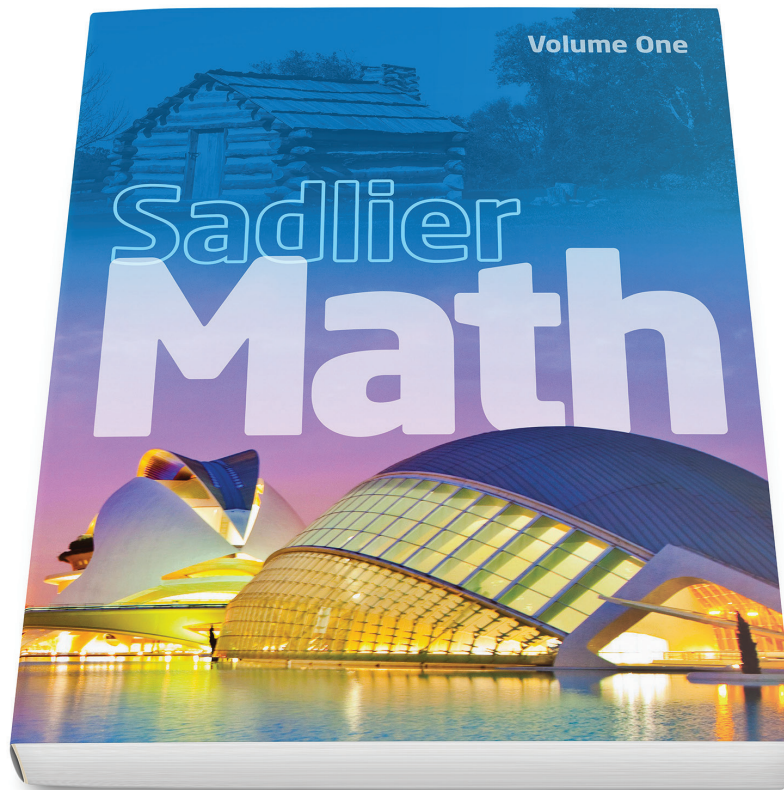# *Sadlier Math*™

Correlation to the Minnesota Academic Standards in Mathematics

Grade 2

Volume One

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NUMBER & OPERATION

Grade 2 Content Standards	*Sadlier Math*, Grade 2

Compare and represent whole numbers up to 1000 with an emphasis on place value and equality.

Grade 2 Content Standards	*Sadlier Math*, Grade 2
2.1.1.1 Read, write and represent whole numbers up to 1000. Representations may include numerals, addition, subtraction, multiplication, words, pictures, tally marks, number lines and manipulatives, such as bundles of sticks and base 10 blocks.	**Chapter 3: 3-1 & 3-2** • 3-1 Tens and Ones—pp. 111–114 (Use tens and ones to show numbers to 100; TE Develop Concepts: How Many Tens and Ones?) • 3-2 Expanded Form—pp. 115–118 (Write numbers to 100 using expanded form; TE Develop Concepts: Expanded Notation)
2.1.1.2 Use place value to describe whole numbers between 10 and 1000 in terms of hundreds, tens and ones. Know that 100 is 10 tens, and 1000 is 10 hundreds. *For example:* Writing 853 is a shorter way of writing 8 hundreds + 5 tens + 3 ones.	**Chapter 3: 3-2** • 3-2 Expanded Form—pp. 115–118 (Write numbers to 100 using expanded form; TE Develop Concepts: Expanded Notation)
2.1.1.3 Find 10 more or 10 less than a given three-digit number. Find 100 more or 100 less than a given three-digit number. *For example:* Find the number that is 10 less than 382 and the number that is 100 more than 382.	**Chapter 8: 8-1** • 8-1 Mental Math: Add 1, 10, or 100—pp. 341–344 (Use mental math to add 1, 10, or 100; TE Develop Concepts: Skip Counting by 10s and 100s) **Chapter 9: 9-1** • 9-1 Mental Math: Subtract 1, 10, or 100—pp. 383–386 (Use mental math to subtract 1, 10, or 100; TE Develop Concepts: Modeling 1, 10, and 100 Less)
2.1.1.4 Round numbers up to the nearest 10 and 100 and round numbers down to the nearest 10 and 100. *For example:* If there are 17 students in the class and granola bars come 10 to a box, you need to buy 20 bars (2 boxes) in order to have enough bars for everyone.	See Grade 3 **Chapter 1: 1-4 & 1-5** • 1-4 Round Numbers to the Nearest Ten—pp. 10–11 (Round numbers to the nearest ten using number lines or place-value concepts; TE Develop Concepts: Which Tens Number is Closer?) • 1-5 Round Numbers to the Nearest Hundred—pp. 12–13 (Round numbers to the nearest 100 using number lines or place-value concepts; TE Develop Concepts: Which Hundred is Closer?)
2.1.1.5 Compare and order whole numbers up to 1000.	**Chapter 3: 3-3 & 3-4** • 3-3 Compare Numbers—pp. 119–122 (Compare two numbers that are less than 100; TE Develop Concepts: Comparing Numbers) • 3-4 Order Numbers Within 100—pp. 125–128 (Order numbers within 100; TE Develop Concepts: What Is Counting Order?) See also Grade 3 (compare and order to 1000) **Chapter 1: 1-3** • 1-3 Compare and Order Numbers—pp. 6–7 (Compare and order 3-digit numbers using a number line and place value; TE Develop Concepts: Comparing and Ordering)

