

# Lesson Plan: Place Value Routine

## 4<sup>th</sup> Grade, Four Digit Number

Grade: 4<sup>th</sup>

### Standards:

#### 4.NBT.A Generalize place value understanding for multi-digit whole numbers.

4.NBT.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that  $700 \div 70 = 10$  by applying concepts of place value and division.

4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.

4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.

### Materials needed:

- Math journals/paper
- Base ten blocks
- Whiteboards

### Lesson Overview:

- Introductions (3 – 5 min)
- Counting Circles (5 – 7 min)
  - First, we are going to do a counting game to practice counting large numbers. Today we are going to count from 21,245 – 21,258 (list the sequence on the board).
  - When we get to the last number, everyone will clap once and that student will sit down. Then we will begin again at the beginning of the counting sequence. We will do an example whole class and then I will have you complete the counting circles with your table group.
- Number of the Day – What do you know about today's number? (15 – 25 min)
  - Create a four-digit number with student volunteers (use 3 student volunteers and then the T. will write in one of the numbers so that two of the digits are the same for the closure conversation).
  - T. What do we know about today's number? Think-pair-share, chart out
  - Ask students to build today's number using base ten blocks or sketching. While they are working, ask different students to go build each place value on the board using the WMP? WMV? pieces. Ask additional students to go up to label the place value.
  - T. will demonstrate on the document camera how students will set up their math journal/piece of paper for the day.
    - Today's number:

- Sketch:
- Place value names (name each place):
- Word form:
- Expanded form:
- Round to the nearest thousand:
- Julie says that today's number rounded to the nearest ten is \_\_\_\_\_.
- Do you agree or disagree? Explain your thinking.
- Use  $<$ ,  $>$ , or  $=$  to compare.

40,000 ○ \_\_\_\_\_ (today's number)

Write a sentence comparing the two numbers.

- Circulate as students are working. Select students to complete the various portions of the routine on the whiteboard.
- Have students share their responses and discuss areas of need, disagreements, and/or questions. T. will take note of any ideas/misconceptions that can be talked about whole class.
- Class Conversation:
  - What do you notice about the relationship between each of the place value pieces? Does this pattern continue, as numbers get bigger? What if the numbers got smaller, like decimals, do you think that the pattern would continue as well? If so, what do you think it would look like?
  - When you built the number using base ten blocks, how did it look different from our WMP? WMV? pieces and/or your sketch? Do these different pieces show the same value? Why or why not? How do you know?
  - We built a number up to the ten thousands place today. Using the ideas we discussed, what do you think a piece/sketch would look for the hundred thousands place? What ideas did you use to predict what this next piece would look like?
  - How is the digit \_\_\_ related to the same digit in the \_\_\_\_\_ place?
  - Explain to your partner 1 idea that you learned today.
- Partner Practice:
  - Now, I am going to have you work on a new number with your partner while your teacher and I talk about the ideas that you shared.
  - Have four students pull out digit cards to create the new number on the board. Ask the students to use this number to complete the same prompts.

#### Anticipated Student Responses:

- Students may struggle to represent the number in the various forms since this was a standard in 2<sup>nd</sup> grade, but not in 3<sup>rd</sup> grade.

#### Possible Teacher Questions:

- Support students by having students share or modeling forms as needed. Afterward, name the form (concept, then connect the vocabulary term to it).

- Students may draw today's numbers using dots or including all of the lines in the tens, etc. Sketches may look different throughout the room.
- Students may struggle with rounding. Rounding is introduced in 3<sup>rd</sup> grade as students are asked to round to the nearest 10 or the nearest hundred.

- How might we create a quick sketch to show this piece without drawing all of details? Can we agree to use consistent symbols for each place? Facilitate a conversation to streamline the drawings.
- Ask students what place we are rounding to. Next, ask them what are the two possible answers for rounding this number to the given place. Have them place these two numbers on a number line, then plot today's number on the number line. Which number is today's number closer to? How do you know?

Reflection/Observation Questions:

- What are students saying and doing?
- What ideas/strategies did students use?
- What ideas/strategies did students share?
- What are your next steps to continue the learning from this math routine?

Resources:

- *Number Literacy: What's My Place? What's My Value?* by Debby Head and Libby Pollett, <http://bbypublications.com/products/number-literacy/>
- Illustrative Mathematics, <https://www.illustrativemathematics.org/>.
- *Number Sense Routines: Building Numerical Literacy Every Day* in Grades K-3 by Jessica F. Shumway.
- Lesson plan created by Christine Roberts, TCOE Mathematics Staff Development and Curriculum Specialist, for Dinuba Unified School District, <http://dusd.dinuba.k12.ca.us/>.