Algebra/Geometry Institute Summer 2006

Number Sense: Understanding Place Value

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School: A. W. James Elementary School
Location: Drew, MS
Grade Level: 5th

1 Teaching objective(s)

Students will read, write, and identify the value of whole numbers.

2 Instructional Activities

Each student will draw a red or blue straw from the secret bag that the student of the day will carry around as each student goes to their seat. The straws will be used later to divide students into equal teams for a class activity.

Teacher will allow each student to draw a vocabulary card from the stack of cards that is lying on the task of the day table as each student enters the classroom.

Class will start with students singing "Rappin' with the Facts" (Multiplication rap song) and a basic facts drill activity. (3-5 minutes)
Facts Drill

Example:

1. $72 \div 9 =$ 2. $8 \times 9 =$ 3. $17 + 3 =$ 4. $20 - 3 =$ 5. $2 + 8 =$
6. $10 - 8 =$ 7. $13 - 7 =$

Teacher will review the vocabulary words for today's lesson using vocabulary cue cards that contain definitions, context clues, or pictures for the following terms.

Place value, digits, ones, tens, hundreds, thousands, ten thousands, hundred thousands, millions, period, sum, difference, quotient, and product.

Teacher will draw a vocabulary word from the vocabulary box located near the computer center.

After a word has been drawn, the teacher will display the word and allow the students time to determine which student has the corresponding definition, context clue, or picture that is associated with the term being displayed. This process will continue until all possible clues have been matched. There are at least three clues per term.

Today's Lesson

Divide students into two equal teams using the color coded straws drawn before class began. Give each student in the team a laminated 3½" x 5" index card that names a place in the place value system.

ONES	TENS	HUNDREDS

To demonstrate how the game will be played the teacher will show the number 1,968 within a place value chart using a smartboard and LCD projector. Show the students several different place value charts with values through hundred millions. (see figure 1.2 in Attachment A)

Tell the students that today we're going to explore the place value system further, by playing a game called "Who Can Line Up the Number!"
Remind students about the classroom rules when we're having fun at learning:

- Use our inside voices at all time.
- No excessive talking
- Do not horse play in the classroom
- No arguing with each other
- Absolutely no pushing and shoving

Explain the rules of the games:

- Must collaborate among team
- No yelling out answers
- Each team will have fifteen seconds to demonstrate a response
- Must place value system and give the value of the underlined digit
- One point will be given for each correct response
- Teams will loose turn for each incorrect response

Teacher will show various numbers in word form or expanded form on the smartboard.

The teams will collaborate with the members to devise a plan of to model the number being displayed.

The first team to line the number up with each digit in the correct place must go to the board

- read the number correctly from left to right
- write the number in standard form and in word form and/or expanded form
- identify the underlined place value in the number and give the value of the digit in that place. (The students will play the game for (25 minutes)

The teacher or odd numbered student will keep the score. When the timer goes off the team with the most correct responses wins the game.

When we have finished the game, we will discuss each team's performance and what ideas or concepts were learned or reinforced.

Discuss each number that was displayed during the game and allow students to generalize about the answers.

Extensions: 1) Use decimal place values to change
the game. Write numbers in word form and expanded form. Place students in pairs using the red blue concept established earlier in the lesson.

Homework: Let the students design a game using the place value system. Tell them to use the same format and add numbers with decimal place values through ten thousandths.
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3 Materials and Resources

Laminated index cards w/place value labels (two set)
Projector
Smartboard
Bag of red and blue straws
Vocabulary cue cards

4 Assessment

Teacher will observe student performance while the game is being played.

Using a dry erase board each student will be give a number

- to read correctly from left to right
- write in standard form, word form, and expanded form.
- identify the value of an underlined digit