Grade 2 - Unit B - Place Value and Adding/Subtracting within 100

Unit Focus

Throughout Unit B, students build upon their operational sense with number relationships to 20 developed in Unit A as they explore base ten concepts and models within 1,000. Students focus on the first three place value units: ones, tens, and hundreds.

Students will decompose or break numbers into their component parts based on place value in order to:

- use models for grouping including tallying with bundled objects, discrete counters, base ten area pieces, and the number line (open and close)
- employ splitting strategies
- solve word problems involving addition and subtraction within 100 with unknowns in all positions
- recognize subtraction as finding the difference between 2 points on a number line.

Stage 1: Desired Results - Key Understandings

Standard(s)

Standards

- Common Core
  - *Mathematics: 2*
    - Represent and solve problems involving addition and subtraction.
    - Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. *(CCSS.MATH.CONTENT.2.OA.A.1)*
    - Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: *(CCSS.MATH.CONTENT.2.NBT.A.1)*
    - 100 can be thought of as a bundle of ten tens —called a hundred. *(CCSS.MATH.CONTENT.2.NBT.A.1A)*
    - Understand place value.
    - Count within 1000; skip-count by 5s, 10s, and 100s. *(CCSS.MATH.CONTENT.2.NBT.A.2)*
    - Use place value understanding and properties of operations to add and subtract.
    - Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. *(CCSS.MATH.CONTENT.2.NBT.B.5)*
    - Add up to four two-digit numbers using strategies based on place value and properties of operations. *(CCSS.MATH.CONTENT.2.NBT.B.6)*

Transfer

Students will be able to independently use their learning to...

T1 Initiate a plan using a variety of methods/strategies appropriately, execute it, and evaluate the reasonableness and accuracy of the solution.

T2 Apply models to solve problems.

Meaning

Understanding(s)	Essential Question(s)
Students will understand that... **U1** Mathematicians work to make sense of the problem before trying to solve it. **U2** Mathematicians create or use models to generalize, represent, and solve problems.	*Students will keep considering...* **Q1** What model best represents this problem? **Q2** What makes an effective problem solver?

Acquisition of Knowledge and Skill

Knowledge	Skill(s)
Students will know... **K1** Our number system is organized in groups of ten **K2** Numbers can be decomposed in various ways	*Students will be skilled at...* **S1** Adding numbers by regrouping sets of tens and ones **S2** Using models such as the open number line and base ten models are tools for solving addition and subtraction problems.

Stage 1: Desired Results - Key Understandings

▪ Explain why addition and subtraction strategies work, using place value and the properties of operations. *(CCSS.MATH.CONTENT.2.NBT.B.9)* ▪ Relate addition and subtraction to length. ▪ 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. *(CCSS.MATH.CONTENT.2.MD.B.6)* ▪ Work with time and money. ▪ Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. *(CCSS.MATH.CONTENT.2.MD.C.7)* ▪ Mathematical Practices ▪ Make sense of problems and persevere in solving them. *(CCSS.MATH.MP.1)* ▪ Model with mathematics. *(CCSS.MATH.MP.4)* **Madison Public Schools Profile of a Graduate** o Analyzing: Examining information/data/evidence from multiple sources to identify possible underlying assumptions, patterns, and relationships in order to make inferences. *(POG.1.2)* o Product Creation: Effectively use a medium to communicate important information. *(POG.3.2)*	**K3** Problems can be approached in different ways **K4** Subtraction is closely related to addition and may be thought of finding the difference between two points on a number line. **K5** Multiple strategies for approaching two-digit addition and subtraction problems. **K6** Strategies for solving word problems with the start, change or result unknown. **K7** Vocabulary: estimation, difference, sum, compare, place value, greater than, equation, less than, regroup	**S3** Decomposing numbers by place value **S4** Thinking creatively and informally to strategize when problem solving **S5** Writing numbers in standard and expanded notation. **S6** Adding and subtracting two-digit numbers with models. **S7** Counting and organizing objects into readily identifiable groupings of 10 objects. **S8** Using models for representing 2- and 3-digit numbers with manipulatives **S9** "Skip-jumping" as a strategy by moving in both directions on the number line by increments of 1, 5, and 10. **S10** Identifying numbers based on their component parts