NUMBER & OPERATION

Grade 2 Content Standards	*Sadlier Math*, Grade 2

Demonstrate mastery of addition and subtraction basic facts; add and subtract one- and two-digit numbers in real-world and mathematical problems.

2.1.2.1 Use strategies to generate addition and subtraction facts including making tens, fact families, doubles plus or minus one, counting on, counting back, and the commutative and associative properties. Use the relationship between addition and subtraction to generate basic facts. *For example:* Use the associative property to make tens when adding $5 + 8 = (3 + 2) + 8 = 3 + (2 + 8) = 3 + 10 = 13.$	**Chapter 1: 1-1 through 1-6** • 1-1 Addition Concepts—pp. 3–6 (Use addition to find the unknown sum or addend in word problems; TE Develop Concepts: Joining Groups) • 1-2 Put Together—pp. 7–10 (Use addition to solve word problems about putting objects together; TE Develop Concepts: Using Addition) • 1-3 Related Addition Facts—pp. 11–14 (Add two numbers in any order; TE Develop Concepts: Related Facts) • 1-4 Count On to Add—pp. 15–18 (Count on from the greater addend to add two numbers; TE Develop Concepts: Counting On) • 1-5 Doubles and Near Doubles—pp. 19–22 (Use doubles facts to find the sums of near doubles; TE Develop Concepts: Doubles Facts) • 1-6 Make 10 to Add—pp. 23–26 (Make 10 to find the sum of two numbers; TE Develop Concepts: Exploring Making 10)
2.1.2.2 Demonstrate fluency with basic addition facts and related subtraction facts.	**Chapter 2: 2-1 through 2-9** • 2-1 Subtraction Concepts—pp. 53–56 (Use subtraction to take away or to find the missing part; TE Develop Concepts: What Is Subtraction?) • 2-2 Take Apart—pp. 57–60 (Take groups apart to subtract; TE Develop Concepts: Taking Groups Apart) • 2-3 Subtract to Compare—pp. 61–64 (Use subtraction to compare; TE Develop Concepts: Comparing Numbers) • 2-4 Count On to Subtract—pp. 65–68 (Count on to find the difference; TE Develop Concepts: Using a Line Diagram) • 2-5 Related Subtraction Facts—pp. 69–72 (Write two related subtraction facts; TE Develop Concepts: Relating Subtraction Facts) • 2-6 Relate Addition and Subtraction—pp. 73–76 (Write related addition and subtraction facts; TE Develop Concepts: Relating Addition and Subtraction) • 2-7 Fact Families—pp. 77–80 (Use mental strategies to add and subtract; Find fact families; TE Develop Concepts: Fact Families) • 2-8 Think Addition to Subtract—pp. 83–86 (Use addition facts to subtract; TE Develop Concepts: Using Related Addition Facts to Help Subtract) • 2-9 Use Addition to Check—pp. 87–90 (Use mental strategies to add and subtract; Use addition to check subtraction; TE Develop Concepts: Checking Subtraction)
2.1.2.3 Estimate sums and differences up to 100. *For example:* Know that 23 + 48 is about 70.	See Grade 3 **Chapter 2: 2-3** • 2-3 Estimate Sums—pp. 26–27 (Estimate sums to 1000 using rounding and front-end estimation; TE Develop Concepts: Compare Estimation Methods) **Chapter 3: 3-1** • 3-1 Estimate Differences—pp. 46–47 (Estimate differences by rounding and using front-end estimation; TE Develop Concepts: Compare Estimation Methods for Subtraction)

