

Grade: Second

Unit: **Mathematical Thinking at Grade 2**

4 weeks

Timeframe: **September**

Day 01	Day 02	Day 03	Day 04	Day 05
Every Day Counts	Every Day Counts	Every Day Counts	Every Day Counts	Every Day Counts
Introduce: • Counting Tape • Calendar	• Update all elements Introduce: • Coin Counter	• Update all Introduce birthday graph – • Make birthday markers and discuss birthday graph (p. 8-9)	• Update all. Discuss: • Coin Counter • Calendar – can you predict the pattern	• Update all. Discuss: • Coin Counter (p. 5) • Birthday Graph – add another month of birthdays (see p. 8-9)
Whole Group Lessons	Whole Group Lessons	Whole Group Lessons	Whole Group Lessons	Whole Group Lessons
Investigation 1, Session 1 • Exploring Cubes...(p. 4-5) <i>20 min.</i> • 10 Cubes (p. 5-6) <i>Descriptions could be recorded in a journal or in the Weekly Log (see p. 6) 30 min.</i>	Investigation 1, Session 2 • Exploring Pattern Blocks and Geoblocks (p. 10-12)	Investigation 1, Session 4 • Building Cube Things (p. 15-16) <i>15 min.</i> • Sorting Cube Things (p. 16-17) <i>35 min.</i>	Investigation 2, Session 1 • Today’s Number (p. 22-24) Introduce this routine linking the discussion to the Every Day Counts counting tape • Uses of Numbers (p. 25)	Investigation 2, Session 2 • Include “Today’s Number” as part of calendar time • Tens Go Fish (p. 26-28)
Choice Time	Choice Time	Choice Time	Choice Time	Choice Time
	Exploration of: • Cubes • Pattern Blocks • Geoblocks			
Homework	Homework	Homework	Homework	Homework
	Send home family letter (p. 174) Student Sheet 2: Arranging 10 Objects	Student Sheet 3: What Is Mathematics?	Student Sheet 4: How Do You Use Numbers?	
Teacher Support	Teacher Support	Teacher Support	Teacher Support	Teacher Support
Use the activities these first few days as an opportunity for students to explore materials as well as to learn your management routines for distributing, using, and cleaning up materials during math time. See Teacher Note , page 9.		See Dialogue Box on p. 18-19 for a “classroom snapshot” of sorting and classifying Cube Things		Any time you introduce a new game, such as Tens Go Fish today, make some type of recording an integral part of the activity. Records can be kept in a journal, by using the Weekly Log, or on separate sheets – whatever works best for you.

