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Professor Grimm

ELED 470 Sec. 5

September 21, 2010

Math Lesson #1

- I. Curricular Area/Topic:** Math lesson on Adding and Subtracting Whole Numbers and Decimals; Number Sense: Using Mental Math
- II. Date/Timeframe for Lesson:** September 21, 2010; One 55 minute lesson plan
- III. Rationale:** This lesson is important for students to understand because students need to know that with adding, subtracting, multiplying, and dividing, that the answer of each problem will always be the same if it consists of the same numbers. It does not matter what order the numbers are in or what direction they are going, just as long as they are the same in the problem, the answer will always be the same. Also, using mental math is important because it will help students work faster in the future and give them an easier time with learning math. One does not want to be sitting in a college math course working out how to add three hundred plus forty-eight. When students can use mental math, it saves time, paper, and frustration.
- IV. Illinois Learning Standards:**
 - ✓ **State Goal 6:** Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.
 - **Standard 6.B.2:** Solve one- and two-step problems involving whole numbers, fractions and decimals using addition, subtraction, multiplication and division.
 - **Standard 6.B.3a:** Solve practical computation problems involving whole numbers, integers and rational numbers.
 - ✓ **State Goal 8:** Use algebraic and analytical methods to identify and describe patterns and relationships in data, solving problems and predict results.

- **Standard 8.A.3a:** Apply the basic properties of commutative, associative, distributive, transitive, inverse, identity, zero, equality and order of operations to solve problems.

V. Objectives:

1. At the end of this lesson, students will know the definition of and know how to use the Commutative and Associative Property of Addition.
2. When this lesson is finished, students will understand mental math and be able to complete some problems while using mental math.

VI. Materials/Resources/Technology: The types of materials that I will need are copies of the Daily Spiral Review, copies of the assessment worksheet, the overhead projector, pens for the overhead projector, dry erase boards for the students to use as well as markers and erasers.

VII. Management/Organization for Instruction: The management and organization that is needed for this lesson is copies of both the Daily Spiral Review and the assessment worksheet printed off a head of time before class starts, there should be no less than 13 copies total.

VIII. Lesson Delivery:

A. Opening: To open this lesson, I will first give out the pre-test to the students about the up coming unit. I will explain to them that this is not worth a grade and that it is just for me to see how much they already know. I will give the students about five to seven minutes to finish the pre-test. *Please see attached sheet for more details about the pre-test.* After the pre-test has been collected, I will begin with the lesson by doing with the students the Daily Spiral Review. There are four questions with the Review that the students will have to answer.

B. Body: For the body of the lesson, I will start off by explaining what mental math is as well as the commutative and associative properties. With these I will explain that mental math is done in their heads without paper, pencil, or a calculator. Also, I will explain that the commutative property is like commuting, you drive from here to there but I always get to the same location. And with this, I can change the numbers of a problem around but

still get the same answer. With the associative property, it is like the students are associated with certain people or a certain group. But, if the students switch and associate with other groups or people, they still are the same. Once I feel like the students have a fairly good understanding of all three definitions, we will start with some guided practice problems together. I will walk through the steps with the students and how to solve each problem. Once the students get a hang of this, I will give them problems to try on their own. This is where the dry erase boards, erasers, and markers come into play.

C. Closing: To close this lesson, I will give the students a worksheet to do with a front and a backside. One side of the worksheet will be a re-teaching side where I will help the students fill out and come up with the answers. On the other side, the students will have to finish it on their own as homework.

IX. Assessment: For this assessment, the students will be given a worksheet that gives them problems that can be solved using mental math, solving word problems, as well as reading graphs to answer questions. This worksheet has thirteen questions on it and will be worth fourteen points. Each question will be worth one point while the last question will be worth two because it asks for a definition and an example.

X. Accommodating Individual Learner: For students who are having trouble with grasping the material, I can always mark off answers on their worksheet that they do not have to complete. And since worksheets usually have more advanced problems towards the end, I can mark off those problems as to not take away the easier problems for more practice to the student.

XI. Extending the Lesson: To extend this lesson, I can have the students come up to the front of the class and demonstrate what the associative property is. By this the students can represent a number and I can have them be put together as groups and then switch groups for them to get a better understanding how the associative property works. This will let them see that it does not matter how numbers are grouped in a problem for the answer to be the same.