NUMBER & OPERATION

Grade 2 Content Standards	*Sadlier Math*, Grade 2
2.1.2.4 Use mental strategies and algorithms based on knowledge of place value and equality to add and subtract two-digit numbers. Strategies may include decomposition, expanded notation, and partial sums and differences. *For example:* Using decomposition, 78 + 42, can be thought of as: 78 + 2 + 20 + 20 = 80 + 20 + 20 = 100 + 20 = 120 and using expanded notation, 34 – 21 can be thought of as: 30 + 4 – 20 – 1 = 30 – 20 + 4 – 1 = 10 + 3 = 13.	*A Mental Math activity in the TE accompanies each lesson. **Chapter 4: 4-1 through 4-10** • 4-1 Use Models: Add Tens and Ones—pp. 145–148 (Use models of tens and ones to add without regrouping) • 4-2 Add Tens and Ones—pp. 149–152 (Use place-value charts to add without regrouping; TE Develop Concepts: Adding Tens and Ones) • 4-3 Regroup Ones as Tens—pp. 155–158 (Regroup ones to make a new ten; TE Develop Concepts: Regrouping Ones) • 4-4 Use Models: Two-Digit Addition with Regrouping—pp. 159–162 (Use models of tens and ones to add with regrouping; TE Develop Concepts: Model Addition with Regrouping) • 4-5 Two-Digit Addition with Regrouping—pp. 163–166 (Add two-digit numbers with regrouping; TE Develop Concepts: Two-Digit Addition with Regrouping) • 4-6 Rewrite Two-Digit Addition—pp. 167–170 (Rewrite two-digit addition problems; Add two-digit numbers with regrouping; TE Develop Concepts: Different Ways to Write the Same Problem) • 4-7 Break Apart to Add—pp. 171–174 (Break apart numbers to add; TE Develop Concepts: Breaking Apart Tens and Ones) • 4-8 Three Addends—pp. 175–178 (Add three addends; TE Develop Concepts: Add Three Numbers) • 4-9 Four Addends—pp. 179–182 (Add four addends; TE Develop Concepts: Adding Four Numbers) • 4-10 Problem Solving: Read and Understand—pp. 183–188 (Read the problem carefully to understand the question; Decide if information is helpful or not; TE Develop Concepts: Read and Understand)
2.1.2.5 Solve real-world and mathematical addition and subtraction problems involving whole numbers with up to 2 digits.	**Chapter 5: 5-1 through 5-9** • 5-1 Use Models: Subtract Tens and Ones—pp. 195–198 (Use models to subtract two-digit numbers; TE Develop Concepts: Subtracting Tens and Ones with Models) • 5-2 Subtract Tens and Ones—pp. 199–202 (Subtract two-digit numbers; TE Develop Concepts: Subtracting Tens and Ones) • 5-3 Regroup Tens as Ones—pp. 205–208 (Use models to regroup 1 ten as 10 ones; TE Develop Concepts: Regrouping Tens) • 5-4 Use Models: Two-Digit Subtraction with Regrouping—pp. 209–212 (Use models to subtract two-digit numbers with regrouping; TE Develop Concepts: Exploring Subtraction with Regrouping) • 5-5 Two-Digit Subtraction with Regrouping—pp. 213–216 (Subtract two-digit numbers with regrouping; Subtract one-digit numbers from two-digit numbers with regrouping; TE Develop Concepts: Subtraction with Regrouping) • 5-6 Rewrite Two-Digit Subtraction—pp. 217–220 (Rewrite two-digit subtraction problems from horizontal to vertical form and subtract; TE Develop Concepts: Rewriting Two-Digit Subtraction) • 5-7 Break Apart to Subtract—pp. 221–224 (Break apart numbers to subtract; TE Develop Concepts: Regrouping Tens) • 5-8 Add to Check—pp. 225–228 (Use addition to check subtraction; TE Develop Concepts: Fact Families) • 5-9 Problem Solving: Write and Solve an Equation—pp. 229–234 (Write and solve an equation for a given problem-solving situation) **Chapter 8: 8-1** • 8-1 Mental Math: Add 1, 10, or 100—pp. 341–344 (Use mental math to add 1, 10, or 100) **Chapter 9: 9-1** • 9-1 Mental Math: Subtract 1, 10, or 100—pp. 383–386 (Use mental math to subtract 1, 10, or 100)

