Fourth Grade Math
Higher Order Thinking (H.O.T.) Lesson 3

Wednesday, October 10, 2007
Approximate Time: 45 minutes

Learning Objectives:
The student will be able to –
1. Find patterns in a data set of large numbers.
2. Make accurate predictions based off of a data set.
3. Explain what the statistical mean is using mathematical terminology.
4. Estimate what the statistical mean is from a data set with large numbers.
5. Determine how the mean can be pulled up or down.

Language Objectives:
The student will be able to –
1. Give definitions for "predict," "estimate" and "attendance."
2. Provide written and verbal justifications that explain why an answer makes sense.
3. Explain what the statistical mean is.

Materials:
1. "Kid Friendly" objectives
2. The Minnesota State Fair worksheets (2) – Concepts adapted from NCTM
3. Pencil
4. Scrape Paper
5. Story Problem sheet
6. Reflection

Procedures:
1. Hook - Can you use a sentence with the word attendance in it?
2. Go over objectives with students.
3. Whole class discussion: Can we describe what a state fair might look like? If you have never been to one, have you ever been to a carnival or an amusement park? How are these places similar?
4. Read through chart and questions 1 & 2 as a class. Students write in definitions for "predict." Model how pairs discussion should look. Give students a few minutes to do questions 1 and 2 in pairs.
5. Whole class discussion: What are the trends of the data? What do you notice? What is mathematically happening to the data? Create a list on the board. Students write in responses to question 3.
6. Students discuss with a partner what the mean is (from yesterday's class.) Go over definition as whole class. Give concrete examples of mean. Students fill in question 4.
7. Read through question 5 carefully. Ask several students to revoice what question is asking. Students discuss with a partner and fill out question 5. Why does an estimate need to make sense anyway??
8. Read through question 6 carefully. Ask several students to revoice what question is asking. Students discuss with a partner and fill out question 6.

9. * IF TIME – students create a story problem using large number sentence (see sheet.) Share a few aloud.
10. Students independently complete reflection.
11. Collect all student work.

Closure:
Ask students orally – Think of an example where you would want to find the mean. How could the mean be pulled up?

Assessments:
1. Pairs discussion
2. Whole-class discussion
3. Minnesota State Fair worksheets
4. Independent reflection
5. Story problem (?)

Notes:
Only the first two pages and the last page of the materials section were used for "HOT lesson 3." The beverage pricing sheet was used as a mini HOT lesson and the ice cream sundae lesson was put in the binder as a third grade task.