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Day 06	Day 07	Day 08	Day 09	Day 10
Every Day Counts	Every Day Counts	Every Day Counts	Every Day Counts	Every Day Counts
Update all. Discuss: • Birthday graph – add another month of birthdays • Counting Tape / 100 Chart	Update all. Discuss: • Coin Counter • Birthday graph – add another month of birthdays	Update all. Discuss: • Calendar • Birthday graph – add another month of birthdays	Update all. Discuss: • Calendar • Birthday graph – add another month of birthdays	Update all. Discuss: • Coin Counter • Calendar
Whole Group Lessons	Whole Group Lessons	Whole Group Lessons	Whole Group Lessons	Whole Group Lessons
Investigation 2, Session 3 • Turn Over 10 (p. 28-29) 20 min. • Introducing Choice Time (p. 29) 5 min.	Investigation 2, Session 6 • Today’s Number (p. 40) 15 min. • How Many Pockets? (p.41-43) 30 min. • Writing About Pockets (p. 43) 10 min.	• Shake Those Beans (MP1) Introduce this activity by having all students play for 6’s as described in the lesson. As they finish, students can move to Choice Time activities. 20 min.	Investigation 3, Session 1 • Find the Block (p. 55-56) 10 min. • Ways to Fill* (p. 57-58) *Use this opportunity to introduce the idea of <u>symmetry</u> as students explore with pattern blocks 20 min.	Catch-Up Day “Scout Them Out” is an activity in the supplemental Math Packet that can be used throughout the year for computation practice.
Choice Time	Choice Time	Choice Time	Choice Time	Choice Time
• Tens Go Fish (p. 30) • Turn Over 10 (p. 30) • Exploring Geoblocks		• Shake Those Beans (MP1 includes record sheets for 5-9) • Tens Go Fish (p. 30) • Turn Over 10 (p. 30) • Exploring Geoblocks	• Find the Block (p. 59) • Ways to Fill (p. 59) • Shapes Pictures on the computer (p. 58)	
Homework	Homework	Homework	Homework	Homework
Students play “Tens Go Fish” with someone at home (see note on p. 31)	Student Sheet 9: Pockets at Home	Practice Page A	Students play “Turn Over 10” with someone at home	
Teacher Support	Teacher Support	Teacher Support	Teacher Support	Teacher Support
See Teacher Note , page 32, “About Choice Time”. <i>Sessions 4 & 5, “Mystery Photos”, have been omitted from the plans but may be done as a whole group lesson if you choose.</i>	Read through the discussion of <i>How Many Pockets?</i> On pgs. 127-130 to familiarize yourself with this important classroom routine that will be repeated about every ten days throughout the year.	Shake Those Beans is an activity that can be rotated in and out of Choice Time options throughout the year to provide students with additional practice with number combinations to 9.	See notes on pages 54 and 61 for a discussion of using the <i>Shapes</i> software that accompanies the geometry activities in this unit. While it is optional, use of the software is highly recommended.	If you have been keeping pace with the lessons these first two weeks of school, you may want to have students continue with familiar Choice Time activities today, giving you an opportunity to gather some initial assessment information.

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Day 11	Day 12	Day 13	Day 14	Day 15
Every Day Counts	Every Day Counts	Every Day Counts	Every Day Counts	Every Day Counts
Update All Discuss: • Counting Tape (continue with Today's Number from <i>Investigations</i>)	Update All Discuss: • Coin Counter • Birthday Graph – add another month of birthdays	Update All Discuss: • Calendar • Counting Tape – do Today's Number	Update All Discuss: • Counting Tape / 100 Chart • Birthday Graph – add another month of birthdays	Update All Discuss: • Coin Counter – discuss options for trading coins
Whole Group Lessons	Whole Group Lessons	Whole Group Lessons	Whole Group Lessons	Whole Group Lessons
Investigation 3, Session 3 • Cover and Count* (p. 65) *Another opportunity for students to explore <u>symmetry</u> in this activity <i>15 min.</i> Introduce this new activity then have students move to Choice Time activities	Investigation 3, Session 4 After students have spent about 40 min. working with Choice Time activities, have a brief class discussion about the activities and materials. How are pattern blocks and geoblocks the same? How are they different?	Investigation 4, Session 1 • How Many People Are in Our Class? (p. 78-80) <i>20 min.</i> • Enough for the Class? (p. 80-81) <i>25 min.</i> • Sharing strategies – bring whole class together and ask 3-5 students to share their strategies for solving the problem. <i>10 min.</i>	Investigation 4, Sessions 2 • Exploring Coins (p. 86) (Use the Coin Counter from EDC to review the names and values of coins.) • Collect 25¢ (p. 87)	Investigation 4, Session 3 • Counting Strips (p. 92) <i>10 min.</i> • Class Discussion: Counting Strips (p.95) After Choice Time, bring students together to discuss their counting strips.
Choice Time	Choice Time	Choice Time	Choice Time	Choice Time
• Cover & Count (p.65) • Find the Block (p. 59) • Ways to Fill (p. 59) • Shapes Pictures on the computer (p. 58)	• Find the Block (p. 59) • Ways to Fill (p. 59) • Shapes Pictures on the computer (p. 58)	• Enough for the Class? (p. 80-81) • Shake Those Beans (MP1)	• Collect 25¢ (p. 89) • Enough for the Class? (p. 89) • Shake Those Beans (MP1)	• Counting Strips (p. 92) • Collect 25¢ (p. 89) • Enough for the Class? (p. 89) • Shake Those Beans (MP1)
Homework	Homework	Homework	Homework	Homework
Practice Page B	Student Sheet 17, Tomorrow's Number	Practice Page C	Student Sheet 20, Exploring Coins	
Teacher Support	Teacher Support	Teacher Support	Teacher Support	Teacher Support
Note that Sessions 2, 5, and 6 have been omitted from these plans. Students will revisit these materials and similar activities in the later geometry unit, <i>Shapes, Halves and Symmetry</i> .	Prep. note: You will need about 10-15 counting bags prepared for tomorrow's session and prepared sets of coins for Day 14 (see second column on page 77 for preparation details).	See Teacher Note on p. 82 for ways to support students' writing in math class.		Counting Strips can provide helpful assessment information. Include them in Choice Time at least once a month during the year; as the year progresses, challenge students to start their strip with increasingly large numbers, eventually into the hundreds.

