Germination Rate Math

Grade Level: 5th

Title of Lesson: Germination Rate Math

Performance Standard(s) Covered:
MCC5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

Essential Question: How do we compare fractions?

Objective: Students will be able to compare, add, and subtract fractions to 100% accuracy.

Key Words and Terms:
- Fraction
- Numerator
- Denominator
- Germination rate

Learning Activity

Abstract: Students will plant seeds and figure out the germination rate and use fractions to represent it.

Materials Needed:
- Seed trays (enough for each pair of students)
- Soil (enough to fill each tray)
- Seed packets, five different types (enough seeds for each pair of students to plant about 20 or more seeds)
    - Examples are – radishes, lettuces, beans, any other fast germinating plant
- A sunny place to place seeds (greenhouse or large window)
- A garden (to plant the sprouts in once done with activity)

Procedure:
1. Begin by teaching students about what a fraction is and how to compare different fractions.
2. Explain that you will be planting seeds and determining the germination rate, meaning how many seeds grow to become plants.
3. Divide the students into pairs and give each group a seed tray full of soil and allow them to count out a specific number of seeds (it can be however large you would like).
    a. Pairs can plant how many they would like, having different base numbers will help with the comparison.

4. Have the students plant their seeds, water them, and place them in the windowsill.
5. Continue to care for the seeds on a daily basis and record observations.
6. After a few days, have students count the number of seeds that have sprouted and write out the fraction of the germination rate.
7. Compare the germination rate fractions of each group to each other as greater than, less than, or equal to each other.
8. Add the germination rate fractions of the alike seed groups. Add the whole class together.
9. Plot the fractions on a number line.
10. Ask some of the possible questions below –
    a. Why do you think your germination rate was what it was?
    b. How could you have increased your germination rate?
    c. Is there another way to represent your germination rate besides in fraction form?