Grade 2 Place Value Conceptual Lessons/Unit Outline

SUGGESTED TIME FRAME: 4 Weeks

Time	Lesson Title	Knowledge Type, Claims, & Math Practices	Materials	Lesson Overview
1 day	**Hook Lesson: The Piggy Bank**	**KT: RK** **Claim: 3, 4** **MP: 1, 3, 4, 6**	• Clear coin bank about one-third to one-half filled with pennies or a color picture of one from below • A total of between 200 and 900 pennies • 100 pennies (plastic or real) per group of four students • Sticky note or small scratch paper - 1 per student	In this hook lesson, students will estimate the number of pennies in a clear coin bank and revise the estimate based upon some information. This lesson allows teachers to get an idea of students' number sense and also begins the idea of numbers greater than 120.
30-40 minutes	**Counting and Patterns**	**KT: P, C** **Claim: 1** **MP: 6, 7**	• 1 pair of scissors to cut a window in the slider • Base 10 blocks for students to model while counting ○ 9 ones, 9 tens and 9 hundreds per student	Students will count by ones, tens and hundreds from 1-9, 10-90, and 100-900 and study patterns with the digits. Students will practice counting on from a given number by tens or hundreds.

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20-30 minutes	**What is in a Cube?**	**KT: C Claim: 1, 3 MP: 3, 7**	• Base 10 blocks ○ 10 ones, 10 tens, 10 hundreds, and1 thousand per student or pair	Students will understand the base 10 place value system by exploring base 10 blocks. Students will be able to articulate: 10 ones makes a 10, 10 tens make a hundred, and 10 hundreds make a thousand.
20-30 minutes	**Race to 200**	**KT: C Claim: 1 MP: 1, 3, 7**	• Base 10 blocks ○ 2 hundreds, 20 tens and 20 ones per pair • 2 dice per pair	Students will understand and practice regrouping and trading ones, tens, and hundreds. Students will roll two dice and represent the sum using the fewest base 10 blocks possible. Students will continue rolling and adding onto their previous amount, yelling "trade" every time they have ten ones or ten tens.
20-30 minutes	**Race for a Cube**	**KT: C Claim: 1 MP: 1, 3, 7**	• Base 10 blocks • 20 tens, 20 hundreds, and 1 cube • 2 deca-dice per pair (10-sided dice numbered in multiples of 10 (0-90))	Students will understand "trading" or exchanging tens for hundreds and hundreds for thousands as a basis for the place value system.

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30-45 minutes	**Counting and Place Value**	**KT: P, C Claim: 1 MP: 2, 5, 7**	• Base 10 blocks for students to model while counting ○ 10 ones, 10 tens and 10 hundreds per student	Students will be able to count by ones, twos, fives, tens and hundreds both orally and using base 10 blocks to represent each number. Students will be introduced to and use the place value chart to record the number that matches the words and base 10 blocks. Students will study patterns of the final digit when counting by 2's to understand even and odd numbers.
1-2 days	**Building Three-Digit Numbers**	**KT: C Claim: 1 MP: 2, 3, 6**	• Base 10 blocks - 9 hundreds, 9 tens and 9 ones per student • Place value discs - 9 hundreds, 9 tens and 9 ones - per student • Place value cards - 1-9, 10-90, and 100-900 • Clear sheet protectors – 1 per student • Dry erase markers – 1 per student	Students will build an understanding of place value by using and connecting various tools and equivalent recording methods: base 10 blocks, place value discs (to which they will transition), number bonds, expanded notation, place value notation and place value cards.

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2-3 days	**Practice Reading and Writing Numbers to 1,000**	**KT: P Claim: 1**		*Teachers find or create*

2-3 days	**How Many Ways to 43?**	**KT: RK
		Claim: 1, 2, 3
		MP: 1, 3, 7, 8**
			• Base 10 blocks
			  ○ Approximately 40 ones, 30 tens and 9 hundreds per pair
			  ○ Many students will not continue to need as many blocks and they can share with other students
				Students will use base 10 blocks to find all the ways to represent a given 2-digit and 3-digit numbers, decomposing the number in different numbers of tens and ones. Students will understand that 43 can be 4 tens and 3 ones or 3 tens and 13 ones, etc. Students will study patterns with 2-digit and 3-digit number composition to understand expanded notation, equivalent expressions as well as understand how many different ways they can represent numbers using hundreds, tens and ones.

