS 2.1 MM p353; P2 <i>Penny Plate</i> : MRB p146 NS 3.1	Base-10 cubes, 6-sided dice (or10-sided) – 2 per group.	Write addition facts.	
Project 2	<p>MG 1.0 Students use direct comparison and nonstandard units to describe the measurements of objects.</p> <p>SDAP 1.0 Students organize, represent, and compare data by category on simple graphs and charts.</p>	<p><i>Amaryllis Plant</i></p> <p>Collect and chart growth over time.</p>				The bulb grows quickly, but plant more than one (just in case). TLG p 433		

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.						
	California Standards	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
5♦1	NS 1.4 Count and group object in ones and tens (e.g., three groups of 10 and 4 equals 34, or 30 + 4). <i>NS 3.0 MR 1.2</i>	Use base-10 blocks to model and then record whole numbers to 99.	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 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? LIT <i>The Warlord's Beads</i> by Virginia Walton Pilegard LIT <i>Let's Count</i> by Tana Hoban <i>For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG</i>	base-10 blocks, longs, cubes, tens place, ones place	<i>P2 Digit Game</i> MRB p132 NS 1.2	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.	TLG p361, No 2, "How do you find a missing rule?"
5♦2	NS 1.4 Count and group object in ones and tens (e.g., three groups of 10 and 4 equals 34, or 30 + 4). <i>NS 1.1 NS 2.4 SDAP 2.1</i>	Determine patterns in base-10 numeration system using a calculator, a number-grid and base-10 blocks.	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 NS 1.3	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.	TLG p367, "How do you count base-10 blocks?"
5♦3	NS 1.2 Compare and order whole numbers to 100 by using the symbols for less than, equal to, or greater than (<, =, >). <i>NS 1.0 NS 3.1</i>	Use relation symbols (<, >, =) to compare whole numbers.	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. LIT <i>Just Enough Carrots</i> by Stuart J. Murphy	is more than, is less than	<i>P1 Top-it</i> (with Relation Symbols) MRB p154, MM p321; NS 1.2 <i>P2 Base-10 Exchange</i> : SMJ p81, MM p339 NS 1.4		Solve Frames-And-Arrows problems.	
5♦4	NS 1.1 Count, read, and write whole numbers to 100. MG 1.1 Compare the length, weight, and volume of two or more objects by using direct comparison or a nonstandard unit. <i>NS 1.4 MR 1.0 MR 1.2</i>	Share and explain strategies to count large quantities of pennies (Exploration C).	Exploration A requires teacher guidance when completing the recording sheet.	area, pan balance	<i>P2 Digit Game</i> : MRB p132 NS 1.2	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	<p>NS 2.6 Solve addition and subtraction problems with one- and two-digit numbers (e.g., $5 + 58 = \underline{\quad}$).</p> <p><i>NS 1.4 NS 2.1 NS 2.5</i></p>	Use base-10 blocks to model addition of 1- and 2-digit numbers.	Begin with Readiness Activity "Solving Parts-and-Total Problems" MM p.139.		<p><i>P2 Shaker Addition Top-It</i> MM p353; NS 2.1</p> <p><i>P3E Animal Weight Top-It</i> SMJ 1 A7,8</p> <p>MG 1.1</p>	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.	TLG p382. "How do you know how many tens are in a number?"
5♦6	<p>NS 1.2 Compare and order whole numbers to 100 by using the symbols for less than, equal to, or greater than ($<$, $=$, $>$).</p> <p><i>NS 1.4 NS 2.3</i></p>	Use relation symbols ($<$, $>$, $=$) to compare animal weights.				Part 3 (R); each child uses a different quantity of cubes up to 20.	Compare numbers through hundreds using $<$ and $>$.	
5♦7	<p>NS 2.0 Students demonstrate the meaning of addition and subtraction and use these operations to solve problems.</p> <p><i>NS 1.2 NS 2.5</i></p>	Find differences using a comparison model.		difference	<p><i>P1 Difference Game</i>: MRB p130</p> <p>NS 1.2</p>		Solve comparison problems using pennies.	
