

Content Area: Mathematics
Standard: 3. Data Analysis, Statistics, and Probability

Prepared Graduates:

- Solve problems and make decisions that depend on understanding, explaining, and quantifying the variability in data

Grade Level Expectation: Second Grade

Concepts and skills students master:

1. Visual displays of data can be constructed in a variety of formats to solve problems

Evidence Outcomes

Students can:

- a. **Represent and interpret data. (CCSS: 2.MD)**
 - i. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units. (CCSS: 2.MD.9)
 - ii. **Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. (CCSS: 2.MD.10)**
 - iii. Solve simple put together, take-apart, and compare problems using information presented in picture and bar graphs. (CCSS: 2.MD.10)

21st Century Skills and Readiness Competencies

Inquiry Questions:

- 1. What are the ways data can be displayed?
- 2. What can data tell you about the people you survey?
- 3. What makes a good survey question?

Relevance and Application:

- 1. People use data to describe the world and answer questions such as how many classmates are buying lunch today, how much it rained yesterday, or in which month are the most birthdays.

Nature of Mathematics:

- 1. Mathematics can be displayed as symbols.
- 2. Mathematicians make sense of problems and persevere in solving them. (MP)
- 3. **Mathematicians model with mathematics. (MP)**
- 4. Mathematicians attend to precision. (MP)

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

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)

21st Century Skills and Readiness Competencies

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)

Standard: 1. Number Sense, Properties, and Operations
Second Grade

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)