

Lesson Plan Format

Teacher : Rochelle Shall

Date: September 20, 2012

Grade Level: Third Grade

Duration: 90 minutes (includes instruction and students work time)

Lesson Title: Finding Differences

Classroom Context:

Number of Students: 25

Student Characteristics: I have 5 students in my classroom who receive RTI (Response to Intervention) for Reading and Math. These students will be out of the classroom with an Intervention Specialist receiving support for math during the math lesson in the classroom.

Available Technology: The classroom has a promethean board and an ELMO document camera.

Topic

The focus topics of this lesson will be comparing whole numbers, finding differences between pairs of numbers, and the different words that can be used to mean subtraction (e.g., less, difference, minus). The presentation of a subtraction algorithm will allow the students to decide which one works best for them.

Rationale

In third grade students need to have a strong number sense. Having a strong number sense will allow them to strategically subtract three-digit numbers. The students have been introduced to subtracting two-digit numbers in second grade, but often do not have a strategy for subtraction when coming into third grade. At this point, it is important to provide the students with different algorithms they can use to avoid counting on their fingers or on a number grid. They must also understand that there are a variety of synonyms for the word subtract.

Standards

Michigan GLCE's

Strand I : Number & Operations

Add and subtract whole numbers

N.FL.03.06 Add and subtract fluently two numbers through 999 with regrouping and through 9,999 without regrouping

N.FL.03.08 Use mental strategies to fluently add and subtract two-digit numbers

Common Core State Standards

Number & Operations in Base Ten

Use place value understanding and properties of operations to perform multi-digit arithmetic.

CCSS.Math.Content.3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction

Lesson Objectives

Students will understand and be able to...

- Compare three-digit numbers using the terms 'how much more' or 'how much less'.
- Subtract three-digit numbers using mental strategies specifically from an algorithm (Trade-First Algorithm).
- Understand that the terms subtract, minus, less, and difference require the same operation.

Knowledge Bases

What I as a teacher need to know prior to implementing the lesson:

- My students prior knowledge of place value, subtracting pairs of two-digit numbers, and their strategy (if any) when subtracting, and knowledge of vocabulary pertaining to subtraction
- The strategies and reasonings behind the subtraction algorithm 'Trade-First'. I will need to know how to set up examples of this and explain it step-by-step.
- How much time will be spent on each portion of the lesson (Introduction, Whole Group Instruction, Individual Practice, Game, Take Home Assessment Explanation)

What my students need to know before this lesson (prior knowledge):

- Understanding of subtraction between pairs of one and two-digit numbers
- Understanding of place value (ones, tens, hundreds)
- Understanding of our base 10 number system for purposes of regrouping

Vocabulary

subtract: take away a number from another to calculate the difference

difference: the remainder left after subtraction of one value from another

minus: a mathematical operation of subtraction

less: fewer in number

Connections

1. Subtraction Poem

More on top?

No need to stop.

More on the floor?

Go next door..... and get 10 more!

Numbers the same?

Zeros the game!

2. Linus the Minus Story Poster (Vocabulary Connection)

LINUS THE **MINUS**....

is a naughty young lad,

always **TAKING AWAY**,

he is oh so bad!

When he comes around you will

end up with **LESS**!

He makes a big **DIFFERENCE**,

but he'll never confess!

Materials

1. dry erase board slates, dry erase marker, eraser (one per student)
2. interactive promethean board and ELMO document camera
3. Students "Everyday Mathematics Journal Volume 1"
4. Top-It Game board (1 copy per student)
5. One deck of "Everyday Mathematics Deck of Playing Cards" (4 of each card, numbers 1-12) per 2 students
6. poster of subtraction poem and Linus the Minus

Instructional Procedure

This lesson will be taught using a form of direct instruction.

Introduction (Estimated time: 20 minutes)

- a.) Engaging Introduction:
I will introduce "Linus the Minus" to the students and we will read his story aloud together. This will engage the students and introduce the topic of the math lesson (finding differences), as well as all of the important vocabulary words for the lesson.
- b.) Prior Knowledge Discussion:
 - Ask the students what they know about subtraction.
 - What other words can mean the same thing as subtract? (refer to Linus the Minus story)
 - What did you learn about subtraction in second grade?
 - How can you use subtraction when you are at home, shopping, etc.?
 - Does it matter which number is on top of the other when we subtract?
- c.) Objectives:
I will tell the students that at the end of the day they will be able to...
 1. compare three-digit numbers
 2. understand the synonyms for subtract
 3. subtract three-digit numbers using the trade-first algorithm

Development (Estimated time: 50 minutes)

Pre-assessment

I will have the students get out their individual dry erase board (slates) and drill them with the following problems:

Write the number that is 10 less than 21.

