

Lisa Kindsvater

COVER SHEET

(“Comprehension of Word Problems” using a table)

This lesson involves using a table. It fits the “topic of the day” and the “Math-Ese Workshop” by helping students to read and sort through information and to solve the difficult word problems assigned to them. It provides each student a strategy to comprehend the word problem and to solve the question asked or additional ones that could be asked. It develops higher level algebraic thinking skills.

Lisa Kindsvater

6th Grade Math

“Comprehension of Word Problems” using a table

Objectives:

Standard 1.1 – Extend and create patterns from tables, graphs, rules and number Properties and generalize patterns algebraically.

Process Standard 1.5 – Apply a variety of strategies to solve problems, with emphasis on multistep and nonroutine problems.

3.1 – Identify and extend patterns and use experiences and observations to make suppositions.

Instruction:

1. Introduction: We live in an agriculture community. Most of my students have had exposure to animals such as cows, horses, chickens, and sheep. The first problem deals with two of these animals. So we talked about counting them and how important it was to the farmer to get the right head count. This led us into our problem.

2. Instructional Process: We first read the following problem: **Farmer Brown has some sheep and chickens. The total number of heads is 25, and the total number of legs are 76. How many sheep does he have?** We began by each student drawing a table like the following one. We first entered the information that we knew. (Of course I have filled in the whole table so you can see the first five column entries that were made.)

Heads	25	25	25	25
Sheep	1	2	5	10
Chickens	24	23	20	15
Legs	4+48 52	8+46 54	20+40 60	40+30 70

We began visiting about what numbers were constant and never change. We talked about the developing pattern that was beginning to occur as we went along. Was it increasing or decreasing were words that were used. I asked them if we needed to fill out every possibility. They had to think on this one. Could we skip a ways down the chart to cut our work time down since we could see a pattern? We proceeded on with 3 more columns with this one being the last column with the answer.

heads	25
sheep	13
chickens	12
legs	76

- 3. Closure:** The closure time was spent with us first observing the table we had just completed. I used words such as what is the consistent or constant number in each column of the table. What numbers are changing? These are questions that are preparing them for Algebra. We concluded our time with them working two problems of their own that dealt with real life applications of money and fundraising.

Assessment:

I assessed them on how well they were doing on the final two problems assigned. I continually asked them what is the constant. What is changing? Where do you start? When do you know to jump to other possibilities? What do you do if your answers are going the wrong direction in the last row?

Modifications/Accommodations:

If I had a student in this particular class that needed a modification, I believe that I could pair he/she up with one of these students and have them work alongside. (If it was possible by both parties) It is possible that I would need to give direction on a starting point for this student. I would maybe cut the assignment down to one problem.

Reflection:

This activity worked out well. It was a new concept to them. The students enjoyed the real life application. They did have some trouble getting the table filled out. The patterns developed were exciting to them as they headed toward the direction of the answer.

The different higher level, algebraic thinking skills that were being developed were exciting to me as a teacher. They had to understand what was going on, be able to articulate it, and finally to write it down.

Three additional “comprehension” strategies that I plan to implement are the following:

- 1) Playing a game where you pair up each student with another student. You put a problem on a huge piece of butcher paper or the Smartboard (if you have one). You let one of the students from each pair look at the problem for about 1 minute, then you cover it up. The other student proceeds to ask “yes” or “no” questions to the student who looked at the problem until he/she gets all the information needed to solve the problem.
- 2) The use of literature – How Much is a Million is a great book by David M. Schwartz that has some exciting neat ways to develop comprehension strategies in a different sort of way.
- 3) “Word Problem Roulette” on pp. 130-131 of Teaching Reading in Mathematics.

I also picture myself using “concept maps” and “foldables” in different areas. I am excited about both of these new tools!

Lisa Kindsvater

Cover Sheet

(Comparison of fractions, decimals, and percents)

In this lesson the students will be learning how these three concepts interchange back and forth. We will be talking about how we need to know all three and how they are used differently for different communication purposes. We will be creating a foldable from Dinah Zike's book, Big Book of Math, located on p. 71. In using this, we will look at proper fractions based on 100, alongside their decimal and percent counterparts. We will look at fractions with equivalents ≥ 1 (hence, $\geq 100\%$)

Lisa Kindsvater

5th – 6th Grade Math

“Comparison of Fractions, Decimals, and Percents”

Objectives:

Standard: 2.2 – The student will convert, compare, and order decimals, fractions, and percents using a variety of methods.

Instruction:

- 1. Introduction:** The objective of this lesson is to see how fractions, decimals, and percents tie together. I will begin by using a meteorologist as an example. He would say we have a 60% chance of rain. He would not say we have a 60/100 or .60 chance of rain. So sometimes for communication purposes we must use one or the other. You, as students, need to know all three and be able to change from one to the other.
- 2. Instructional Process:** We are going to create a vertical “Three-tab” foldable like the one on p. 71 from the Big Book of Math by Dinah Zike. We will look at examples on how they are based on hundredths. We will put examples like 47/100, .47, and 47% on our foldable. We will take a look at fractions that will reduce and at fractions ≥ 1 .
- 3. Closure:** During closure time, I will make sure each foldable is created correctly. We will think of some ways that fractions, decimals, and percents are used interchangeably and particularly for different communication reasons. I will tell them to keep their foldables, as we will use them “down the road.”

Assessment:

I am going to have them go to the white board three or four at a time. I will give them a fraction, decimal, or percent and they will need to convert to the other two.

Modifications/Accommodations:

Depending on the level the students are at, I may only require a student to know the proper fraction conversions. I would want them to be able to understand a meteorologist on TV when he/she hears there is a 60% of rain.

Reflection:

I am excited about teaching this lesson. I have done it in other ways. However, having the foldables where they will have something to refer back to will be of great value. Again, for them to understand the purpose of being able to change back and forth between the 3 different forms of representation will hopefully gain their interest and give them a purpose for doing the lesson.