

Cupcake Conundrum (5.NF.6)

Summary

Students will apply their understanding of multiplication of fractions and whole numbers to solve real world problems about a bakery.

Main Core Tie

Mathematics Grade 5

[Strand: NUMBER AND OPERATIONS - FRACTIONS \(5.NF\) Standard 5.NF.6](#)

Time Frame

1 class periods of 90 minutes each

Group Size

Small Groups

Life Skills

Thinking & Reasoning, Communication, Employability

Materials

- Task page
- Manipulatives
- Graph paper
- Pictures of cupcakes
- Pictures of bakeries
- Pencils

Background for Teachers

Teachers will need an understanding of the meaning of multiplication of fractions and how that understanding applies to whole numbers.

Student Prior Knowledge

Students will need an understanding of multiplication by a fraction (including the meaning of "x" as "of") and how to use estimation to assess reasonableness of their answers.

Intended Learning Outcomes

Students will apply their understanding of multiplication of fractions and whole numbers and decimal computation to solve problems related to cupcake sales at a bakery.

CCSS.MATH.CONTENT.5.NF.B.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Strategies for Diverse Learners

Supports for struggling students include:

- Organizational supports that show the numbers of cupcakes as they are made and sold
- Help with estimating each solution
- Visual representations of fractions of a group

Extensions

Additional activities include:

- Extension activities found in lesson plan
- Providing data for a week's worth of cupcake sales
- Graphing the trends of chocolate vs. vanilla
- Using recipes to determine the cost of the cupcakes

Bibliography

Adapted from: Smith, Margaret Schwan, Victoria Bill, and Elizabeth K. Hughes. "Thinking Through a Lesson Protocol: Successfully Implementing High-Level Tasks." *Mathematics Teaching in the Middle School* 14 (October 2008): 132-138.

Authors

[David Smith](#)

[Patricia Stephens-French](#)