

## Multiplying Integers

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### Lesson Overview

In this introductory lesson, students learn to draw a model for multiplying integers through an inquiry lab, share their models in small groups, and reflect on the application of an algorithm to multiplication of integers.

### Standards Addressed

- 7.NS.2      Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.
- 7.NS.3      Solve real-world and mathematical problems involving the four operations with rational numbers.

### Disciplinary Literacy Best Practices

Think-Draw-Share  
Three Minute Reflection

### Lesson Plan

Time Required – One 60-minute Class Period

Disciplinary Vocabulary : product, negative, positive, decrease, integer, factor, zero pair

Materials Needed:

- Two Color Counters
- Worksheet: Multiplication Inquiry Lab

Assessment: Think-Draw-Share Chart and Three Minute Reflection

### Engage

- Focus Questions: When is the product of two integers a positive number? When is the product of two integers a negative number?
- The teacher will tell the students that they will be using two color counters to find the answers to the focus questions during the lab today. They will use Think-Draw-Share in their groups to support dialogue.

### Explore

- Students will work in groups to complete the inquiry lab using two color counters. Individually, they will Think and Draw their solution to the problem. Group members will then Share their drawings and come to consensus on a solution.
- Key Questions:
  - How did the counters help you decide to multiply the integers in this way?
  - What other strategies might you use to help you figure it out?
- If some groups finish the inquiry before other groups, they should create five (5) additional integer multiplication exercises and solve them using their strategy.

### Explain

- Student groups will share their findings for each problem with the whole class.
- Three-Minute Reflection: Students will assess their work during class in writing. Students will write for three minutes to answer the following questions:
  - How did the strategy of Think-Draw-Share work for your group? How did it support your learning how to multiply integers?
  - What do you now know about multiplying integers? What questions do you still have about multiplying integers?

### Extend

- In later lessons, students will be introduced to an algorithm for multiplying integers and connect the algorithm to their work with the two color counters in the inquiry lab.

### Teacher Biographical Information

Lesson Author: Jill Winland is a 7th grade math teacher at Sandhills Middle School in Lexington School District 4 in Lexington, SC. She has 8 years of teaching experience in middle school.

Name \_\_\_\_\_

Date \_\_\_\_\_

**Inquiry Lab – Multiplying Integers**

Math Problem	Model the Multiplication Problem (Draw a picture.)	Explain your model you drew and tell whether the product is positive or negative.
1.)  $-3 \times 4$		
2.)  $2 \times (-6)$		
3.)  $-4 \times (-2)$		