Dakota State University
College of Education

LESSON PLAN FORMAT

Name:
Grade Level: 3rd Grade
School:
Date:
Time: 10:00 AM

Reflection from prior lesson:

During the last lesson we introduced comparing problems and did some problems that compared length and height. We used the student activity book and connecting cubes to help us with this. The students liked using the connecting cubes. I could tell they were really grasping the lesson. We will be using the connecting cubes again today. They struggled a little with the “writing equations” part of the lesson.

Lesson Goal(s) / Standards:

Session 4.2: Comparing Quantities: Page 165

CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them

CCSS.MATH.PRACTICE.MP3 Construct viable arguments and critique the reasoning of others.

CCSS.MATH.PRACTICE.MP4 Model with mathematics

CCSS.MATH.CONTENT.3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.3

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.

CCSS.MATH.CONTENT.3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

Lesson Objectives:

Given word problems involving comparing numbers, students will be able to use number lines to solve these problems correctly.

Materials Needed:

Student activity book, connecting cubes, Student math handbook, students 1000's chart, number line, scratch paper

Contextual Factors/ Learner Characteristics:

Students in this class are very talkative, so giving them chances to work in groups or with partners works well for them. This gives them all a chance to talk about what they are thinking and doing. Half of the class struggles with math, and the other half usually grasps concepts very quickly. Two of the students are on an IEP for math and usually need a little more guidance and prompting.

A. The Lesson

1. Introduction (2 minutes)

- getting attention - Show students two bowls filled with different amounts of candy. "Have any of you ever looked at a bowl of candy, and then looked at your brother or sisters bowl of candy and asked yourself, "Hmm, I wonder how much more candy they have than me.""
- creating a need to know - "Today we are going to learn how to solve those problems."

- relating to past experience and/or knowledge - “Yesterday, we compared height and length of people and objects…
- sharing objective, in general terms - ...and today we are going to compare lots of different things using number lines, drawings, and connecting cubes.”

2. Content Delivery

Part One: Discussion (20 minutes)

- Ask for a student volunteer to read problem 1 in the student activity book.
    - *Problem: Mrs. Martinez is 67 inches tall. Phillip is 52 inches tall. How much taller is Mrs. Martinez than Phillip?*
- Ask students to describe the picture they made in their mind while reading the problem.
- Draw the picture representation for the students on the board and ask the students to solve the problem.

    - “Where do you see missing information in the picture?” “To solve this problem, what did you need to find?”
    - “To solve this problem we needed to find the difference between Mrs. Martinez’s height and Phillips height. Did any of you ***add up*** to find the difference? What did you do?”

- Ask students to share what they did while “adding up” and then write and equation.
- Show them an example of how to solve the problem with a number line.
    - “Did any of you ***subtract back*** to find the answer to the problem? Explain how you subtracted back to find the answer to this problem.”
    - “What equation can we right to represent this way of thinking?”
- Show them an example of how to solve the problem with a number line.

- Some students may have realized that there is another way to solve this.
    - “Subtracting Phillips height from Mrs. Martinez's height is another way to solve this problem. Can get get a volunteer to show me how to do this with your connecting cubes?”
    - “When we take away 52 from 67, what’s left? What does this number represent?”

Part 2: Activity (40 minutes)
(Students are able to work individually or with a partner during this section)

- Students will use page 67 from the Student Activity Book to complete this activity section of the lesson.
- Students will solve story problems that involve comparing two collections of things
- Students can use cubes, number lines, or drawings to solve the problems and represent their solutions.
- *Example problem for worksheet: Denzel and Jung each collect marbles. Denzel has 104 marbles ad Jung has 65 marbles. How many more does Denzel have than Jung?*

3. Closure (5 minutes)

- After the activity, I will have students back to their desks and complete and "Exit ticket" activity.
- Students will complete one problem picked randomly by the teacher on from page 67 of the Student Activity Book. The problem will be written on the board and students will complete the problem on their individual white boards.
    - Keith has 92 stickers in his sticker book. Nancy has 58 stickers in her boat. How many more stickers does Keith have than Nancy?
- Once the students have completed the problem, I will have them hold up their white boards so I can give them immediate feedback.

B. Assessments Used

- Observations during the discussion - Did the students understand there are different ways to solve the problem? Did the students understand what they were trying to find?

- Observations during activity - Do the students recognize that asking "how many more" is the same as asking "how many need to be added or subtracted to make the quantities the same"? What strategies do students use to determine the difference?" Do students use cubes, number lines, or drawings to solve the

problems and/or represent their strategies? Are students able to write equations to represent the problems and their solutions? Are student's solutions accurate?

- Activity - Student Activity Book: Page 67

- Exit ticket activity - Were students able to complete a problem that directly related to the lesson accurately?

- Homework and Practice - Page 68 (This will be assigned at the closing of the lesson)

C. Differentiated Instruction

Remediation

For students on IEPs, I will start with smaller numbers and have students use the cubes to model their thinking, I will then ask the students to to connect their work with the cubes to the use of a number line. I will ask questions such as:

- "You started with a stick of 17 cubes and added 3 more to get 20, 10 more to get 30, and then 5 more to get 35. How many did you add in all to find the difference between the two numbers?"
- How could you use a number line to show how you solved this problem?"

Enrichment

For students who get their worksheet done quickly and need more of a challenge, I will have a "challenge question" for them to complete with their partner during the remaining group time. This will be a similar question to what the students are working on, but will contain bigger numbers, more steps, and possibly irrelevant information

- Example Challenge Problem: Carla picked 174 flowers from her flower garden. Parker picked 230 flowers from his garden. Brooke picked 185 flowers from her garden. Finally, Bob picked 264 flowers from his garden. How many more flowers did Bob pick than Parker? How many more flowers Parker pick than Carla?

D. Resources

- Pearson Investigations Textbook - 3rd Grade