MIDDLE LEVEL

Number of the Day

Purpose:

- Number composition and part-whole relationships (for example, 10 can be 2 x 5, 4 + 6, or 20 – 10)
- Equivalent arithmetical expressions
- Different operations
- Seeing number relations, ways of deriving new numerical expressions by systematically modifying prior ones (for example, 7 + 8 = 15 so 17 + 8 = 25)

Description:

Give the students a number to consider each day. Students think of different ways to make that number. As you develop different number concepts in class, encourage your students to incorporate these concepts into the different ways they develop the number. Many students will be familiar with *Number of the Day* from past experience in mathematics classrooms. This provides an opportunity to build on that understanding and for the teacher to build in constraints as noted on the following page.

Materials:

- Chart paper
- Individual white boards or journals

Directions:

Getting started: Choose a number for the day (e.g., the number of days the children have been in school). Ask students to tell you everything they know about that number. For example: 24; the number of sodas in 4 six-packs; the number of eggs in 2 dozen, the number of crayons in my box of crayons, the number of classes at my school. Initially you will want to use *Number of the Day* in a whole group. After a short time, students will be familiar with the routine and be ready to use it independently.

1. Post the chart paper.
2. Write the *Number of the Day* at the top of the chart paper.
3. Ask students to think of several models and equations that would represent the *Number of the Day.*
4. Ask students to represent the *Number of the Day* in at least four different ways.
5. The students will document these in their daily math journals.

6. The teacher will observe the students' work and purposefully choose students to share out those representations that will move the class toward a better understanding of number and operational sense.
7. The teacher will strategically call on those students who represented the number in meaningful ways and write on the chart paper what they dictated. The teacher then leads a class conversation around those representations that best connect to concepts recently learned.

Example: The Number of the Day is 12

$6 + 6 = 12$
$12 = 22 – 10$
$3 \times 4 = 12$
$2^2 \times 3 = 12$
$1/2 \times 24 = 12$
$4.35 + 7.65 = 12$
$-18 + 30 = 12$
$5 + 5 + 2 = 12$
$12 = 10 + 10 – 8$
$100 – 80 - 8 = 12$
$36 \div 3 = 12$
$144 \div 12 = 12$
$2 \times 2 \times 3 = 12$
$53 + (-41) = 12$

Constraints

When students are familiar with the structure of *Number of the Day*, connect it to the number work they are doing in particular units. Add constraints to put on the sentences to practice and reinforce different mathematical concepts. Ask students to include:

- Multiplication and division
- Both addition and subtraction
- Three numbers
- Combinations of 10
- Doubles
- Doubles plus one
- Multiples of 5 and 10
- Zero property
- Emphasize using tens
- Emphasize using hundreds
- Order Property
- Commutative Property
- Associative Property
- Distributive Property
- Write equations with answer and equal sign on the left (10 = 3 + 3 + 4)
- Absolute value
- Square numbers/ Square root
- Factorials
- Show the number in different arrays
- Prime factorization of a number
- Exponents in equations
- Larger numbers, up to millions in equations.
- Ask students to construct number lines containing the number.

- Include decimals in equations.
- Include fractions in equations.
- Use friendly percents of the number (50 %, 25% 10%, 1%)
- Showing the number in different arrays.
- Using “real world” examples (e.g., dozen, week, pints in a quart, minutes in 1/2 hour, lbs. in a ton.