

Don't worry! We'll help you make lemonade!



BASIC LEMONADE RECIPE

8 cups water

1 cup lemon juice

2 cups sugar

SUGGESTIONS FOR TEACHERS

- Other simple recipes (that don't require a kitchen) include: yogurt parfaits, salsa, clam dip, deviled eggs, trail/chex mix, (fruit) salads and salad dressings, and many simple drinks.
- Perhaps your school doesn't allow students to handle plastic knives for chopping. Or food isn't allowed in the classroom. And certainly ingredients are neither free nor typically provided by schools. But everyone must eat. Ask students to bring in a favorite recipe and do the math on that recipe. Or ask students to think of their favorite meal and write out or find a recipe for that.
- Recipe writing and proof writing have a lot in common. Both require precision and clear communication. Both detail a step-by-step process. Both start from basics and come together in the end as a single accomplished product.
- Nutrition labels (and available nutritional data) are full of opportunities to work with arithmetic, percentages, and unit conversions, while teaching proper nutrition. Every food product sold has nutritional information available (much of it can be found online). Have students record their nutritional intake in a single day.

LEMONADE FUN!

"When life gives you lemons... make some lemonade"

But I don't know how to make lemonade!



CONVERSIONS

- What if you only had a tablespoon? How would you change the recipe?
- What if you only had a soup spoon? How would you make your lemonade?
- How do you make exactly one cup of lemonade?
- How much lemon juice does a lemon produce (experiment!)? How many lemons do you need for the recipe?

RATIOS

What if, instead of a recipe, I told you: Use twice as much sugar as lemon juice and four times as much water as sugar? (Alternatively: Half as much lemon juice as sugar and eight times as much water as lemon juice.) Can you write out the proper recipe?

OTHER SCENARIOS

- What if you only have a three ounce cup and a five ounce cup? How do you make a proper glass of lemonade?
- What if you only have a five ounce cup and a nine ounce cup?
- Many recipes use simple syrup instead of plain sugar (because sugar doesn't dissolve well in cold water). Simple syrup is 50% water and 50% sugar. If we make that change, what is the new recipe?
- Suppose I have simple syrup, a pitcher of water, and a pitcher of 70% water and 30% lemon juice. How do I make a proper glass of lemonade?

BUSINESS SENSE

Suppose it's 50 cents for a lemon and a dollar for a cup of sugar (water is free). What's a good price for a glass of lemonade?

COUNTING CALORIES

Lemon juice has 7 calories per ounce. Sugar has 16 calories per teaspoon. How many calories are in a cup of lemonade?

APPLICATION

Lemonade isn't the only option. Every recipe opens itself up to these sorts of math problems.

Cooking is all about ratios and proportions, measuring, fractions, decimals, percentages, precision, and unit conversions. It's hands-on. It's a useful skill all on its own. It's empowering. It's interdisciplinary: you can tie-in world cultures, history, nutrition, chemistry, and physics. And it comes with its own reward.