5♦8	<p>AF 1.1 Write and solve number sentences from problem situations that express relationships involving addition and subtraction.</p> <p><i>NS 2.6 AF 1.0</i></p>	Record equations to match solution strategies for Addition and Subtraction Number stories.	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.			Start collecting egg cartons for lesson 6♦7.	Identify digits in 2-digit numbers.	TLG p396, "What is a pattern?"
5♦9	<p>NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory.</p> <p><i>NS 3.0 SDAP 1.0 SDAP 1.1 MR 3.0</i></p>	Use tally chart to draw conclusions about the frequency of dice roll sums.	LIT <i>Probably Pistachio</i> by Stuart J. Murphy	multiple of 10	<p><i>P2 Base-10 Exchange</i>: MM p339 NS 1.4</p>	Save tally chart to use with lesson 6♦1.	Show time to the quarter-hour on a clock.	TLG p 401, "How do you use $>$ to compare numbers?"
5♦10	<p>NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory.</p> <p><i>NS 1.3 MR 2.2</i></p>	Use the commutative property of addition to solve basic facts (Turn-Around facts).		turn-around fact, doubles fact	<p><i>P3E Domino Top-It</i> NS 2.6</p>		Solve simple number stories.	
5♦11	<p>NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory.</p> <p><i>NS 3.0 SDAP 2.1</i></p>	Develop automaticity of basic addition facts using 'Doubles' and '10 Sums' strategies.	Have a class discussion so students can share the strategies and patterns for all the easy facts after each strategy has been colored.		<p><i>P1 Beat the Calculator</i>: MRB p124; NS 2.1</p> <p><i>P2 Penny Plate</i>: MRB p146; NS 3.1</p> <p><i>P3 Two Fisted Penny Addition</i> MM p25 NS 1.3</p>	Part 3 (EP) uses MM p317 – fill in before copying with easy facts.	Write turn-around facts.	
5♦12	<p>NS 2.6 Solve addition and subtraction problems with one- and two-digit numbers (e.g., $5 + 58 = \underline{\quad}$).</p> <p>AF 1.0 Students use number sentences with operational symbols and expressions to solve problems.</p> <p>SDAP 2.0 Students sort objects and create and describe patterns by numbers, shapes, sizes, rhythms, or colors.</p> <p><i>NS 2.1 MR 2.1 MR 3.0</i></p>	Solve "What's My Rule?" problems (Function Machine).	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.	TLG p 417, "How do you find the temperature?"

5•13	<p>NS 2.6 Solve addition and subtraction problems with one- and two-digit numbers (e.g., $5 + 58 = \underline{\quad}$).</p> <p>AF 1.0 Students use number sentences with operational symbols and expressions to solve problems.</p> <p>SDAP 2.0 Students sort objects and create and describe patterns by numbers, shapes, sizes, rhythms, or colors.</p> <p style="text-align: center;"><i>NS 2.1 NS 2.7 MR 2.1</i></p>	Find or apply rules for function machine problems.	Encourage the use of number grids to check work on “What’s My Rule?” Problems.		<p><i>P2 Penny-Nickel-Dime Exchange</i></p> <p>NS 1.5</p>	Part 3 (EP) uses MM p323 – fill in before copying with four rules and input numbers.	Compare values of coin combinations.	
Project 6	<p>This is designed for the 100th Day; insert accordingly.</p> <p>NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value.</p> <p>NS 3.0 Students use estimation strategies in computation and problem solving that involve numbers that use the ones, tens, and hundreds places.</p> <p style="text-align: center;"><i>MR 1.2 MR 2.2</i></p>	<i>Celebrate the 100th Day</i>	<i>Do on or close to the 100th day of school.</i>			Ask each child to collect and bring a collection of 100 to school. Have them arrange the items for easy counting, perhaps mounted to a piece of cardboard. TLG p 448		
		Exploration of 100.						

