Arizona Mathematics Standards– 2nd Grade Standards Placemat
Grade level content emphasis indicated by: 🔴 Major Cluster; 🔺 Supporting Cluster

1. ***Extend place value understanding of whole number relationships and place value, including grouping in hundreds, tens and ones.***
   Students extend their understanding of place value using the base-ten system. This includes ideas of counting by ones, fives, tens, and hundreds as well as understanding number relationships involving these units, including comparing. Students understand multi-digit numbers through 1000 written in base-ten notation, recognizing that the digits in each place represent amounts of hundreds, tens, or ones.

2. ***Develop competency of strategies for addition and subtraction.***
   Students work with whole numbers between 10 and 100 in terms of tens and ones. Through activities that build number sense and place value, they understand the order of the counting sequence, compare whole numbers through 100, and model addition and subtraction situations. Students develop, discuss, and use efficient, accurate, and flexible strategies to add within 100 and subtract multiples of 10.

3. ***Develop understanding of standard units of measure.***
   Students develop an understanding of the meaning and processes of measurement, including iteration (finding the length of an object with repeated equal-sized units) and for indirect measurement (comparing the length of two objects using a third object).

Operations and Algebraic Thinking
🔴 **2.OA.A Represent and solve problems involving addition and subtraction.**

2.OA.A.1: Use addition and subtraction within 100 to solve one and two-step word problems. Represent a word problem as an equation with a symbol for the unknown. *See Table 1*

🔴 **2.OA.B Add and subtract within 20.**

2.OA.B.2: Fluently add and subtract within 20. By the end of Grade 2, know from memory all sums of two one-digit numbers.

🔺 **2.OA.C Work with equal groups of objects to gain foundations for multiplication.**

2.OA.C.3: Determine whether a group of objects (up to 20) has an odd or even number of members (e.g., by pairing objects or counting them by 2's).

2.OA.C.4: Use addition to find the total number of objects arranged in rectangular arrays (with up to 5 rows and 5 columns). Write an equation to express the total as a sum of equal addends.

Number and Operations in Base Ten
🔴 **2.NBT.A Understand place value.**

2.NBT.A.1: Understand that the three digits of a three-digit number represent groups of hundreds, tens, and ones (e.g., 706 equals 7 hundreds, 0 tens, and 6 ones and also equals 70 tens and 6 ones).

Understand the following as special cases:
   a. 100 can be thought of as a group of ten tens—called a "hundred."
   b. 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).

2.NBT.A.2: Count within 1000; skip count by 5's, 10's and 100's.

2.NBT.A.3: Read and write numbers up to 1000 using base-ten numerals, number names, and expanded form.

2.NBT.A.4: Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.

🔴 **2.NBT.B Use place value understanding and properties of operations to add and subtract.**

2.NBT.B.5: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.B.6: Add up to three two-digit numbers using strategies based on place value and properties of operations.

2.NBT.B.7: Demonstrate understanding of addition and subtraction within 1000, connecting objects or drawings to strategies based on place value (including multiples of 10), properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written form. *See Table 1.*

2.NBT.B.8: Mentally add 10 or 100 to a given number in the range of 100 and 900, and mentally subtract 10 or 100 from a given number in the range of 100 and 900.

2.NBT.B.9: Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects.)

Measurement and Data
🔴 **2.MD.A Measure and estimate lengths in standard units.**

2.MD.A.1: Measure the length of an object by selecting and using appropriate tools (e.g., ruler, meter stick, yardstick, measuring tape).

2.MD.A.2: Measure the length of an object twice, using different standard length units for the two measurements; describe how the two measurements relate to the size of the unit chosen. Understand that depending on the size of the unit, the number of units for the same length varies.

2.MD.A.3: Estimate lengths using units of inches, feet, centimeters, and meters.

2.MD.A.4: Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

🔴 **2.MD.B Relate addition and subtraction to length.**

2.MD.B.5: Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same unit. *See Table 1.*

2.MD.B.6: Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, …, and represent whole-number sums and differences within 100 on a number line diagram.

🔺 **2.MD.C Work with time and money.**

2.MD.C.7: Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

2.MD.C.8: Solve word problems involving collections of money, including dollar bills, quarters, dimes, nickels, and pennies. Record the total using $ and ¢ appropriately. *See Table 1.*

🔺 **2.MD.D Represent and interpret data.**

2.MD.D.9: 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.

2.MD.D.10: Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in the graph. *See Table 1.*

Geometry
🔺 **2.G.A Reason with shapes and their attributes.**

2.G.A.1: Identify and describe specified attributes of two-dimensional and three-dimensional shapes, according to the number and shape of faces, number of angles, and the number of sides and/or vertices. Draw two-dimensional shapes based on the specified attributes (e.g., triangles, quadrilaterals, pentagons, and hexagons).

2.G.A.2: Partition a rectangle into rows and columns of same-size rectangles and count to find the total number of rectangles.

2.G.A.3: Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, fourths, half of, third of, fourth of, and describe the whole as two halves, three thirds, or four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Mathematical Practices
The Standards for Mathematical Practice complement the content standards so that students increasingly engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle, and high school years.

1. **Make sense of problems and persevere in solving them.**
2. **Reason abstractly and quantitatively.**
3. **Construct viable arguments and critique the reasoning of others.**
4. **Model with mathematics.**
5. **Use appropriate tools strategically.**
6. **Attend to precision.**
7. **Look for and make use of structure.**
8. **Look for and express regularity in repeated reasoning.**

Arizona is suggesting instructional time encompass a range of at least 65%-75% for Major Clusters and a range of 25%-35% for Supporting Cluster instruction.