Grade 2 - Unit D - How ... is 1000?

Unit Focus

Throughout the course of the next 4-5 weeks, students develop a deeper understanding of place value of numbers to 1,000. This will build upon concepts and models students refined for adding and subtracting within 100 as was introduced in Unit B.

Students will compose and decompose numbers based on place value using multiple models and representations including sticks, cubes, paper clips and coins in order to understand:

- sets of 10 and 100 as single entities (unitizing);
- the position of any individual digit determines the size of the group that digit is counting;
- multi-digit numbers are formed by following the same counting pattern present in single digit counting;
- any number can be decomposed based on place value groupings in multiple ways.

Stage 1: Desired Results - Key Understandings

Standard(s)

Standards
- Common Core
- *Mathematics: 2*
- 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)*
- 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.MATH.CONTENT.2.NBT.A.1B)*
- Understand place value.
- Count within 1000; skip-count by 5s, 10s, and 100s. *(CCSS.MATH.CONTENT.2.NBT.A.2)*
- Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. *(CCSS.MATH.CONTENT.2.NBT.A.3)*
- 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.MATH.CONTENT.2.NBT.A.4)*
- Use place value understanding and properties of operations to add and subtract.

Transfer

Students will be able to independently use their learning to...
T1 Apply models to solve problems.
T2 Identify and generalize patterns and structure in numbers, expressions, data and objects.

Meaning

Understanding(s)

Students will understand that...
U1 The placement of a digit within a given number determines the value, or the unit that the digit represents.
U2 Mathematicians create or use models to generalize, represent, and solve problems.
U3 Mathematicians see patterns to make generalizations about structures and relationships.

Essential Question(s)

Students will keep considering...
Q1 What model best represents this problem?
Q2 What is the significance of this pattern?

Acquisition of Knowledge and Skill

Knowledge

Students will know...
K1 A set of 10 or 100 can be thought of as a single entity

Skill(s)

Students will be skilled at...
S1 Counting bundles of 10 and 100 using a variety of manipulatives

Stage 1: Desired Results - Key Understandings

- 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)*
- Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. *(CCSS.MATH.CONTENT.2.NBT.B.8)*
- 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)*
- Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have? *(CCSS.MATH.CONTENT.2.MD.C.8)*
- Mathematical Practices
- Model with mathematics. *(CCSS.MATH.MP.4)*
- Look for and make use of structure. *(CCSS.MATH.MP.7)*

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)*

K2 Numbers can be decomposed based on place value groupings in multiple ways
K3 Strategies and models for number combinations to 1000
K4 Names and values of coins
K5 Vocabulary: thousand, dime, nickel, penny, quarter, cent, dollar, tens, hundreds

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S2 Adding and subtracting by 10 with numbers 0 to 200
S3 Combining coins with a total value of a dollar or less
S4 Counting forward and backward by 10 and 100 on and off decade numbers
S5 Adding and subtracting multiples of 10 or 100, both on and off the decade
S6 Combining bills with a total value of several dollars