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.

**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!