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 <i>My Reference Book</i> .								
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.						
	California Standards	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
6♦1	NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory. <i>NS 1.2 NS 1.3 NS 2.7 MR 1.2</i>	Draw conclusions about probability of dice roll sums based on generated list of all possible outcomes.	<i>For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG</i>	Addition / Subtraction Facts Table	P1 <i>Addition Top-It</i> : MRB p122; NS 1.1 P2 <i>Difference Game</i> : MRB p130 NS 2.1	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.	Estimate costs for items.	TLG p540, "How do turn-around facts help you learn math facts?"
6♦2	NS 1.3 Represent equivalent forms of the same number through the use of physical models, diagrams, and number expressions (to 20) (e.g., 8 may be represented as 4 + 4, 5 + 3, 2 + 2 + 2 + 2, 10 - 2, 11 - 3). <i>NS 2.3 NS 2.7 AF 1.1 AF 1.2</i>	Find equivalent names for numbers (Name-Collection Box).	Modeling Name Collection Boxes should also include base-10 blocks, three or more addends, and fact families.	equivalent names; name-collection box	P2 <i>Addition Top-It</i> : MRB p122 NS 1.2	For Part 1, choose appropriate objects. See TLG p 542. For 5♦4, prepare Fact Triangles in SMJ2, Activity Sheets 9 & 10.	Write addition facts.	
6♦3	NS 2.2 Use the inverse relationship between addition and subtraction to solve problems. <i>NS 1.3 NS 2.1 NS 2.5 AF 1.1 AF 1.2</i>	Use dominoes to generate addition and subtraction equations within a fact family.		fact family		Part 1, MM p166, 1 per 2 students, cut apart.	Find parts and totals.	
6♦4	NS 2.2 Use the inverse relationship between addition and subtraction to solve problems. <i>NS 2.1 NS 2.4 AF 1.2</i>	Use fact triangles to develop automaticity with some addition and subtraction facts.		Fact Triangle	P1 <i>Beat the Calculator</i> : SMJ p116; NS 2.1 P2 <i>Fact Power Game</i> : MM p343 NS 2.1	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.	Do stop-and-start counting by 10s, then 5s, and then 1s.	
6♦5	NS 2.2 Use the inverse relationship between addition and subtraction to solve problems. <i>NS 2.1 SDAP 2.1</i>	Use the Addition / Subtraction Facts Table to solve problems.	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. See the NOTE on TLG p561 regarding the use of the facts table.		P2 <i>Addition Top-It</i> : MRB p122; NS 1.2 P3EP <i>Penny Plate</i> : MRB p146 NS 3.1	For 5♦7, students add the remaining Fact Triangles to complete their set, Activity Sheets 11 & 12.	Use the Addition / Subtraction Facts Table to solve addition problems.	TLG p561, "What is a fact family?"
6♦6	MG 1.0 Students use direct comparison and nonstandard units to describe the measurements of objects. <i>NS 1.1 NS 1.4</i>	Use ruler to measure to the nearest centimeter.	Although measuring in centimeters is a 2nd grade standard, the activities are appropriate.	cm, centimeter, metric system		For Math Message have base-10 longs available. Part 2; prepare spinners ahead of time, MM p328. See TLG p563 and p 566.	Analyze and interpret data.	

6♦7	<p>NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory. MG 2.1 Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects.</p> <p><i>SDAP 1.2 SDAP 2.1 MR 1.0</i></p>	Solve randomly generated addition problems (Exploration B).	Provide ample time to complete all explorations. See NOTE on TLG p571 regarding Exploration B.		P2 <i>Fact Power Game</i> : MM p343 NS 2.1	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.	Solve easy addition facts.	