NUMBER & OPERATION

Grade 2 Content Standards	*Sadlier Math*, Grade 2
2.1.2.6 Use addition and subtraction to create and obtain information from tables, bar graphs and tally charts.	**Chapter 7: 7-8** • 7-8 Problem Solving: Use a Table—pp. 329–334 (Solve problems by using a table; TE Develop Concepts: Compare and Order Numbers) **Chapter 11: 11-1, 11-3 & 11-5** • 11-1 Read Line Plots—pp. 459–462 (Read and interpret line plots; TE Develop Concepts: Collecting and Displaying Data) • 11-3 Read Picture Graphs—pp. 467–470 (Read and interpret picture graphs; TE Develop Concepts: Displaying Data) • 11-5 Read Bar Graphs—pp. 477–480 (Read and interpret bar graphs; TE Develop Concepts: Exploring Bar Graphs)

ALGEBRA

Grade 2 Content Standards	*Sadlier Math*, Grade 2

Recognize, create, describe, and use patterns and rules to solve real-world and mathematical problems.

Grade 2 Content Standards	*Sadlier Math*, Grade 2
2.2.1.1 Identify, create and describe simple number patterns involving repeated addition or subtraction, skip counting and arrays of objects such as counters or tiles. Use patterns to solve problems in various contexts. *For example:* Skip count by 5s beginning at 3 to create the pattern 3, 8, 13, 18, … . *Another example:* Collecting 7 empty milk cartons each day for 5 days will generate the pattern 7, 14, 21, 28, 35, resulting in a total of 35 milk cartons.	**Chapter 1: 1-10** • 1-10 Patterns in Addition—pp. 43–46 (Complete and explain patterns found in addition sentences; TE Develop Concepts: Look for Patterns) **Chapter 3: 3-5** • 3-5 Counting Patterns by 2s, 5s, and 10s—pp. 129–132 (Count by 2s, 5s, and 10s; TE Develop Concepts: Using Patterns to Count)

Use number sentences involving addition, subtraction and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.

Grade 2 Content Standards	*Sadlier Math*, Grade 2
2.2.2.1 Understand how to interpret number sentences involving addition, subtraction and unknowns represented by letters. Use objects and number lines and create real-world situations to represent number sentences. <center>*continued*</center>	**Chapter 1: 1-9** • 1-9 Solve for Unknown Addends—pp. 39–42 (Use drawings and equations to find an unknown addend; TE Develop Concepts: Explore Using a Bar Model) **Chapter 2: 2-10** • 2-10 Solve for Unknowns—pp. 91–94 (Use drawings and equations to find the unknown; TE Develop Concepts: Bar Models)

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Grade 2 Content Standards	*Sadlier Math*, Grade 2
For example: One way to represent $n + 16 = 19$ is by comparing a stack of 16 connecting cubes to a stack of 19 connecting cubes; $24 = a + b$ can be represented by a situation involving a birthday party attended by a total of 24 boys and girls.	
2.2.2.2 Use number sentences involving addition, subtraction, and unknowns to represent given problem situations. Use number sense and properties of addition and subtraction to find values for the unknowns that make the number sentences true. *For example:* How many more players are needed if a soccer team requires 11 players and so far only 6 players have arrived? This situation can be represented by the number sentence $11 - 6 = p$ or by the number sentence $6 + p = 11$.	**Chapter 1: 1-9** • 1-9 Solve for Unknown Addends—pp. 39–42 (Use drawings and equations to find an unknown addend; TE Develop Concepts: Explore Using a Bar Model) **Chapter 2: 2-10** • 2-10 Solve for Unknowns—pp. 91–94 (Use drawings and equations to find the unknown; TE Develop Concepts: Bar Models) **Chapter 5: 5-9** • 5-9 Problem Solving: Write and Solve an Equation—pp. 229–234 (Write and solve an equation for a given problem-solving situation; TE Develop Concepts: Writing Equations to Represent Unknowns) **Chapter 8: 8-8** • 8-8 Use Properties to Add—pp. 373–376 (Use strategies based on properties of operations to add three-digit numbers; TE Develop Concepts: Expanded Form) *In addition to lessons cited above, using number sentences to solve addition and subtraction problems is modeled throughout the chapters on addition and subtraction.

