

Lab Framework

Text:CORD Classic

Unit number and title:9 Using Ratios and Proportions

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Lab Title

Yummy Brownies

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Short Description: Conversion of basic recipe to increase or decrease by $\frac{1}{2}$

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**

Given a standard brownie recipe, each student will be responsible for increasing or decreasing the number of persons the recipe will serve by using the new number of people to calculate the changes in the recipe.

- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)

- Students are able to read a recipe.

Students are able to set up and solve a proportion or ratio in order to change the recipe.

- **New Vocabulary**

- ratio
- proportion
- recipe
- increase/decrease

- **Materials List**

Supply basic brownie recipe

Scratch paper for original calculations

Final draft paper to include both pieces (your calculations and peer editing for classmate's calculations).

- **GLEs addressed**

Math: 1.1.1 Explain how the value of a fraction changes in relationship to the size of the whole.

1.1.4 Apply the concepts of ratio, percent, and direct proportion. W

1.1.5 Understand the meaning of multiplication and division of non negative decimals and fractions. W

1.1.6 Apply strategies or uses computational procedures to add and subtract non negative decimals and like denominator fractions.

1.1.8 Apply estimation strategies involving addition and subtraction of non negative decimals and fractions to predict results or determine reasonableness of answers. W

1.2.3 Understand how the unit of measure affects the precision of measurement.

W

Reading: 2.1.3 Understand that some parts of the text are more important than others.

2.1.4 Understand how to use prior knowledge.

3.2.1 Understand that signs and labels convey information.

Writing: 1.4 — Edits text.

1.5 — Publishes text to share with an audience.

2.2 — Writes for different purposes.

4.1 — Analyzes and evaluate others' and own writing.

- **Leadership Skills**

Students are expected to utilize good time management skills (be ready within the specified deadline!).

- **SCAN Skills**

- 1. Student uses tables, graphs, diagrams, and charts to obtain or convey quantities.
- 2. Student communicates thoughts, ideas, information, and messages in writing.
- 3. Student participates in conversation, discussion, and group presentations.
- 4. Student selects an appropriate model to replicate and responds appropriately as the situation requires.
- 5. Student monitors progress toward goal attainment and motivates self through goal achievement and supports peer partner.

- **Set-up information**

Give each student a copy of the basic brownie recipe.

- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required**)

Two days: day one introduce activity

day two have students "correct" partner that did the opposite operation and include both pieces as the assessment

- **Teacher Assessment of student learning** (scoring guide, rubric)

1. The original calculations for the increase or decrease of the basic brownie recipe.

2. The "corrections" of a classmate that did the opposite operation to insure each student can do both operations.

- **Summary of learning** (to be finished after student completes lab)

-discuss real world application of learning from lab

-opportunity for students to share/present learning

Students will be given the activity guideline and expectations. Each student is responsible for his/her change in the recipe, as well as, correcting another student's work of the opposite operation.

- **Optional activities**

Have the students plan a class celebration and change a recipe to fit the actual number of people who will attend celebration.

- **Career Applications**

Food industry, especially in a restaurant situation.

LAB TITLE: Yummy Brownies

STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
Given a basic brownie recipe you will be able to increase and/or decrease it by $\frac{1}{2}$.
- **Grouping instructions and roles**
Individual for the first phase. You will pick someone who did the opposite operation as you and "correct" his/her work to check for appropriate calculations.
- **Procedures** – steps to follow/instructions
Get the recipe
Convert by increasing/decreasing by $\frac{1}{2}$
Correct someone else's work (not the same as yours)
- **Outcome instructions**
You will be able to change a recipe.
- **Assessment instructions** (peer-teacher)
You will get two grades: one for your calculations and one for your "corrections" of someone that did the opposite operation as you

Lab Data Collection

Student: _____ **Date:** _____

Unit: _____

Lab Title:

Criteria: Write the problem/objective in statement form

Data Collection: Record the collected/given data

Calculations: Complete the given calculations to solve for an answer(s)

Summary Statement:

Other Assessment(s)