Number & Operations in Base Ten (2-5): Understand Place Value

Whole Number Jeopardy

Lesson Overview:

Higher Level — If A=1¢, B=2¢, C=3¢, etc., students attempt to find a word that, when the letters in that word are added together, equals exactly $1. Practice addition, mental math strategies, and estimation.

Mid Level — If A=1¢, B=2¢, C=3¢, etc., students attempt to identify the most expensive word from a given set of words. Practice addition, mental math strategies, and estimation.

Lower Level — If A=1¢, B=2¢, C=3¢, etc., students attempt to identify the most expensive word from a smaller set of 3-6 letter words. Practice addition, mental math strategies, and estimation.

For ALL Students:

- Calculators may be optional. Use to check estimation or addition.
- Opportunities for students to work together and to share and discuss responses and to talk through mental math and estimation strategies

Related Common Core State Standards:

6th Grade: Expressions and Equations:
6.EE.1. Write and evaluate numerical expressions involving whole-number exponents.

5th Grade: Number and Operations in Base Ten:
5.NBT.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

4th Grade: Number and Operations in Base Ten:
4.NBT.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.
4.NBT.3. Use place value understanding to round multi-digit whole numbers to any place.

3rd Grade: Numbers and Operations in Base Ten:
3.NBT.1. Use place value understanding to round whole numbers to the nearest 10 or 100.

2nd Grade: Numbers and Operations in Base Ten:
2.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).

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

Common Core State Standards
Authors: National Governors Association Center for Best Practices, Council of Chief State School Officers
Title: Common Core State Standards (insert specific content area if you are using only one)
Publisher: National Governors Association Center for Best Practices, Council of Chief State School Officers, Washington D.C. - Copyright Date: 2010

DesCartes Statements:

RIT 221-230:
- Rounds whole numbers to the nearest million
- Writes equivalent forms of whole numbers using place value (numbers 100 or greater) (e.g., 253 = 2 hundreds, 5 tens, and 3 ones)

RIT 211-220:
- Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred , thousand and ten thousand
- Writes whole numbers in standard and expanded form through the hundred thousands

RIT 201-210: **Students:**
- Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place
- Identifies the numeral and written name for whole numbers over 100,000
- Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten, hundred, thousand, and hundred thousand
- Writes equivalent forms of whole numbers using place value (e.g., 54 = 4 tens and 14 ones)
- Identifies the place value and value of each digit in whole numbers through the billions
- Writes whole numbers in standard and expanded form through the hundred thousands
- Writes whole numbers using place value terms and vice versa

RIT 191-200 **Students:**
- Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place
- Identifies the numeral and written name for whole numbers 10,000 to 100,000
- Identifies the numeral and written name for whole numbers over 100,000
- Rounds 2- and 3- digit whole numbers to the nearest ten
- Rounds 3-digit whole numbers to the nearest hundred
- Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34)
- Identifies the place value and value of each digit in whole numbers through the thousands and hundred thousands
- Writes whole numbers in standard and expanded form through the hundreds and through the thousands

RIT 181-190 **Students:**
- Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)
- Identifies the numeral and written name for whole numbers to 1000 to 9999 (e.g., 3456 is three thousand, four hundred fifty-six, and vice versa)
- Identifies the numeral and written name for whole numbers 10,000 to 100,000
- Rounds 2- and 3- digit whole numbers to the nearest ten
- Rounds 3-digit whole numbers to the nearest hundred
- Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34)
- Identifies the place value and value of each digit in whole numbers through the tens place, hundreds place and thousands place
- Identifies the place value and value of each digit in whole numbers through the hundred thousands

RIT 171-180 **Students:**
- Identifies the numerical and written name for whole numbers 21 to 100 (e.g., 62 is sixty-two, and vice versa)
- Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)
- Identifies missing numbers in a series through 100
- Identifies the place value and value of each digit in whole numbers through the tens place

RIT 161-170 **Students:**
- Identifies missing numbers in a series through 100
- Writes whole numbers in standard and expanded form through the tens

Whole Number Jeopardy

Higher-Level Lesson & Activity:
(One class period)

1 Prepare the Game

- Print or copy the jeopardy game board onto an overhead transparency
- Cut sticky notes to cover the answer on each square. Then cut bigger sticky notes to cover each entire square.

  When you put the transparency with the sticky notes on the overhead, you will be able to read the questions and answers through the sticky notes, but your students seeing the projected image will only see the shadow of the sticky note on each square.

