**Lesson Plan Sem1-Lesson1**

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| **Name:** | | 301 | | |  | **Course:** | |  | | |  | **Grade:** | 7 |
| **Unit:** | | Integers in real-world quantities | | | | | | | | | | | |
| **Big Idea:** | | Number Properties and Operations | | | | | | | | | | | |
| **Subconcept:** | | Learning the meaning and value of negative numbers | | | | | | | | | | | |
| **Literacy Strategy(s):** | | | journal questions, small groups discussion, teacher questioning | | | | | | | | | | |
| **Lesson:** | | Positive vs. Negative Integers | | | | |  | | **Date Taught:** | 9/8/09 | | | |
| **Learning Objective(s):** | | | | | | | | | | | | | |
|  | Students will be able to | | | Construct vertical and horizontal number lines with integers | | | | | | | | | |
|  | Students will be able to | | | Explain the difference between positive and negative numbers, and find opposites | | | | | | | | | |
| **Idaho Standards (or National Standards if no Idaho Standards exist):** | | | | | | | | | | | | | |

**Detailed Description of Lesson:**

* **Set introduction: Does anyone play golf? If so, ask what par is in golf. In golf, par is the score a good play would normally get on a particular hole. Explain that scores above par are shown with positive numbers, those below par are shown with negative numbers. The more negative a golf score is, the better it is. Explain that most of the numbers they have studied so far have been greater than zero and that now we are going to explore numbers that are less than zero.**
* **Put up a visual representation of the vertical number line on a whiteboard or overhead, and tell students that a vertical number line can be used to compare heights (above sea level) and depths (below sea level). Referring to the visual represention of the vertical number line, state that positive numbers, like +200, are greater than zero. Then state that negative numbers, such as -200 are less than zero. Ask students for a definition of negative numbers and write it on the board—Numbers less than zero. Ask students what number on this number line represents sea level. Point to the zero point on the vertical number line and label it.**
* **Tell students that are now going to construct a vertical number line with their partners on white boards. Each student should have their own whiteboard and marker.**
* **Teacher will first ask student to construct a vertical line like the one one the board and label zero in the middle- remember this is sea level. Teacher will then give them real-world quantities to label.**
  + **The greatest recorded altitude (height) of a bird in flight is 37,000 ft above sea level. What integer represents this? +37,000 Have them label it on their whiteboards.**
  + **A turtle once dove a depth of 3, 973 ft. below sea level. What integer represents this? -3,973 Have them label it on their whiteboards. Have all students show teacher their board by holding them up.**
* **Now, have student draw a horizontal number line and tell them it is used to represent gains and/or losses. As you draw it on the board, state that the farther to the right a number is, the greater it is; the farther to the left, the less it is. Have students label zero in the middle and stop. The teacher then labels positive 1,2, and 3. Ask students what are the opposite numbers to 1,2, and 3. Have a student come up and label -1,-2, and -3 on the teacher’s number line.**
* **State that all the numbers on their number line are integers and that opposite numbers are the small distance from zero. Tell students that they are going to label some losses and gains on their number lines.**
* **Teacher writes on the board on seven runs, a football running back gained 6, 2, -4, 0, -2, -1 and 4 yards. Have students state which integers are positive and which are negative. Have them label them on the number line and compare board with each other. On what side of zero are all the positive numbers? Negative numbers?**
* **Ask students to journal, answering the following questions:**
  + **What are integers?**
  + **What are negative numbers?**
  + **What is an example of an opposite pair of numbers?**

**Handouts:**

* Whiteboard (could have been done on paper)

**Student Work**

*See attached journal entries*

**Reflection:**

Complete the Lesson Reflection Form on the following page.

**LIMSST Project Literacy Lesson Reflection Form**

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| **Name:** | 301 |  | **Date lesson was taught:** | 9/8/09 |
| **Lesson Title/Topic Areas:** | | | | |
| Integers and their opposites | | | | |

**Literacy Strategies Used:**

**I asked questions to gain student prior knowledge and related integer to some things they knew. Partners could discuss, as they constructed and labeled the number lines. I finished with journals so they could tell me what they learned.**

**Student Response to the Lesson:**

**The students responded well to the visual and some made connections about high and low places in the world. Students like working with a partner to talk about what their units and number lines should look like. Some students commented that they always forget which way is vertical and which way is horizontal. I was glad to add opposites to this lesson because some student didn’t realize opposite number where the same distance from zero. This is important for when we talk about Absolute value in the future.**

**Lesson Reflection:**

**I thought the lesson was hand-on and visual, both of which helped students make connections. However, I wish I would have make up these questions on a handout to make the partners read and make sense of the integers first. I think it was too teacher lead. I also wish I would have had more thought provoking questions at the end for the journals. They just give brief answers and some didn’t even write the questions in the journals- just answers like “positive and negative” or “numbers left or right or zero”. Maybe I started integers too soon.**

**Relationship to Previous Instruction:**

This is the beginning lessons for into integers. We have been working with fractions and fractions that simplify to make whole numbers.