6♦8	<p>NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory. NS 2.2 Use the inverse relationship between addition and subtraction to solve problems. NS 2.6 Solve addition and subtraction problems with one- and two-digit numbers (e.g., $5 + 58 = \underline{\quad}$). SDAP 2.0 Students sort objects and create and describe patterns by numbers, shapes, sizes, rhythms, or colors.</p> <p><i>NS 3.0 MR 2.1</i></p>	Solve "What's My Rule?" function machine problems with missing inputs or outputs.			P2 <i>Tric-Trac</i> : MRB p156, MM p360 NS 2.1		Find the rule in "What's My Rule?" problems.	TLG p578, "How do you compare numbers on a graph?"
6♦9	<p>NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value.</p> <p><i>NS 2.5 MR 2.2</i></p>	Calculate the value of combinations of quarters, dimes, nickels, and pennies.	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. LIT <i>26 Letters and 99 Cents</i> by Tana Hoban LIT <i>Deena's Lucky Penny</i> by Barbara deRubertis	quarter	P2 <i>Coin Top-It</i> , NS 1.5 P3R <i>Penny-Nickel-Dime Exchange</i> , NS 1.5 P3E <i>Quarter-Dime-Nickel-Penny Grab</i> : MM p351 NS 1.5	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, "1" by Hoban would be helpful.	Answer probability questions.	
6♦10	<p>MG 1.2 Tell time to the nearest half hour and relate time to events (e.g., before/after, shorter/longer).</p> <p><i>NS 2.4 AF 1.1 MR 1.0 MR 1.1</i></p>	Tell and record digital and analog time to the quarter, half and hour.	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".	digital clock	P2 <i>Coin Exchange</i> : MRB p128; NS 1.5 P3EP <i>Time Match</i> : MM p354-9 MG 1.2	Part 3 (EP), use cards from 4♦4 (TLG p295) or make new ones from MM p354-5.	Solve number stories.	TLG p592, "How do you count a handful of coins?"
6♦11	<p>NS 1.0 Students understand and use numbers up to 100.</p> <p><i>MG 1.2 MR 1.2</i></p>	Use ruler to measure to the nearest centimeter.	Begin with the Readiness Activity "Ordering Ourselves".	"My Reference Book", table of contents		For Part 3 (R), prepare ordinal cards. TLG p593.	Show and tell time.	TLG p 596, "How do you know which color you are more likely to spin?"
6♦12	<p>SDAP 1.2 Represent and compare data (e.g., largest, smallest, most often, least often) by using pictures, bar graphs, tally charts, and picture graphs.</p> <p><i>NS 1.1 SDAP 1.0</i></p>	Create a tally chart and a bar graph to organize data.	If time allows, do Enrichment activity "Collecting and Analyzing Data".	middle value, range	P2 <i>Tric-Trac</i> : MRB p156, MM p360 NS 2.1	For Part 1, prepare class chart. See TLG p598.	Solve addition facts.	
Project 10	<p>NS 2.7 Find the sum of three one-digit numbers. AF 1.3 Create problem situations that might lead to given number sentences involving addition and subtraction</p>	<p><i>Addition w/ 3 Addends</i></p> <p>Adding 3 1-digit number.</p>				Collect 7 oranges, 3 grapefruit and 4 lemons. These will be used to create stories (other fruit can be substituted).		

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.						
California Standards		Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
7♦1	<p>MG 2.1 Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects.</p> <p>MG 2.2 Classify familiar plane and solid objects by common attributes, such as color, position, shape, size, roundness, or number of corners, and explain which attributes are being used for classification.</p> <p><i>NS 2.1 SDAP 2.0</i></p>	Sort Attribute Blocks according to a given rule.	<p>Add Readiness activity "Fishing for Attributes" to your classroom routines for a few days to provide more practice sorting.</p> <p><i>For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG</i></p>	triangle, square, rectangle, hexagon, circle, attribute	P1 <i>Beat the Calculator</i> . SMJ p116; NS 2.1 P2 <i>Make My Design</i> . SMJ p137 MG 2.2	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.	
