

Level 2 Math Grades 3-5

Week 1

Grade 3	Place value and rounding Place value names up to ten thousands Value of a digit up to ten thousands Convert between standard and expanded form Round to the nearest ten or hundred using a number line Round to the nearest ten or hundred Round to the nearest ten or hundred in a table
Grade 4	Place value Place value names Value of a digit Relationship between place values Convert between place values Convert between standard and expanded form Writing numbers up to one million: convert between words and digits
Grade 5	Numbers and operations Relationship between place values Place value Convert between standard and expanded form Write numbers in words Add and subtract whole numbers up to billions Add and subtract whole numbers: word problems

Week 1 Lesson Plan Guide: Place Value and Operations (Level 2, Grades 3-5)

Learning Objectives: Must Know, Should Know, Aspire to Know

Grade 3

- **Must Know:**
 - Place value names up to ten thousands.
 - Value of a digit up to ten thousands.
 - Round to the nearest ten or hundred using a number line.
 - **Should Know:**
 - Convert between standard and expanded form.
 - Round to the nearest ten or hundred.
 - **Aspire to Know:**
 - Round to the nearest ten or hundred in a table.
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Grade 4

- **Must Know:**
 - Place value names and value of a digit.
 - Relationship between place values.
 - Convert between place values.
 - **Should Know:**
 - Convert between standard and expanded form.
 - Writing numbers up to one million: convert between words and digits.
 - **Aspire to Know:**
 - Solve word problems involving writing numbers in expanded and word form.
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Grade 5

- **Must Know:**
 - Relationship between place values.
 - Place value.
 - Add and subtract whole numbers up to billions.
 - **Should Know:**
 - Convert between standard and expanded form.
 - Write numbers in words.
 - **Aspire to Know:**
 - Add and subtract whole numbers: word problems.
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4-Day Lesson Plan

Day 1: Monday (Class Day)

Theme: "Place Value Detectives"

Goals:

- Introduce and practice place value concepts and operations through group activities.
- Lay the foundation for independent practice.

Schedule:

1. **Warm-Up Activity (15 Minutes):**
 - Students work on identifying the place value of digits in numbers on a shared whiteboard.
 - Example: "What is the value of the 7 in 47,893?"
 2. **Mini-Lesson (20 Minutes):**
 - **Grade 3:** Introduction to place value up to ten thousands using manipulatives.
 - **Grade 4:** Exploring the relationship between place values and converting between standard and expanded form.
 - **Grade 5:** Practice writing large numbers in standard and expanded forms up to billions.
 3. **Group Activity Stations (30 Minutes):**
 - **Station 1 (Grade 3):** Place value card sorting game (e.g., match numbers with their expanded form).
 - **Station 2 (Grade 4):** Fill-in-the-blanks worksheet for place value relationships (e.g., "10 times ____ is 1,000").
 - **Station 3 (Grade 5):** Multi-digit addition and subtraction problems.
 4. **Reflection & Wrap-Up (15 Minutes):**
 - Students share a new skill they learned.
 - Distribute homework packets for the week.
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Day 2: Tuesday (At-Home Learning)

Theme: "Deep Dive into Place Value"

- **Grade 3:**
 - Use a number line to round numbers to the nearest ten or hundred.
 - Write numbers in expanded form on a worksheet.
- **Grade 4:**
 - Convert between place values using a chart.
 - Write a short paragraph explaining how place values relate (e.g., "10 tens equal 1 hundred").

- **Grade 5:**
 - Practice writing numbers in words up to billions.
 - Complete a set of addition and subtraction problems.
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Day 3: Thursday (At-Home Learning)

Theme: "Practical Applications"

- **Grade 3:**
 - Round numbers in a table to the nearest ten and hundred.
 - Create a place value chart for a set of household objects (e.g., "12 chairs = 1 ten and 2 ones").
 - **Grade 4:**
 - Write a number story that includes converting between standard and expanded form.
 - Practice converting numbers up to one million into words and digits.
 - **Grade 5:**
 - Solve word problems involving addition and subtraction of multi-digit numbers.
 - Create an example of how place value helps in solving real-world problems (e.g., budgeting).
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Day 4: Friday (At-Home Learning)

Theme: "Creative Review and Assessment"

- **Grade 3:**
 - Draw a number line and plot five different numbers, rounding them to the nearest ten and hundred.
 - Create a poster showing place value up to ten thousands.
- **Grade 4:**
 - Write a step-by-step guide to converting between standard and expanded form.
 - Practice writing large numbers (up to one million) in words and digits.
- **Grade 5:**
 - Write and solve two multi-digit word problems involving addition and subtraction.
 - Create a mini-presentation (visual or written) about the importance of place value in large calculations.

