Figure 8.14 Operating on Integers Lesson Plan – Day 4

Date: 10/13

Standards:
Understand that positive and negative numbers are used together to describe quantities having opposite directions or values.

Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers (*Integers only in this unit)*; represent addition and subtraction on a horizontal or vertical number line diagram.

Highlighted Standards for Mathematical Practice:
SMP1: Make sense of problems and persevere in solving them
SMP2: Reason abstractly and quantitatively
SMP4: Model with Mathematics
SMP5: Use appropriate tools strategically.
SMP8: Look for and express regularity in repeated reasoning.

Know:
- <u>Vocabulary</u>: absolute value, integer, negative, number system, opposite, positive, zero pair

- The layout of a number line

- How to model integers and integer operations with two-colored counters and number lines

- Notation

Understand:
- A negative in mathematics always means "the opposite."

- Mathematical operations apply to and follow the same patterns within our number systems and mathematical disciplines.

Be able to Do:
- Model integers and integer operations in different ways

- Apply and compute with integers

Whole Class

1. We ended yesterday discussing possible patterns that we saw when adding integers. Let's look at our list again and see the patterns more slowly. Why do the patterns make sense?

2. Develop "rules" for adding integers.

Small Group MATH Rotations (Interest differentiation: choose 2 stations, 15 minute rotations):

M – Math Games – Play Integer addition war, and double-digit integer addition depending on the challenge level you want. OR Play Integer Four in a Row

A – Alone Time – Complete an addition of integers worksheet

T – Take a Chance – Given a scenario of a week in the life of a compulsive shopper, model the income and expenditures through addition of integers and give a final balance.

H – Hmmmm..- Using a guided task sheet, try to figure out how subtraction of integers might work.

Closure Activity: Learning Profile Differentiaton

Students explain how to add integers being sure to include:
- Vocabulary - positive, negative, zero pair, integer
- An explanation of the "rules" and why they work
- 4 examples minimum – one each of pos. + pos; pos + neg; neg + pos; neg + neg
- Bonus: show models to explain the "rules"

Choose one of the following formats for your explanation:
- A written explanation
- A picture book style explanation (very visual with pictures, few words)
- Write a letter to a friend who missed this lesson and explain everything to him or her
- Prepare a lesson teaching how to add integers that I can use in the future.
- Another idea that you have as long as you check with me first.

Formative Assessment: Station work
Check for Understanding: Closure activity