

Wacky Word Problems with Story Boarding

Lesson Overview

In this lesson, students will write and illustrate a wacky word problem based on adding or subtracting a pair of integers. Afterwards students will do a gallery walk to solve each other's problems. The story board process will promote consideration of how integers can be represented in real life terms. They will have the option use number lines, integer chips, or other strategies to form their problem and find the solution. Students will benefit from working as a group and seeing other group's problems as well.

SC Standards Addressed

7.NS.1 Extend prior knowledge of operations with positive rational numbers to add and subtract all rational numbers and represent the sum or difference on a number line.
7.NS.3 Apply the concepts of all four operations with rational numbers to solve real-world and mathematical problems.

Disciplinary Literacy Strategies

Collaborative Groups

Computational Thinking

Tool:

Storyboarding

Cornerstone(s) Addressed:

- Decomposition – students will breakdown the process for solving the word problem through a graphical representation and storyboarding.
- Abstraction – when students are solving word problems from other groups, they will be determining necessary information and discarding the unnecessary.
- Algorithmic Thinking – students will consider steps to solving the equation as they develop the word problem which will use the equation to solve.

Lesson Plan

Time required: Two 55-minute class periods

Focus Question(s): How do we use the addition and subtraction of integers in real life?

Disciplinary Vocabulary: integer, positive, negative, sum, difference

Materials needed:

- Chart paper
- Colored pencils/markers
- Number line
- Integer chips
- Word Problem Prompts
- Considerations "Poster" (see evaluate)

Engage

Students will watch a short video (about making spaghetti with non-food items) that gives an example of an absurd real-life situation to spur creativity. https://www.youtube.com/watch?v=qBjLW5_dGAM

Explore

Students have previously used number lines and integer chips to explore the addition and subtraction of integers, including making zero pairs.

Explain

Students will take notes on adding and subtracting integers in their math notebook. Students have had opportunities to do “regular” word problems involving addition and subtraction of integers.

Elaborate

After lessons and opportunities to add and subtract integers with and without manipulatives, students will create a real-life (yet absurd) situation to show addition or subtraction of integers in a storyboard. Students will create their own wacky word problem involving the addition or subtraction of integers in story board form. Each group will be given a guideline sheet with a word problem prompt to ensure that not every group does the same type integer problem. (see attached). Their answers will not be revealed on their storyboard. Students will do a gallery walk to solve each other’s problems.

Evaluate

Students will do a gallery walk and solve each other’s problems. Students will offer feedback during the gallery walk by using post-it notes to make comments on the word problems. Things to consider would be whether there was enough information there, if there was information included that was not necessary, what they thought about the wackiness of the problem, and questions they had as they solved it. (It would be helpful to make a chart of considerations (from above) for student groups to refer). The teacher and class will discuss the problems and solutions. Students will return to their own problems at the end of the gallery walk and assess the solutions and notes left by the other groups. Student groups will self-assess their own work and modify the wacky word problem as needed.

Assessment Notes

Students can receive a classwork grade for the assignment. Otherwise the teacher will use this activity as a formative assessment. Students groups will submit the original wacky word problem as well as the problem once any needed adjustments were made.

Teacher Biographical Information

Lesson Author: Debra Horton, middle school math teacher, 25 years in grades 5th – 7th

The sum of two positive integers.
The sum of two negative integers.
The difference of two positive integers where the second positive integer is larger than the first.
The difference of two negative integers.
The difference of a positive integer and a negative integer where the positive integer is listed first in the equation.
The difference of a negative integer and a positive integer where the negative integer is listed first in the equation.
The difference of two negative integers.
The difference of a positive integer and a negative integer where the positive integer is listed first in the equation.
The difference of a negative integer and a positive integer where the negative integer is listed first in the equation.

Group Guidelines for Wacky Integer Word Problems:

- Your word problem: (these are the choices that groups could be given)

The sum of two positive integers.
The sum of two negative integers.
The difference of two positive integers where the second positive integer is larger than the first.
The difference of two negative integers.
The difference of a positive integer and a negative integer where the positive integer is listed first in the equation.
The difference of a negative integer and a positive integer where the negative integer is listed first in the equation.

- Make sure your storyboards are clear and easy to read/see.
- Make them colorful and wacky! Think outside the box!
- Write the equation for your word problem on the bottom of this page and return it to your teacher. Be sure to include the correct solution.

Group member names: _____