Project 1: “Build a Place Value City”

Objective: Students will create a city where each building represents a number, focusing on place value, rounding, and converting between forms.

Description:

Set-Up:

1. Provide templates of "buildings" (printed outlines) where each building will display a large number.
2. Assign each student or small group a grade-specific task based on their objectives.

Grade 3 Tasks:

- Identify the place value of specific digits in their assigned building's number (e.g., “What is the value of the digit in the thousands place?”).
- Round the building’s number to the nearest ten or hundred and add this rounded number to a "city ledger."

Grade 4 Tasks:

- Write the building's number in standard, word, and expanded form.
- Convert between different place values and explain the relationship between them (e.g., “1 thousand = 10 hundreds”).

Grade 5 Tasks:

- Add or subtract their building's number with other numbers in the "city" to solve a problem (e.g., “What is the total value of the blue and green zones in the city?”).
- Solve a word problem based on the city ledger (e.g., "If Building A has a value of 5,432,000 and Building B has a value of 2,311,000, what is the total population of both buildings?").

Group Activity:

Students collaborate to arrange their buildings on a poster board to create a "city skyline," grouping buildings by zones (e.g., ones, tens, hundreds, thousands).

Outcome: Students practice identifying place values, converting forms, rounding, and solving problems while constructing a collaborative city.

Project 2: “The Place Value Auction”

Objective: Students will participate in a mock auction, using their knowledge of place value and rounding to bid on items.

Description:

Set-Up:

1. Prepare a list of “auction items” with their values written in numbers.
2. Assign each student or group a budget (written in standard, word, or expanded form depending on grade level).

Grade 3 Tasks:

- Identify the place value of digits in their budget and round their total to the nearest ten or hundred.
- Make bids by calculating how much they can afford after rounding their budget.

Grade 4 Tasks:

- Convert their budget between standard, expanded, and word form.
- Write bids in different forms (e.g., write “15,000” in words or expanded form during bidding).

Grade 5 Tasks:

- Add or subtract bids from their budget and track remaining amounts.
- Solve word problems about total amounts spent by the group during the auction.

Group Activity:

Students collaborate within grade-level groups to strategize their bids. Older students assist younger students in verifying their calculations.

Outcome: Students practice place value, rounding, addition, subtraction, and converting forms while engaging in a fun, real-world auction scenario.

Project 3: “Numbers Around the World”

Objective: Students will explore global landmarks and use large numbers to represent data, reinforcing place value and operations.

Description:

Set-Up:

1. Prepare a list of world landmarks (e.g., Eiffel Tower, Great Wall of China) with associated data (e.g., height, length, population of visitors).
2. Assign each student or small group a landmark.

Grade 3 Tasks:

- Identify the place value of digits in the landmark's data.
- Round the landmark's data to the nearest ten or hundred and display the rounded number on a world map.

Grade 4 Tasks:

- Write the data in standard, expanded, and word form.
- Explore the relationship between place values in the data (e.g., "The height of the Eiffel Tower is 324 meters. What is the value of the digit 2 in this number?").

Grade 5 Tasks:

- Add or subtract data for two landmarks and explain the result (e.g., "What is the total height of the Eiffel Tower and the Great Wall of China?").
- Solve a word problem using the data (e.g., "If 2,000,000 people visited the Eiffel Tower and 1,750,000 visited the Great Wall, what is the difference in visitors?").

Group Activity:

Students present their findings to the class and add their data to a collaborative "world map" poster.

Outcome: Students develop a deeper understanding of place value and operations while exploring global geography and data.