

Chocolate Fraction Bars

Lesson Summary

Students look at recipes and double the amount. The students will also make a pan of brownies according to the amount of people. They will also use graph paper to show different amount of fractions of a 10 x 6 rectangle.

Major Topic and SOL

Math SOL (2009) 5.7

Length of Unit

1-2 days

Student Objectives

In Mathematics the student will be able to:

- Double a recipe with fractions.
- Reduce a recipe with fractions.
- Apply their knowledge of fractions to work in the kitchen.
- Figure out in fractions how many each student will get.

In Language the students will be able to:

- Follow the directions of the recipe.
- Write a summary of “A day in the kitchen”

21st Century Skills

- Critical-thinking and Problem Solving
- Communication
- Creativity and Innovation
- Collaboration
- Information and Media Literacy
- Contextual Learning

Assessment Evidence

- The teacher will use the recipe assessment chart:
<http://www.verybestbaking.com/Site-Search-Results.aspx?q=no+bake+cookies&collection=all>
- The teacher will display the different fraction graphs the students colored on the graph papers, showing how it can be done several ways
- A participation grade is also used as assessment

Supplies/Materials/Technology

- **Technology:**
 - Watch a video: “Fractions in everyday life”
http://www.teachertube.com/viewVideo.php?video_id=138058
 - Explore fraction equivalency: <http://www.mathsisfun.com/numbers/fraction-number-line.html>
 - Observe how a pizza is divided according to the amount of people:
<http://math.rice.edu/~lanius/fractions/index.html>
 - Dividing 12 cookies according to the amount of people using fractions:
<http://www.teacherlink.org/content/math/interactive/flash/kidsandcookies/kidcookie.php>
 - Recipe website: <http://www.verybestbaking.com/Site-Search-Results.aspx?q=no+bake+cookies&collection=all>
 - This is the recipe that I used:
<http://www.verybestbaking.com/recipes/32005/No-Bake-Chocolate-Peanut-Butter-Bars/detail.aspx>
 - Recipe Chart Practice and Assessment (handout #3):
http://www.create.cett.msstate.edu/create/classroom/lplan_view.asp?articleID=97#handout3
- **Hands On:**
 - Fraction Kit
 - Measuring cups
 - Graph paper
 - Colored pencils, crayons, or pencils
- **Ingredients for Chocolate Fraction Bars**
 - 2 sticks of butter or margarine
 - 1 box of graham crackers
 - 1 jar of peanut butter
 - 12 oz bag of chocolate chips
 - 1 bag powdered sugar
- **Utensils for Chocolate Fraction Bars:**
 - Mixer
 - Rubber Spatula
 - Pam
 - 13 x 9 pan
 - Measuring cups
 - Microwave safe dish or saucepan
 - Mixing bowl
 - Rolling pin
 - Gallon zip lock bag

- Several wooden spoons
- Knife
- Baggies

Lesson Plan

Motivation & Building Background:

- **Background:** Students have studied basic fractions and fractions that are equivalent. They have worked problems of addition and subtraction of fractions. They can visualize what fractions look like when they are parts of a whole.
- **Motivation:**
 - Ask the students what their favorite cookie is. Have them look through different cookbook magazines or recipes on a website. (<http://www.verybestbaking.com/Site-Search-Results.aspx?q=no+bake+cookies&collection=all>) with nutritional information.
 - Ask the students to imagine that they were asked to bring some cookies to a bake sale, or church function. What recipe would they choose that would be simple and that they could double or even triple.

Presentation

- After looking over several recipes, discuss the following:
 - The difference of the store bought packaged cookies and home- made cookies.
 - I compared Chip Ahoy cookies with Nestle’s Toll House cookies <http://www.verybestbaking.com/recipes/18476/Original-NESTL%C3%89-TOLL-HOUSE-Chocolate-Chip-Cookies/detail.aspx> that are homemade.
 - Where were they are made? (you will be surprised) How long is the shelf - life?
 - Also look at the nutritional information on the package as well as on the recipe and compare the two.
 - Discuss the importance of cleaning the area before working in the kitchen.
 - How to measure dry ingredients.
 - The importance of following the directions.
- Show the students all the ingredients that they are going to use to make the “Chocolate Peanut Butter Fraction” bars.
- Show the supplies that are needed to make the bars and assign jobs to the students.
 - One of the students will need to oversee a check list as the ingredients are added to make sure that all of the ingredients are added.

- Another student can read the recipe a step at a time to make sure that each step is done.
- After they make the cookies they are going to divide them into fractional proportions depending on the amount of students that are in attendance.

Practice/Application

- Each group of students will be given a different recipe that they will have to double on the recipe assessment chart
 - <http://www.verybestbaking.com/Site-Search-Results.aspx?q=no+bake+cookies&collection=all>.
 - The outcomes are then discussed
- Each student will be assigned a job in the kitchen
 - The teacher will explain that they will be working together to make the recipe
 - The teacher will emphasize that they need to be careful measuring, how to measure and that their hands and the surface of the working area need to be clean
- While the bars are chilling students will work on the graph showing the different amounts: $\frac{2}{3}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{2}{5}$, $\frac{3}{5}$, $\frac{5}{6}$
 - These were representing how much each fraction of the pan was eaten. The graph paper was cut so that it measured 6 rows by 10 rows, because the recipe said it yields 60 bars or 5 dozen.