7♦2	<p>NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory.</p> <p>MG 2.2 Classify familiar plane and solid objects by common attributes, such as color, position, shape, size, roundness, or number of corners, and explain which attributes are being used for classification.</p> <p><i>NS 2.2 MG 2.1</i></p>	Identify attribute blocks that differ from each other in only one way. (Exploration A)			P1 <i>Attribute Train Game</i> ; MG 2.2 P2 <i>Time Match</i> . MM p354-9 MG 1.2	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.	
7♦3	<p>MG 2.1 Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects.</p> <p>MG 2.2 Classify familiar plane and solid objects by common attributes, such as color, position, shape, size, roundness, or number of corners, and explain which attributes are being used for classification.</p> <p><i>NS 2.0</i></p>	Identify pattern block shapes.	LIT <i>Round Is a Mooncake: A Book of Shapes</i> by Roseanna Thong	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.	TLG p636, "What is a rectangle?"
7♦4	<p>MG 2.1 Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects.</p> <p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p><i>MG 2.2 SDAP 2.1</i></p>	Compare shapes according to their attributes.	Prior to students completing the Name Collection Box, model the use of equations with three addends (i.e. $4+3+5=12$). 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.	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.	
7♦5	<p>MG 2.1 Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects.</p> <p>MG 2.2 Classify familiar plane and solid objects by common attributes, such as color, position, shape, size, roundness, or number of corners, and explain which attributes are being used for classification.</p> <p><i>NS 1.4</i></p>	Describe basic characteristics of 3-D solid figures. (sphere, cylinder, rectangular prism)		sphere, cylinder, rectangular prism, surface, face	P2 <i>Coin Exchange</i> . MRB p128 NS 1.5	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.	TLG p647, "What is a polygon?"

7♦6	<p>MG 2.1 Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects.</p> <p>MG 2.2 Classify familiar plane and solid objects by common attributes, such as color, position, shape, size, roundness, or number of corners, and explain which attributes are being used for classification.</p> <p style="text-align: center;"><i>NS 2.3</i></p>	Describe basic characteristics of 3-D solid figures. (pyramid, cone, cube)	LIT <i>Cubes, Cones, Cylinders, and Spheres</i> by Tana Hoban	pyramid, cone, cube	<i>P2 Attribute Train Game</i> MG 2.2	For Math Message (cone) and Part 1 (cube, pyramid) prepare labeled index cards and models. Add to Shapes Museum.	Recognize attributes of Attribute Blocks	TLG p652, "What patterns do you see on the Number Grid, Problem 4?"
7♦7	<p>MG 2.0 Students identify common geometric figures, classify them by common attributes, and describe their relative position or their location in space.</p> <p style="text-align: center;"><i>NS 3.0 MR 1.2</i></p>	Use folded paper to create symmetrical shapes.	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. Touch & Go "Making Symmetrical Shapes".	symmetrical, symmetry	<i>P2 Addition Top-It</i> : MRB p122; NS 2.1 <i>P3EP Make My Design</i> : SMJ p137 MG 2.2	Math Message uses MM p215, 1 per student. Part 3, (E) uses symmetry cards. See TLG p654.	Identify cylinders.	
Project 7	<p>NS 1.0 Students understand and use numbers up to 100.</p> <p>MG 2.0 Students identify common geometric figures, classify them by common attributes, and describe their relative position or their location in space.</p>	<p><i>Weather & Probability</i></p> <p>Introduce the language of probability.</p>		likely, unlikely		You will need data about the weather in your area; a class weather chart is excellent.		

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.						
California Standards	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes	
8♦1 NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value. <i>NS 1.2 NS 1.4</i>	Calculate the value of combinations of quarters, dimes, nickels, and pennies.	Provide extra teacher support with money notation. If your students are not comfortable with quarters, do SMJ p151 whole class. <i>For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG</i>		P1 <i>Coin Exchange</i> : MRB p128; NS 1.5 P3EP <i>Coin Top-it</i> NS 1.5	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.	TLG p680, “Why is it important to know addition facts?”	
