The Chocolate Problem

Lesson Overview

In this problem-based mathematics lesson, students work collaboratively to solve a real world problem about buying chocolate.

Standards Addressed

7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.

7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

Disciplinary Literacy Best Practices

Table Talk
Think-Pair-Share Variation

Lesson Plan

Time Required – Two 55-minute Class Periods

Disciplinary Vocabulary: data table, visual representation, pattern, equation

Materials Needed:

- o   Rulers
- o   Poster paper, construction paper, or iPads
- o   Markers or colored pencils

Assessment:

Poster displaying student work for each step of the problem or Show Me screenshots

Engage

- o The teacher will introduce the problem and explain expectations.
- o **The Chocolate Problem:** You have $10 to spend on chocolate but the store only has Hershey bars, which cost $2 each and Tootsie Rolls which cost $1 each. How many ways can you spend ALL your money without getting change back? *(Source: John Antonetti, Colleagues on Call)*
- o Task Guide
    - o Show all the ways you can spend the money in a data table.
    - o Create a visual way to display this information.
    - o Describe two patterns (truths) you find in your work.
    - o Write one equation from your work.

Explore

- o Students will explore the problem individually for approximately 5 minutes. (Think)
- o Students will share within their table group their thinking and come to a consensus. (Pairs or table groups share)
- o The teacher will share the next step of the problem and the Explore process completes until all steps have been completed.

Explain

- o Students will present their finding to their classmates using the poster or Show Me screenshots.

Teacher Reflections and Biographical Information

Students need think time prior to sharing with others. The truth statements and equations were the hardest for the students. Students need some prior knowledge of data tables, equations, and mathematical representations before attempting this problem. Problems aligned to units of study would help students see the connections and applications to what is being done in the problems.

This problem was done as a result of our work with John Antonetti with Colleagues on Call. We were given problems from which to choose. The Chocolate Problem is the first of the three we will use with our students as part of our work with him.

Lesson Author: Derek Martin is a 7th grade mathematics teacher at Green Sea Floyds Middle School, Horry County Schools, in Green Sea, SC.