2 Play the Game

- Divide students into two groups or play as a whole class.
- Have a student choose a category and a point value (100-600). Higher point values are often harder questions.
- Ask the question. Call on a student to respond.
- If the student gets the answer correct, award the points to that team. If the student answers incorrectly, the other team gets a chance to answer and earn the points.
- The student who gets the correct answer chooses the category/point level of the next question.
- The team with the most points at the end of the game wins.

Consider: Ways to Get ALL Students Actively Participating

- When playing as a group, this kind of game can end up being dominated by a small handful of kids. Consider ways to make sure every student gets to participate and is actively involved.
- Some Ideas:
  - Have every student respond on paper before raising their hand. The paper can optionally be turned in for assessment later.
  - Have all students respond on mini white boards
  - Have students work in partners. Have them come to a consensus before putting answer on white board or raising hand
  - Use popsicle sticks with student names or other means of randomly calling on any student to answer

Resources:
- Whole Number Jeopardy #3
- Small sticky notes
- Overhead projector

Optional: Mini white boards or other way for all students to respond/participate

Means of Assessment:
- Observation
- Accuracy of Students' response

Mid-Level Lesson & Activity:
(One class period)

1
Same as Above, Using Whole Number Jeopardy Board #2

2
Same as Above

Resources:
- **Whole Number Jeopardy #2**
- Small sticky notes
- Overhead projector

Optional: Mini white boards or other way for all students to respond/participate

Means of Assessment:
- Same as above

Lower-Level Lesson & Activity:
(One class period)

1
Same as Above, Using Whole Number Jeopardy Board #1

2
Same as Above

Resources:
- **Whole Number Jeopardy #1**
- Small sticky notes
- Overhead projector

Optional: Mini white boards or other way for all students to respond/participate

Means of Assessment:
- Same as above

Whole Number Jeopardy 3

	Exponents	Name the Number	Place Value #1 1,234,567	Place Value #2 9,876,043
100	10^3 = 1,000	54,821	Place value of 6? tens place	Place value of 8? Hundred thousands place
200	100,000,000 = 10^8	682,971	Worth of 3? 30,000	Worth of 3? 3
300	6 x 10^4 = 60,000	304,875	In expanded form: 1,000,000 + 200,000 + 30,000 + 4,000 + 500 + 60 + 7	Round to ten thousands place 9,880,000
400	7,000,000 = 7 x 10^6	1,430,892	Round to thousands place 1,235,000	In expanded form: 9,000,000 + 800,000 + 70,000 + 6,000 + 40 + 3
500	5^3 = 125	465,924,900	Sum of digits in thousands period: 9	Sum of digits in thousands period: 21
600	4^3 + 8^2= 128	1,547,678,965	Round to the hundred thousands place: 1,200,000	Round to millions: 10,000,000

Whole Number Jeopardy 2

	One More or One Less	Name the Number	Place Value #1 123,456	Place Value #2 987,654
100	One more than 187 188	1,584	Place value of 6? tens place	Place value of 4? ones place
200	One less than 476 475	5,007	Worth of 4? 400	Worth of 5? 50
300	One less than 3984 3983	34,720	In expanded form: 100,000 + 20,000 + 3,000 + 400 + 50 + 6	Round to thousands place 988,000
400	One more than 7620 7621	365,832	Round to thousands place 123,000	In expanded form: 900,000 + 80,000 + 7,000 + 600 + 50 + 4
500	One more than 12,565 12,566	705,195	Sum of digits in thousands period: 6	Sum of digits in thousands period: 24
600	One less than 36,98	2,378,945	Round to the hundred thousands place 100,000	Round to hundred thousands 1,000,000

Whole Number Jeopardy 1

	What Number Is Missing?	Name the Number	Place Value #1 123	Place Value #2 654
100	2, 3, ____ 4	24	Place value of 2? tens place	Place value of 4? ones place
200	8, ____, 10 9	57	Place value of 1? hundreds place	Place value of 5? tens place
300	20, 21, __ 22	347	Worth of 3? 3	Worth of 4? 4
400	____, 35, 36 34	802	Worth of 2? 20	Worth of 6? 600
500	56, ____, 58 57	2,671	Worth of 1? 100	Worth of 5? 50
600	89, 90, ____ 91	78,945	Sum of digits: 6	Sum of digits: 15