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Day 16	Day 17	Day 18
Every Day Counts	Every Day Counts	Every Day Counts
Update All Discuss: • Counting Tape – do Today’s Number • Birthday Graph – add another month of birthdays	Update All Discuss: • Coin Counter (p. 5) • Birthday Graph – add another month of birthdays	Update All Discuss: • Calendar (See end of the month discussion, p. 7)
Whole Group Lessons	Whole Group Lessons	Whole Group Lessons
Investigation 5, Session 1 • Guess My Rule (p. 102) <i>10 min.</i> • Collecting & Recording Guess My Rule Data (p. 104) <i>10 min.</i> • Representing Data (p. 105) <i>35 min.</i>	Investigation 5, Session 2 • Representing Data with Categories (p. 107-108) <i>45 min.</i>	Investigation 5, Session 3 Pocket Day • How Many Pockets? (p. 113-114) <i>40 min.</i> Teacher Checkpoint • Today’s Number (p. 115) Either have students do this work in journals, or be sure to date and save their work to monitor progress over time. <i>15 min.</i>
Choice Time	Choice Time	Choice Time
Homework	Homework	Homework
Student Sheet 21, Counting Strips	Student Sheet 22, Tomorrow’s Number	Student Sheet 23, How Many Pockets?
Teacher Support	Teacher Support	Teacher Support
	Literacy Link: Once students have completed the representations of data, you might consider linking this with a writing lesson. Provide “speech bubbles” and have students write an <i>inference statement</i> about one of the graphs and post them by the graph.	You will need the pocket data from the previous “Pocket Day” (Day 7 of the plans) for today’s session.

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Investigations: Mathematical Thinking at Grade 2