What is 49 minus 33?

Take away 13 from 98.

Subtract 39 from 89.

I will give the students one question at a time and give them a minute to answer. I will then have them raise their slates in the air to show me their answers at the same time. This will allow me to assess who has the correct answer to the problem. I will also ask a few students to share with the class HOW they reached the answer they did. I want to know what their thought processes are as they subtract. This activity will also allow me to see which students understand the vocabulary and those who still need help with it. The problems given in this pre-assessment did not involve any regrouping because this will come in the whole group instruction. The students will leave their slates out on their desks to be used later in the whole group instruction.

2. Whole Group Instruction

I will tell the students that not only are they learning new words that can be used instead of 'subtract', they are also going to learn how to subtract three-digit numbers. I will tell them that it will be very similar to when we subtract pairs of two-digit numbers, but we will have one more place value to subtract. I will ask the class what place value that will be (hint: if we have the ones place and tens place in a two-digit number, what is the place value we will have in a three-digit number?) This will lead into a quick teachable moment/review of place value.

I will have the students write the following numbers on their slates:

562

103

499

I will have them write one at a time and then ask them to circle the number that is in the ones, tens, or hundreds place. They will raise their boards when I instruct them to, so that I can assess which students can correctly identify place values.

I will tell the students it is now time to subtract three-digit numbers! I will use the promethean board to write the following problems (one at a time). I will ask the students to model my problem on their slates, but to write them 'stacked' one on top of the other. The first two problems will be:

480 less than 650

583 minus 101

They will solve these independently and I will call on a student for each to share how they reached their final answer. I will then give them this problem:

394 minus 295

I will ask the students if anyone notices a problem once they have written it 'stacked'? If I do not get a response I will ask them if we can solve 4-5? Once they understand that we can't I will tell them it is going to be an easy problem to fix and that there is a 'Subtraction Poem' to help us! The Subtraction Poem is available in the 'Connections' portion of this lesson plan, but it will be written on a large chart paper, so that all of the students can see it and read it aloud as a class. We will then walk through the poem step by step looking at our problem, 394 minus 295. I will ask students after each step if they are following and to stop me if they have a question. We will do a few more practice problems as a group, using the strategy to "Trade-First", which fits well with the poem. After "trading" we will perform the necessary subtraction.

The students will be given a worksheet with six subtraction problems, on which they will have to work independently on and turn into me once it is completed. All the problems will require them to "trade" and will use a variety of the vocabulary words for subtract.

Closure (Estimated time: 20 minutes)

Wrap-Up Activity: You Be the Teacher:

If students complete their worksheet early have them pair up in groups of 2. Tell the pair to create subtraction problems utilizing the new vocabulary and three-digit numbers. They will each create one and then trade sheets of paper to solve each other's problem. They have the opportunity to feel like the teacher and they can help each other if needed. It will allow me to walk around and hear how they are explaining to one another what to do next.

I would bring the class together the last few minutes and ask them what they feel they achieved during the math lesson. (I will be looking for the objectives that were stated at the beginning of the lesson).

Assessment

This lesson has a pre-assessment, and a few different formative assessments.

Pre-assessment: This will take place prior to the whole group instruction to see if students had a particular strategy when subtracting two-digit numbers. Also, it will allow me to see who is able to subtract two-digit numbers.

Formative Assessment: I will constantly be assessing the students during the whole group instruction by asking them questions and having them use their slates to answer sample problems.

Formative Assessment: At the end of the whole group instruction, each student will be given a worksheet that they must work independently on. This will be used to see who understands the lesson objectives. The wrap-up activity can also be an assessment because I can walk around and hear the students working together to solve the subtraction problems.

Backup Plan/Alternative Plan/Modification Plan

Differentiation Options:

Enrichment- To extend this lesson to higher levels of thinking I would ask the student to think of another algorithm (method) that they could use to subtract three-digit or four-digit numbers.

Special Needs- The students in my classroom who receive intervention during math are not in the classroom during math instruction.

References

Book:

The University of Chicago School Mathematics Project. (2012). *Everyday Mathematics* (Common Core Standards ed., Vol. 1, pp. 51-55). Chicago, IL: McGraw Hill.