

Cooking in the Kitchen

Working with Fractions

“When am I ever going to use this?”
Using the concepts in this worksheet, you will be able to adjust recipe ingredients to make a larger or smaller batch of cookies.

A favorite chocolate chip cookie recipe of our family is shown below.

Oatmeal Chocolate Chip Cookies

1½ cups sugar	2 cups wheat flour
2 cups brown sugar	2 cups oatmeal
4 cubes of butter	½ cup oat bran
4 eggs beaten	1 teaspoon salt
2 Tablespoons vanilla	1½ teaspoon soda
2½ cups flour	4 cups chocolate chips

Mix ingredients. Spoon onto cookie sheet.
Bake at 350 degrees for 9 minutes.

As shown in the recipe, various units of measure (teaspoons, tablespoons, cups) are used in making the cookies.

1. If we cut the recipe in half, how many cups of chocolate chips and how many cups of flour will be needed?

2. If a $\frac{1}{2}$ -cup measure is used to measure the sugar and brown sugar for the original recipe, how many times will the $\frac{1}{2}$ -cup measure need to be filled for each type of sugar?
3. One way to compare two different quantities is to calculate their ratio. That is, divide one quantity by the other. Calculate the ratio of sugar to brown sugar in the original recipe. Then explain what the ratio means. (Hint: You may find it helpful to use the answer from (2).)
4. We want to make as many cookies as possible but only have 3 cups of oatmeal available. If we plan to use all of the oatmeal, how much sugar and how much oat bran will we need?

<i>Worksheet Title</i>	Cooking in the Kitchen: Multiplying Fractions					<i>Filename:</i>	m1002
<i>Keywords</i>	Cookies, chocolate, recipe, fractions, multiplying fractions, ratio, mixed fractions, improper fractions						
<i>NCTM Standard</i>		Content Standards				Process Standards	
	X	Number and Operations				X	Problem Solving
		Algebra				X	Reasoning and Proof
		Geometry				X	Communication
	X	Measurement					Connections
		Data Analysis and Probability					Representations
<i>Data Type</i>	Words						

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30 people.

Since and $1\frac{1}{2}$ cups of sugar. Calculate the ingredients needed to make enough lemonade for

- 4 To make lemonade for about eight people, you need 4 lemons, 9 cups of water, 1 cup of lemon

and 2 tablespoons of dressing. Work out how much of each ingredient is needed to serve 30 people.

- 3 Judy's coleslaw, when made for four people, uses $\frac{1}{4}$ cabbage, $\frac{3}{4}$ cup grated carrot, $\frac{3}{4}$ cup shallots

$\frac{3}{4}$ cup grated cheese

pinch of oregano

pinch of basil

500 mL tomato sauce

150 g mushrooms

$\frac{3}{4}$ onion, chopped

4 green peppers

300 g salmon

20 g thin spaghetti

Ingredients for 4

Ingredients for 30

Adjust the list for Gas to make enough for 30 people.

Gas's Italian stuffed peppers are always popular. These ingredients are for four people.

5 Stuffed Peppers

1 teaspoon baking powder

30 mL hot water

1 cup mashed banana

1 large egg

1 cup castor sugar

$\frac{3}{4}$ cup butter

pinch of salt

$1\frac{1}{2}$ cups plain flour

Ingredients for 10 muffins

Ingredients for 30 muffins

Adjust the quantities so it will make 30 muffins.

A recipe gives the following ingredients for making 10 banana muffins.

1 Banana Muffins

are using.

they have to cater for 30 people. Help them by working out the correct quantities for the recipes they Judy and Gas decide to have a party to celebrate writing their book. When all the R2VPs are in,