GEOMETRY & MEASUREMENT

Grade 2 Content Standards	*Sadlier Math*, Grade 2
Identify, describe and compare basic shapes according to their geometric attributes.	
2.3.1.1 Describe, compare, and classify two- and three-dimensional figures according to number and shape of faces, and the number of sides, edges and vertices (corners).	**Chapter 13: 13-1 through 13-4** • 13-1 Identify Two-Dimensional Shapes—pp. 555–558 (Identify triangles, quadrilaterals, pentagons, and hexagons; TE Develop Concepts: Exploring Polygons) • 13-2 Draw Two-Dimensional Shapes—pp. 559–562 (Draw triangles, quadrilaterals, pentagons, and hexagons; TE Develop Concepts: Creating Polygons) • 13-3 Identify Three-Dimensional Shapes—pp. 565–568 (Identify cones, cubes, cylinders, pyramids, rectangular prisms, and spheres; TE Develop Concepts: Three-Dimensional Figures) • 13-4 Faces, Edges, Vertices—pp. 569–572 (Identify the faces, edges, and vertices of three-dimensional figures; Draw a cube; TE Develop Concepts: Faces, Edges, and Vertices)

GEOMETRY & MEASUREMENT

Grade 2 Content Standards	*Sadlier Math*, Grade 2
2.3.1.2 Identify and name basic two- and three-dimensional shapes, such as squares, circles, triangles, rectangles, trapezoids, hexagons, cubes, rectangular prisms, cones, cylinders and spheres. *For example:* Use a drawing program to show several ways that a rectangle can be decomposed into exactly three triangles.	**Chapter 13: 13-1 through 13-3** • 13-1 Identify Two-Dimensional Shapes—pp. 555–558 (Identify triangles, quadrilaterals, pentagons, and hexagons; TE Develop Concepts: Exploring Polygons) • 13-2 Draw Two-Dimensional Shapes—pp. 559–562 (Draw triangles, quadrilaterals, pentagons, and hexagons; TE Develop Concepts: Creating Polygons) • 13-3 Identify Three-Dimensional Shapes—pp. 565–568 (Identify cones, cubes, cylinders, pyramids, rectangular prisms, and spheres; TE Develop Concepts: Three-Dimensional Figures)

Understand length as a measurable attribute; use tools to measure length.

Grade 2 Content Standards	*Sadlier Math*, Grade 2
2.3.2.1 Understand the relationship between the size of the unit of measurement and the number of units needed to measure the length of an object. *For example:* It will take more paper clips than whiteboard markers to measure the length of a table.	**Chapter 6: 6-1 through 6-8** • 6-1 Inches—pp. 241–244 (Estimate and measure length to the nearest inch; TE Develop Concepts: Estimate and Measure Objects) • 6-2 Feet and Yards—pp. 245–248 (Estimate length using feet and yards; Measure length to the nearest foot or yard; TE Develop Concepts: Exploring Feet and Yards) • 6-3 Customary: Choose Tools and Units of Measure—pp. 249–252 (Choose the best tool to measure length; Choose the best customary unit to measure length; TE Develop Concepts: Choosing Tools and Units) • 6-4 Centimeters—pp. 253–256 (Estimate and measure length to the nearest centimeter; TE Develop Concepts: Exploring Centimeters) • 6-5 Meters—pp. 257–260 (Estimate and measure length to the nearest meter; TE Develop Concepts: Using Meters) • 6-6 Metric: Choose Tools and Units of Measure—pp. 261–264 (Choose the best tool to measure length; Choose the best metric unit to measure length; TE Develop Concepts: Choosing Measuring Tools) • 6-7 Measure Using Different Units—pp. 267–270 (Measure length using different units; TE Develop Concepts: Using Different Units) • 6-8 Compare Lengths—pp. 271–274 (Measure to find how much longer one object is than another; TE Develop Concepts: Comparing Lengths)
2.3.2.2 Demonstrate an understanding of the relationship between length and the numbers on a ruler by using a ruler to measure lengths to the nearest centimeter or inch. *For example:* Draw a line segment that is 3 inches long.	**Chapter 6: 6-1, 6-3 & 6-4** • 6-1 Inches—pp. 241–244 (Estimate and measure length to the nearest inch; TE Develop Concepts: Estimate and Measure Objects) • 6-3 Customary: Choose Tools and Units of Measure—pp. 249–252 (Choose the best tool to measure length; Choose the best customary unit to measure length; TE Develop Concepts: Choosing Tools and Units) • 6-4 Centimeters—pp. 253–256 (Estimate and measure length to the nearest centimeter; TE Develop Concepts: Exploring Centimeters)