Alignment to 2nd Grade Expectations

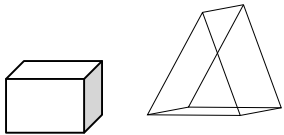

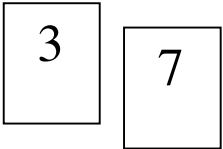
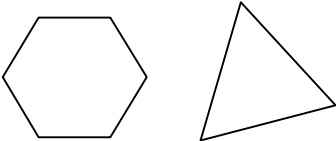
	Grade Level Expectation √ = Report Card Language	Activities that Address Expectations	Assessment Activity
NUMBER SENSE & NUMERATION	Can arrange a collection of up to 100 objects by tens and ones and use this grouping to count the quantity accurately.	How Many Pockets? p. 41 Enough for the Class? p. 80	See pgs. 129-130 for suggestions Student sheet 19
	Can count by 2's, 5's, and 10's to 100	How Many Pockets? p. 41 Enough for the Class? p. 80	Student Sheet 19
	Can read, write, order, model and compare numbers to 100 √ Reads, writes, orders and compares numbers to 100	Counting Strips, p. 92	Student Sheet 21
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<b>COMPUTATION</b>	Is fluent with addition and subtraction facts to 10 √ fluent with addition and subtraction facts to 10	10 cubes, p. 5 Today's Number, p. 22 (this routine continues throughout the year) Tens Go Fish, p. 26	Teacher Observation • Student Sheet 22 • Written record of number facts from Today's Number • Assessment Master #1 • Student Record of combinations of 10
	Knows and applies strategies to solve addition and subtraction facts to 18. √ Knows and applies strategies to solve addition and subtraction combinations to 18.	Today's Number, p. 22 (this routine continues throughout the year) Enough for the Class? p. 80	• Ongoing record of combinations for "Today's Number" kept in math journal or folder • Assessment Masters #3 and 4 • Student Sheet 22
	Has at least one efficient paper/pencil method for adding any two double-digit numbers √ Adds two double-digit numbers mentally and with paper and pencil	Enough for the Class? p. 80	Student Sheet 19 Assessment Masters #3 and 4
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STATISTICS and PROBABILITY	Conducts a simple survey among classmates, presents the data in the form of a graph, and explains his or her findings √ Conducts and simple survey and explains the findings	How Many Pockets? Routine, introduced p. 41-43 (continues throughout the year)	Student records of pocket data
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# Investigations: Mathematical Thinking at Grade 2 Alignment to 2nd Grade Expectations

	<b>Grade Level Expectation</b> √ = Report Card Language	<b>Activities that Address Expectations</b>	<b>Assessment Activity</b>
<b>GEOMETRY</b>	<p><b>Recognizes, describes, compares, classified and draws the following 2-dimensional shapes: square, triangle, rectangle, circle, trapezoid, hexagon, rhombus, and parallelogram</b></p> <p>√ Recognizes, describes, compares, classifies and draws 2-dimensional shapes</p>	<p>Exploring pattern blocks and geoblocks, p. 10-11</p> <p>Ways to Fill, p. 57</p> <p>Cover and Count, p. 65</p> <p>Shapes Pictures on the Computer, p. 58</p>	<p>Student sheets 11 and 12</p> <p>Student sheets 13-15</p>
	<p><b>Recognizes and describes the following 3-dimensional shapes: cube, sphere, rectangular prism, cylinder, and pyramid</b></p> <p>√ Recognizes and describes 3-dimensional shapes</p>	<p>Exploring pattern blocks and geoblocks, p. 10-11</p> <p>Find the Block, p. 59</p>	<p>See notes on "Observing the Students" p. 59 and p. 60</p> <p>Assessment Master #2</p>
	<p><b>Identifies and constructs simple designs that are symmetrical.</b></p> <p>√ Identifies and constructs designs that are symmetrical</p>	<p>Ways to Fill, p. 57</p> <p>Cover and Count, p. 65</p> <p>Shapes Pictures on the Computer, p. 58</p>	<p>Student sheets 11 and 12</p> <p>Student sheets 13-15</p>
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ALGEBRAIC THINKING	<p>Can generate many different ways to sort a collection of objects (e.g. specific attributes of a group of buttons such as size, color, shape, number of holes, etc.</p>	<p>Sorting Cube Things, p. 16</p> <p>Find the Block, p. 55-56</p> <p>Guess My Rule, p. 102</p>	<p>Teacher observation</p> <p>Student representations of data</p>
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<b>MEASUREMENT</b>	<p><b>Counts mixed collections of pennies, nickels, dimes, and quarters to at least \$1.00</b></p> <p>√ Counts mixed collections of coins to at least \$1</p>	<p>Collect 25¢, p. 87</p>	<p>Student Sheet 20</p> <p>Assessment Master #5</p>
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Choice Time

Name _____

My Choices	Date
Exploring Geoblocks 	
Tens Go Fish 	
Turn Over 10 	
Shake Those Beans	
Ways to Fill 	
Enough for the Class?	
Collect 25¢	

