



Two Parts Chocolate

The Big Idea:

Learn about ratios while making delicious chocolate-y treats for your family!

You Will Need:

- ★ Chocolate chips, or any chocolate chopped up in small pieces
- ★ Milk and/or heavy cream
- ★ Measuring cups, spoons and a bowl

The Math Behind the Scenes:

Ratios are used in all parts of our lives, but seeing them in action in the kitchen is a great way to reinforce understanding of them.

How Ratios Work:

A **ratio** shows the relationship between two numbers: the number of boys to the number of girls in your family, the number of red Legos to blue Legos in a pile, the number of white socks to other colors in the laundry. Ratios are written using the ":" to separate the two numbers.

Note that the ratio between two numbers is DIFFERENT from the **fraction** of the total that each number covers. For example, if there are 2 boys and 3 girls in your family, the ratio of boys to girls is 2:3. BUT there are 5 kids in total ($2 + 3$), so the **fraction** of kids who are boys is $2/5$, and the fraction of kids who are girls is $3/5$. Notice that the ratio of $2/5 : 3/5$ is also 2:3!

Now try it with food! If a bag of candy has 4 red pieces and 9 yellow pieces...

- ★ What is the ratio? 4:9 - for every 4 red pieces there are 9 yellow pieces.
- ★ What fraction of the total is red? $4/13$, because there are $4 + 9 = 13$ pieces in total, and 4 of those 13 are red.

And just like fractions, ratios can be **simplified**. A family with 4 girls and 2 boys can be written as 4:2 **OR** 2:1. There are twice as many girls as boys in both cases.

Now check out the next page to make and eat your own ratios!

Tasty Ratios:

You can make any of these delicious chocolate treats - or all of them if you're allowed! Remember that 1 ounce by volume (not by weight) is the same as 2 tablespoons.

<i>Treat</i>	<i>Ratio of chocolate:milk or cream</i>
Hot chocolate	1:3
Ice cream sauce	1:1
Ganache/frosting	2:1
Chocolate truffles	3:1

Hot Chocolate

1:3 – that's 1 ounce chocolate chips to 3 ounces warm milk

★ Mix until chocolate is dissolved, and drink!

Ice Cream Sauce

1:1 – that's 2 ounces chocolate chips to 2 ounces warm milk or cream

★ Mix until chocolate dissolves, and serve over ice cream.

Ganache/Frosting

2:1 – that's 4 ounces chocolate chips to 2 ounces warm cream

Or if you doubled the whole recipe, what would you use? 8 oz:4 oz

★ Mix and spread on toast, cake or anything tasty with chocolate.

Chocolate Truffles

3:1 – that's 3 ounces chocolate chips to 1 ounce warm cream

★ Mix until smooth, then cool for 30 min in the fridge.

★ Roll into balls, and then roll those in toppings such as powdered sugar, chopped nuts, coconut flakes, crushed cookies, etc.

Bonus: Get creative! Think of other fun ways to explore ratios in your kitchen. For example, make a fruit parfait with two fruits. What is your ratio of strawberries to bananas? Blueberries to orange pieces? The possibilities are endless. Express those ratios as fractions, too!