GEOMETRY & MEASUREMENT

Grade 2 Content Standards	*Sadlier Math*, Grade 2

Use time and money in real-world and mathematical situations.

2.3.3.1 Tell time to the quarter-hour and distinguish between a.m. and p.m.	**Chapter 12: 12-9 through 12-12** • 12-9 Hour and Half Hour—pp. 531–534 (Tell and write time to the hour and half hour; TE Develop Concepts: Exploring Hours and Half Hours) • 12-10 Five Minutes—pp. 535–538 (Tell and write time to the nearest five minutes; TE Develop Concepts: Explore Telling Time) • 12-11 a.m. and p.m.—pp. 539–542 (Tell and write time to the nearest five minutes using am and pm; TE Develop Concepts: Exploring Different Times of Day) • 12-12 Problem Solving: Work Backward—pp. 543–548 (Work backward for a given problem-solving situation involving time, a.m., p.m.; TE Develop Concepts: Working Backward) See also Grade 3 (tell time to quarter-hour) **Chapter 13: 13-1** • Teaching Tips and Practice: Use expressions for times that students are used to hearing; for example, quarter of seven or quarter to seven… • 13-1 Tell Time to the Minute—pp. 276–277 (Read and write time to the minute; Practice: #10 a quarter after nine, #16 a quarter after one; Homework: #3 a quarter to three; TE Use the Student Pages: say the time in ways that are used in your area; for example, some people say "quarter to eight" while others says "quarter of eight; TE Develop Concepts: Recall Telling Time: quarter past six, six fifteen, quarter after six) • 13-2 Measure Elapsed Time—pp. 278–279 (TE Mental Math: quarter past 2, quarter of 4)
2.3.2.2 Identify pennies, nickels, dimes and quarters. Find the value of a group of coins and determine combinations of coins that equal a given amount. *For example:* 50 cents can be made up of 2 quarters, or 4 dimes and 2 nickels, or many other combinations.	**Chapter 12: 12-1 through 12-8** • 12-1 Pennies, Nickels, and Dimes—pp. 497–500 (Find the value of a group of coins consisting of pennies, nickels, and dimes; TE Develop Concepts: Exploring Coins) • 12-2 Quarters—pp. 501–504 (Find the value of a group of coins consisting of pennies, nickels, dimes, and quarters; TE Develop Concepts: Exploring Quarters) • 12-3 Equal Amounts—pp. 505–508 (Show amounts of money in more than one way using pennies, nickels, dimes, and quarters; TE Develop Concepts: Counting Coins) • 12-4 Compare Money—pp. 509–512 (Compare an amount of money to the cost of an item; TE Develop Concepts: Explore Comparing Money) • 12-5 Make Change—pp. 513–516 (Find the amount of change needed, given the price and amount paid; TE Develop Concepts: Finding the Difference in Amounts) • 12-6 Add and Subtract Money—pp. 517–520 (Add and subtract amounts of money; TE Develop Concepts: Reviewing Addition and Subtraction) Related content **Chapter 12: 12-7 & 12-8** • 12-7 One Dollar—pp. 521–524 (Count and find amounts of coins equal to a dollar; TE Develop Concepts: Exploring Dollars) • 12-8 Paper Money—pp. 525–528 (Find the value of a group of bills; TE Develop Concepts: Counting Tens)

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