



SIOP LESSON PLAN, *Grade 7, Day 4 Subtracting Integers*

Class/Subject Area(s): Math

Grade Level: 7

Unit/Theme: Adding and Subtracting Integers

Lesson Duration: 60 minutes

NCTM Standards

Content	Process
<p>Number and Operations</p> <ul style="list-style-type: none"> Develop meaning for integers and represent and compare quantities with them. Understand the meaning and effects of arithmetic operations with integers. Develop and analyze algorithms for computing with integers and develop fluency in their use. 	<ul style="list-style-type: none"> <input type="checkbox"/> Problem Solving <input checked="" type="checkbox"/> Reasoning & Proof <input checked="" type="checkbox"/> Communication <input checked="" type="checkbox"/> Connections <input checked="" type="checkbox"/> Representations

Content Objective(s):

SW model subtraction of integers using two-color counters.

SW discover rules for adding and subtracting integers.

Language Objective(s):

SW review vocabulary words by participating in Vocabulary Alive.

“The word is _____ and it looks like this . . .”

In small groups, SW discuss patterns they discovered about subtracting integers and write three patterns on an index card.

“Three patterns we discovered are”

Key Vocabulary:	Supplementary Materials:
<p>Content Vocabulary</p> <ul style="list-style-type: none"> Additive inverse Vocabulary covered in previous lessons <p>Functional Vocabulary</p> <ul style="list-style-type: none"> Remove 	<ul style="list-style-type: none"> Two-color counters Subtracting Integers Lab Sheet BLM 16 Fun with Integers Instructions BLM 17 Fun with Integers Recording Sheet BLM 18 Spinner Deck of cards Chart paper

SIOP® Features:		
<p>Preparation</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Adaptation of content <input checked="" type="checkbox"/> Links to background <input checked="" type="checkbox"/> Links to past learning <input checked="" type="checkbox"/> Strategies incorporated 	<p>Scaffolding</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Modeling <input checked="" type="checkbox"/> Guided practice <input checked="" type="checkbox"/> Independent practice <input checked="" type="checkbox"/> Comprehensible input 	<p>Grouping Options</p> <ul style="list-style-type: none"> <input type="checkbox"/> Whole class <input checked="" type="checkbox"/> Small groups <input checked="" type="checkbox"/> Partners <input checked="" type="checkbox"/> Independent
<p>Integration of Processes</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Reading <input checked="" type="checkbox"/> Writing <input checked="" type="checkbox"/> Speaking <input checked="" type="checkbox"/> Listening 	<p>Application</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Hands-on <input checked="" type="checkbox"/> Meaningful <input checked="" type="checkbox"/> Linked to objectives <input checked="" type="checkbox"/> Promotes engagement 	<p>Assessment</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Individual <input checked="" type="checkbox"/> Group <input checked="" type="checkbox"/> Written <input checked="" type="checkbox"/> Oral

Lesson Sequence:

- Review unit’s vocabulary words by participating in Vocabulary Alive.
- Ask students, “Who remembers what we learned yesterday?” Review patterns students discovered in the previous lesson. (Use the unit’s vocabulary to restate students’ patterns.) Construct a T-Chart

(continued)

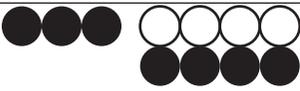


SIOP LESSON PLAN, *Grade 7, Day 4*

Subtracting Integers (continued)

on chart paper. Label one side, Adding Integers, and the other side, Subtracting Integers. Write down the students' addition patterns. Tell students today's lesson will focus on subtracting integers with two-color counters.

3. Introduce content and language objectives.
4. Provide each student with two-color counters and the Subtracting Integers Lab Sheet, BLM 16. Model the first three problems for students. The first three examples will lead in to the introduction of the concept of *Additive Inverse*. Have students construct a 4-Corners Chart for the new word.

<p>1. $-3 - 4$</p> <p>You have 3 red counters and you need to remove 4 yellow counters. There are no yellow counters to remove. Add 4 zero pairs to -3 and now remove 4 yellow counters. How many counters are left?</p>	 <p>If you remove 4 yellow counters you are left with 7 red counters. Answer: -7</p>
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5. Allow students to work in pairs to finish the lab sheet. Have them pay attention to emerging patterns.
6. Group students in triads, and ask them to write three patterns that surfaced from subtracting integers with two-color counters. Collect index cards and read each group's patterns to the whole class. Write subtraction patterns on the T-Chart. Ask students to discuss in small groups if there are any similarities or differences between the patterns for adding and subtracting integers. Have one person from each group share their findings.
7. Formalize the rules for adding and subtracting integers by having a whole group discussion.

Addition Rules	Subtraction Rules
<ul style="list-style-type: none"> ● Add two positive integers and sum is positive ($++$; add, keep $+$ sign) ● Add two negative integers and sum is negative ($--$; add, keep $-$ sign) ● Subtract a positive integer and negative integer and keep the sign of the largest numeral. ($-+$ or $+-$; subtract, keep sign of largest numeral) 	<p>Change subtraction to addition by applying the additive inverse. Then follow the addition rules.</p>

8. In order for students to practice applying the rules of adding and subtracting integers, have them play a game of Fun with Integers (BLM 17). Give each group of students a recording sheet, BLM 18, and have them follow the game's instructions. (NOTE: For continued practice with subtracting integers, assign homework from the district adopted textbook.)
9. Review content and language objectives.

Reflections:

After teaching the lesson, the teacher reflects on what worked, what did not work, and what revisions, additions, and/or deletions need to be made.



PLANNING POINTS for SIOP® Lesson Plan, Grade 7, Day 4

- For the Vocabulary Alive activity, it is important to display vocabulary terms on a word wall, chart paper, or PPT. At the end of Vocabulary Alive consider quizzing students by acting out each gesture and having students write the corresponding words. When taking the quiz, ELs benefit from having the list of words available.
- When compared to addition of integers, subtraction is a more difficult concept to grasp. Therefore, when modeling subtraction with two-color counters, consider using the word *remove* instead of *subtract*. Have students explain their reasoning as they subtract integers. Have them explain why addition needs to be applied to solve $-8 - 3$.