Content Area: Mathematics
Standard: 4. Shape, Dimension, and Geometric Relationships

Prepared Graduates:

- Understand quantity through estimation, precision, order of magnitude, and comparison. The reasonableness of answers relies on the ability to judge appropriateness, compare, estimate, and analyze error

Grade Level Expectation: Second Grade

Concepts and skills students master:

2. Some attributes of objects are measurable and can be quantified using different tools

Evidence Outcomes	21st Century Skills and Readiness Competencies
Students can: a. Measure and estimate lengths in standard units. (CCSS: 2.MD) i. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. (CCSS: 2.MD.1) ii. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. (CCSS: 2.MD.2) iii. Estimate lengths using units of inches, feet, centimeters, and meters. (CCSS: 2.MD.3) iv. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. (CCSS: 2.MD.4) b. Relate addition and subtraction to length. (CCSS: 2.MD) i. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units[1] and equations with a symbol for the unknown number to represent the problem. (CCSS: 2.MD.5) ii. Represent whole numbers as lengths from 0 on a number line[2] diagram and represent whole-number sums and differences within 100 on a number line diagram. (CCSS: 2.MD.6) c. Solve problems time and money. (CCSS: 2.MD) i. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. (CCSS: 2.MD.7) ii. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and symbols appropriately.[3] (CCSS: 2.MD.8)	**Inquiry Questions:** 1. What are the different things we can measure? 2. How do we decide which tool to use to measure something? 3. What would happen if everyone created and used their own rulers? **Relevance and Application:** 1. Measurement is used to understand and describe the world including sports, construction, and explaining the environment. **Nature of Mathematics:** 1. Mathematicians use measurable attributes to describe countless objects with only a few words. 2. Mathematicians use appropriate tools strategically. (MP) 3. Mathematicians attend to precision. (MP)

[1] e.g., by using drawings (such as drawings of rulers). (CCSS: 2.MD.5)
[2] with equally spaced points corresponding to the numbers 0, 1, 2, ... (CCSS: 2.MD.6)
[3] Example: If you have 2 dimes and 3 pennies, how many cents do you have? (CCSS: 2.MD.6)

Content Area: Mathematics
Standard: 1. Number Sense, Properties, and Operations

Prepared Graduates:

- Understand the structure and properties of our number system. At their most basic level numbers are abstract symbols that represent real-world quantities

Grade Level Expectation: Second Grade

Concepts and skills students master:

1. The whole number system describes place value relationships through 1,000 and forms the foundation for efficient algorithms

Evidence Outcomes	**21st Century Skills and Readiness Competencies**
Students can: a. Use place value to read, write, count, compare, and represent numbers. (CCSS: 2.NBT) i. Represent the digits of a three-digit number as hundreds, tens, and ones.[1] (CCSS: 2.NBT.1) ii. Count within 1000. (CCSS: 2.NBT.2) iii. Skip-count by 5s, 10s, and 100s. (CCSS: 2.NBT.2) iv. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. (CCSS: 2.NBT.3) v. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons. (CCSS: 2.NBT.4) b. Use place value understanding and properties of operations to add and subtract. (CCSS: 2.NBT) i. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (CCSS: 2.NBT.5) ii. Add up to four two-digit numbers using strategies based on place value and properties of operations. (CCSS: 2.NBT.6) iii. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method.[2] (CCSS: 2.NBT.7) iv. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. (CCSS: 2.NBT.8) v. Explain why addition and subtraction strategies work, using place value and the properties of operations. (CCSS: 2.NBT.9)	**Inquiry Questions:** 1. How big is 1,000? 2. How does the position of a digit in a number affect its value? **Relevance and Application:** 1. The ability to read and write numbers allows communication about quantities such as the cost of items, number of students in a school, or number of people in a theatre. 2. Place value allows people to represent large quantities. For example, 725 can be thought of as 700 + 20 + 5. **Nature of Mathematics:** 1. Mathematicians use place value to represent many numbers with only ten digits. 2. Mathematicians construct viable arguments and critique the reasoning of others. (MP) 3. Mathematicians look for and make use of structure. (MP) 4. Mathematicians look for and express regularity in repeated reasoning. (MP)

[1] e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: (CCSS: 2.NBT.1)
100 can be thought of as a bundle of ten tens — called a "hundred." (CCSS: 2.NBT.1a)
The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). (CCSS: 2.NBT.1b)
[2] Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. (CCSS: 2.NBT.7)