8♦2 NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value. <i>NS 1.2 NS 1.3</i>	Use dollars bills and coins to represent amounts written in dollars-and-cents notation.	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. LIT <i>Follow the Money</i> by Loreen Leedy	decimal point	P1 <i>One-Dollar Exchange</i> : MRB p144, MM p224 NS 1.5	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 =.	TLG p686, “What is a prism?”	
8♦3 NS 1.1 Count, read, and write whole numbers to 100. NS 1.3 Represent equivalent forms of the same number through the use of physical models, diagrams, and number expressions (to 20) (e.g., 8 may be represented as 4 + 4, 5 + 3, 2 + 2 + 2 + 2, 10 - 2, 11 - 3). <i>NS 1.4 NS 2.1 MR 1.2</i>	Write 3-digit whole numbers modeled with base-10 blocks.	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. 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; NS 2.1 P3R <i>Beat the Calculator</i> : SMJ p116 NS 2.1	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.		
8♦4 NS 2.0 Students demonstrate the meaning of addition and subtraction and use these operations to solve problems. <i>NS 1.5 NS 2.6 NS 3.0 NS 3.1 MR 1.1</i>	Share and justify strategies for solving student generated number stories.	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 NS 1.4	2-Day Lesson	Solve easy subtraction facts.		
8♦5 NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value. <i>NS 1.1 NS 2.3 MR 1.2</i>	Make change using a counting up strategy.	Encourage students to use equations with three addends.	to make change	P2 <i>3, 2, 1 Game</i> : MRB p150; NS 2.6 P3R <i>Difference Game</i> : MRB p130 NS 1.2	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.		

8♦6	<p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p style="text-align: center;"><i>NS 3.0</i></p>	<p>Fold paper crackers to show equal parts (halves, thirds & fourths).</p>	<p>Touch & Go. This is the introduction to fraction concepts.</p> <p>LIT <i>Eating Fractions</i> by Bruce McMillan</p> <p>LIT <i>Picture Pie: A Circle Drawing Book</i> by Ed Emberley</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.</p>	<p>TLG p707, "How do you make change?"</p>
8♦7	<p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p style="text-align: center;"><i>NS 1.2 NS 1.5</i></p>	<p>Label fractional parts of a whole.</p>		<p>fraction, fractional part</p>	<p><i>P2 One-Dollar Exchange:</i> MRB p144, MM p224 NS 1.5</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.</p>	<p>TLG p712, "How do you know how many hundreds are in a number?"</p>
8♦8	<p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p style="text-align: center;"><i>NS 1.4 NS 3.0</i></p>	<p>Use pennies to determine quantities for fractional parts of sets.</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).</p> <p>LIT <i>The Father Who Had 10 Children</i> by Benedicte Guettier</p> <p>LIT <i>How Hungry Are You?</i> by Donna Jo Napoli</p>		<p><i>P2 Addition Top-It:</i> MRB p122 NS 1.2</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.</p>	
8♦9	<p>NS 2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory. SDAP 1.1 Sort objects and data by common attributes and describe the categories.</p> <p style="text-align: center;"><i>NS 2.4</i></p>	<p>Sort Fact Triangles according to strategies (doubles, near doubles & 10 sums). (Exploration C)</p>		<p>near doubles</p>	<p><i>P2 3, 2, 1 Game:</i> MRB p150 NS 2.6 <i>P3 Two Fisted Penny Addition</i> MM p25 NS 1.3</p>	<p>EXPLORATION: Math Message requires pieces of paper for drawing shapes with template.</p>	<p>Name 2-dimensional shapes.</p>	
Project 8	<p>NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value. NS 2.6 Solve addition and subtraction problems with one- and two-digit numbers (e.g., $5 + 58 = \underline{\quad}$).</p>	<p style="text-align: center;"><i>A Flea Market</i></p> <p>Buying and selling with coins.</p>				<p>Draft a letter describing the project; send to parents (see p 872 TLG Vol. 2)</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.						