1 day	**The Piggy Bank Revisited**	**KT: C, RK Claim: 1, 2, 3 MP: 1, 2, 3, 4, 5**	• Clear coin bank about one-third to one-half filled with pennies or a color picture of one from introduction lesson • Field/Space about 20 meters in length • String or chalk to mark 0	Students will revisit the Piggy Bank to discuss and use efficient ways to count. Students will get a sense for how big numbers are by looking at the length of numbers of pennies laid side by side, with numbers between 0 and 1,000.

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			and 10 • Number Cards for Each Team (see pages that follow) • Colored Pencils • Meter stick for teacher to use (or other object to approximate distances up to 20 meters) • Optional: Blank paper for Piggy Bank Design	
1 day	**Place Value Equivalent Expression Match**	**TK: P, C Claim: 1, 3 MP: 2, 3, 7**	• Equivalent Expressions Sort and Match Cards – 20 cards per team. On card stock or colored paper that makes the print not visible when face down	Students will recognize and write equivalent forms of numbers to 1,000 using standard form, expanded form, and words, and recognize equivalent expressions.
20-30 minutes	**I Have, Who Has Equivalent Expression Place Value**	**TK: C Claim: 1 MP: 2**	• Game cards copied on cardstock or paper and cut out and shuffled before being passed out	Students will practice recognizing equivalent expressions by listening to find the question with the expression that matches their card.

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1 day	**Place Value War**	**TK: RK Claim: 2, 3 MP: 1, 2, 3, 7, 8**	• Place Value Cards (0-9, 10-90, 100-900) - 1 set per person/team	Students will compare 3-digit numbers by playing a game of "war" using place value cards. Students will state inequalities aloud and discover and explain that the hundreds place has the greatest impact on determining which 3-digit number is greater or smaller.
1 day	**Hungry, Hungry Block Hippo**	**TK: C, RK Claim: 2, 3 MP: 1, 2, 3, 6, 7**	• Base 10 blocks - 10 ones, 10 tens and 9 hundreds per student or pair. • 10-sided die per pair	Students will explore how place value affects the overall value of a number. Students will roll a die 4 times and decide which three digits to use and assign to each of three place values in attempts to create the greatest 3-digit number. Once the students choose their 3 digits, they will build their number using base 10 blocks and compare it to their partner's. Students will then write an inequality statement comparing the three-digit numbers.
1 day	**Roll and Build Game**	**TK: RK Claim: 2, 3 MP: 1, 2, 3, 6, 7**	• 10-sided dice ○ 3 per student idea or at least 1 for each student that can then be rolled 3 times for each round • Two copies of the game	Students will deepen their understanding of place value as well as the meaning of the symbols to compare numbers. Students will roll a 10-sided die three times to represent the digits of a three-digit number. Students will decide in which order to place the digits to create a number larger than the previous

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			board per student or pair	number. Students will try to build a string of inequalities from 0 to 999.
1 day	**Practice – Comparing 2 and 3-Digit Numbers**	**TK: P Claim: 1**		*Teachers find or create*

CODES:

Types of Knowledge:

RK- Relational Knowledge

C-Conceptual Knowledge

P-Procedural Fluency

M-Memorization

SBAC Claims:

Claim 1: Concepts/Procedures

Claim 2: Problem Solving

Claim 3: Communication & Reasoning

Claim 4: Model and Data Analysis

Math Practices Embedded:

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.

STANDARDS:

Number and Operations in Base 10 (NBT)
Understand Place Value

NBT.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:

a. 100 can be thought of as a bundle 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).

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

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

NBT.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.

Operations and Algebraic Thinking (OA)

Work with equal groups of objects to gain foundations for multiplication.

OA.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 2s; write an equation to express an even number as a sum of two equal addends.