California Standards	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes	
9♦1 NS 1.4 Count and group object in ones and tens (e.g., three groups of 10 and 4 equals 34, or 30 + 4). SDAP 2.1 Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape). NS 2.1 NS 2.4 MR 1.2	Use patterns in the base-10 number system to name missing numbers in a number-grid.	Provide ample time for this lesson. For additional support, use Readiness Activity “Piecing Together a Number Grid”. For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG		P1 <i>Beat the Calculator</i> . SMJ p116 NS 2.1	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.		
9♦2 NS 2.0 Students demonstrate the meaning of addition and subtraction and use these operations to solve problems. NS 1.1 NS 2.1 MR 2.1	Use a Number-Grid to count forward and backward by 1s and 10s from any number.	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?).		P1 <i>Number-Grid Game</i> . MRB p142, MM p249 NS 2.6	Students cut out the shapes on Activity Sheets 15 & 16 in Lesson 9♦3.	Use a number grid to add and subtract.	TLG p751; “What is the pattern in the sums in No. 2?”	
9♦3 NS 2.4 Count by 2s, 5s, and 10s to 100. SDAP 2.1 Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape). NS 1.4	Use patterns in the base-10 number system to complete number grid puzzles.	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 MG 2.2	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.	TLG p746; “How do you know who has more money in No. 6?”	
9♦4 NS 2.0 Students demonstrate the meaning of addition and subtraction and use these operations to solve problems. AF 1.1 Write and solve number sentences from problem situations that express relationships involving addition and subtraction. NS 2.6 NS 3.0 NS 3.1 AF 1.0 AF 1.2 AF 1.3	Share and justify strategies to solve animal stories involving 2-digit numbers.	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.		
9♦5 MG 1.1 Compare the length, weight, and volume of two or more objects by using direct comparison or a nonstandard unit. NS 1.0	Complete a symmetrical design using pattern blocks.	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. LIT <i>Lulu’s Lemonade</i> by Barbara deRubertis		P2 <i>Number-Grid Game</i> . MRB p142, MM p249 NS 2.6	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.	TLG p756; “What is a fraction of a shape?”	

9♦6	<p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p><i>MG 2.1 MR 3.0</i></p>	<p>Find multiple ways to fold paper squares to show the same fractional part.</p>	<p>Lessons 9♦6 through 9♦8 are lessons on comparing fractions and equivalent fractions. Although this is beyond 1st grade standards, exposure to the concepts is critical to support students in reaching mastery in 2nd and 3rd grade.</p>			<p>MM p267 for Math Message. The book "Fraction Action" relates to the content of lesson.</p>	<p>Divide shapes into equal parts.</p>	
9♦7	<p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p><i>MR 2.0</i></p>	<p>Use fraction strips to compare fractions.</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 NS 1.2</p>	<p>MM p270 for Math Message. For Part 3 (E), prepare fraction cards. See TLG p774.</p>	<p>Solve number-grid puzzles.</p>	
9♦8	<p>MR 1.2 Use tools, such as manipulatives or sketches, to model problems.</p> <p><i>NS 3.1</i></p>	<p>Find names for equivalent fractions using fraction strips.</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 NS 1.5</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>TLG p781; "What is a fraction of a group of objects?"</p>
CA Project 11	<p>MG 1.1 Compare the length, weight, and volume of two or more objects by using direct comparison or a nonstandard unit.</p>	<p><i>Comparing Length, Weight, & Volume</i></p> <p>Compare using direct comparisons and/or nonstandard units.</p>				<p>Collect various containers (pitchers, juice cups, drinking glasses, milk containers). More info on p 875i in TLG (vol. 2)</p>		<p>TLG p289, "How does drawing help you solve a number story?"</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.

California Standards	Learning Target	Comments	Vocabulary	Games	Advanced Prep	RSAs	Writing/Reasoning – Math Boxes
<p>10♦1</p> <p>SDAP 1.0 Students organize, represent, and compare data by category on simple graphs and charts.</p> <p><i>NS 2.0 MG 1.2 SDAP 1.2</i></p>	<p>Interpret data represented in a line plot.</p>	<p>Although finding the median (middle value) of a data set is beyond 1st grade standard, EDM covers this concept again in 2nd and 3rd 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 2nd 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.</p> <p><i>For additional Literature Connections not connected to specific lessons, see the Unit Overview in the TLG</i></p>	<p>No new vocabulary in Unit 10</p>		<p>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.</p>	<p>Find data landmarks.</p>	
<p>10♦2</p> <p>MG 1.2 Tell time to the nearest half hour and relate time to events (e.g., before/after, shorter/longer).</p> <p><i>NS 2.4 NS 3.0</i></p>	<p>Tell and show time to the nearest 5 minutes.</p>	<p>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.</p> <p>LIT <i>It’s About Time Max!</i> by Kitty Richards</p>		<p>P2 <i>Beat the Calculator</i>. SMJ p116 NS 2.1</p>	<p>For Part 3 (R), prepare sticky notes with various digital times from school day.</p>	<p>Know the movement of the minute hand.</p>	<p>TLG p809, “How do you solve a number-grid puzzle?”</p>
<p>10♦3</p> <p>NS 1.5 Identify and know the value of coins and show different combinations of coins that equal the same value. AF 1.1 Write and solve number sentences from problem situations that express relationships involving addition and subtraction.</p> <p><i>NS 1.2 NS 2.5 AF 1.2 AF 1.3 MR 1.1 MR 2.1</i></p>	<p>Share and justify strategies for solving number stories.</p>			<p>P3EP <i>Coin Dice</i> NS 1.5</p>	<p>Planning Ahead: Lesson 10♦4, Part 3 (E) uses advertisements from paper publications for computation practice.</p>	<p>Compare numbers using <, >, and =.</p>	<p>TLG p814, “How do you add 10 to a number?”</p>
<p>10♦4</p> <p>NS 1.1 Count, read, and write whole numbers to 100. AF 1.1 Write and solve number sentences from problem situations that express relationships involving addition and subtraction.</p> <p><i>NS 1.2 NS 1.4 NS 1.5 NS 2.5 AF 1.3</i></p>		<p>Focus on using coin manipulatives to make change when modeling with students, rather than formal subtraction.</p>		<p>P2 \$1, \$10, \$100 <i>Exchange Game</i>. MM p331-4&349 NS 1.5 P3EP <i>Dime-Nickel-Penny Grab</i>. MM p342 NS 1.5</p>	<p>For Part 3 (E), provide collected advertisements. See TLG p 816.</p>	<p>Find differences in amounts of money.</p>	

10♦5	<p>MG 2.1 Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three dimensional objects.</p> <p style="text-align: center;"><i>NS 3.1 MG 2.2</i></p>	Identify and describe attributes of basic plane shapes.	Depending on your student’s skills, it may be more appropriate to play <i>Time Math</i> as a class.		<p><i>P2 Time Match.</i> MM p354-9 MG 1.2</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.	Estimate sums.	
10♦6	<p>NS 3.1 Make reasonable estimates when comparing larger or smaller numbers.</p> <p style="text-align: center;"><i>NS 2.3 NS 2.6 NS 3.0 MR 2.0</i></p>	Use subtraction to find differences between high and low temperatures of US cities.	<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>LIT <i>Welcome to the Green House</i> by Jane Yolen LIT <i>Welcome to the Ice House</i> by Jane Yolen LIT <i>Cactus Desert, Arctic Tundra</i> by Donald Silver LIT <i>Tropical Rain Forest</i> by Donald Silver</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>	Compare temperatures.	
10♦7	<p>NS 1.1 Count, read, and write whole numbers to 100.</p> <p style="text-align: center;"><i>NS 1.2 NS 1.4 NS 2.4 MR 1.1 MR 1.2</i></p>	Name values of digits in 2- and 3-digit numbers.	Provide ample time for this lesson. Do the enrichment activity “Writing Numbers in Expanded Notation”.			2-day Lesson	Solve number-grid puzzles.	TLG p836, “How do you read a clock?”