BRAVE LITTLE BLOSSOMS

The Fizz Test
A Brave Little Bakers Lesson

Why baking soda and baking powder aren't the same
A free kitchen science lesson · Ages 4 to 12



Snickerdoodles

Lesson 2

Help level: We do · Makes about 16 cookies.

Ingredients

- [ ] ½ cup (1 stick, 113 g) butter, softened
- [ ] ½ cup (99 g) sugar, plus 2 tbsp for rolling
- [ ] 1 egg
- [ ] ½ tsp vanilla
- [ ] 1¼ cups (150 g) all-purpose flour
- [ ] ½ tsp cream of tartar
- [ ] ¼ tsp baking soda
- [ ] ⅛ tsp salt
- [ ] 1 tsp cinnamon (for rolling)

Science spot

Cream of tartar is an acid and baking soda is a base. Together they make the bubbles that puff these cookies up!



Steps

1. Heat oven to 350°F. Line a baking sheet.
2. Beat butter and ½ cup sugar until light and fluffy, about 2 minutes.
3. Beat in egg and vanilla.
4. Whisk the dry ingredients, then stir them in.
5. Mix cinnamon with 2 tbsp sugar. Roll tablespoon-size balls in it and set them 2 inches apart.
6. Bake 9 to 11 minutes, until puffed with soft centers. Cool 5 minutes on the pan.



Junior Baker tip

Look for the cracks on top. That's the bubbles at work!

Dry Ingredients + Dough Balls

1 Level the small spoons

How: Dip the measuring spoon into the baking soda or cream of tartar and sweep it flat with a butter knife.
Why: ¼ tsp is tiny. A heaped spoon can almost double the baking soda, and extra soda tastes bitter.
Looks like: a flat spoonful, nothing piled up.



2 Whisk the dry ingredients first

How: Put the flour, cream of tartar, baking soda and salt in their own bowl and whisk for about 30 seconds.
Why: Whisking spreads the bubble makers evenly, so every cookie rises and there are no bitter bites.
Looks like: no streaks or lumps of white powder.

Your photo here:
whisked dry ingredients

3 Mix just until combined

How: Add the dry mix to the butter mixture in two parts. Stop as soon as you can't see dry flour.
Why: Extra mixing builds gluten, and gluten makes cookies tough instead of soft.
Looks like: a soft dough with no white streaks.

Your photo here:
dough just combined

4 Roll even dough balls

How: Scoop with a tablespoon, roll between your palms, then roll in cinnamon sugar. Set them 2 inches apart.
Why: Same-size balls bake in the same time, and the space lets them spread without touching.
Looks like: smooth, round balls, fully coated.



Little hands: level spoons + roll balls in cinnamon sugar. Big kids: whisk, judge "just combined" and scoop.

Lesson 2 Lab Sheet

by Brave Little Blossoms

Fizz Test



Name: Date:

I think the biggest fizz will be cup...

I saw...

Draw cups A, B and C. Show how big each fizz was!

Now I know...

Big Kid Challenge: stir ¼ tsp baking soda and ½ tsp cream of tartar into 2 tbsp water. Does it fizz?

Fizz Test

Lesson 2

Kitchen experiment · about 15 minutes

You'll need

- [ ] 3 clear cups or small jars
- [ ] 2 tsp baking soda
- [ ] 1 tsp baking powder
- [ ] 4 tbsp water
- [ ] 2 tbsp vinegar
- [ ] Measuring spoons
- [ ] Tape and marker for labels
- [ ] Tray to catch spills
- [ ] Your lab page

Why it works

A barely fizzes. B fizzes, because powder has its own acid. C fizzes big: soda plus an acid makes gas.



Steps

1. Label the cups A, B and C. Set them on a tray.
2. Put 1 tsp baking soda in cups A and C.
3. Put 1 tsp baking powder in cup B.
4. Guess which cup will fizz the most!
5. Pour 2 tbsp water into A, then B. Save C for last: pour in 2 tbsp vinegar.
6. Watch and listen. Which fizzed most? Which barely fizzed?

Lab tip

Try lemon juice instead of vinegar. Then fill in your lab sheet!

Lesson 2

Baking Soda and Baking Powder: The Bubble Makers

Read aloud

Leaveners are helpers in baking. They make tiny bubbles in the batter or dough. Those bubbles get bigger when the batter bakes, and that makes cakes, muffins, and biscuits rise and become light and fluffy. Without those bubbles, our treats would be flat and heavy!



Dig deeper

Baking soda is a base that bubbles with an acid like buttermilk, lemon, vinegar, brown sugar or honey.

Baking powder is baking soda with a dry acid mixed in.

Double-acting powder bubbles when wet and again when hot.

Too much soda tastes bitter. Met acids and bases in Brave Little Kitchen Lab? Same idea, now making bubbles.

This lesson's experiment

Fizz Test! Mix baking soda and baking powder with different liquids and watch which ones bubble. Write what you see on your lab sheet.

Lesson 2

Bubble Makers + Snickerdoodles · Day Card

In this lesson

Learn: how baking soda and baking powder make bubbles, why an acid helps them fizz, and how bubbles make cookies rise.
Make: the Fizz Test experiment + Snickerdoodles.
Words of the day: acid (a sour ingredient like lemon or vinegar) · base (the opposite of an acid) · carbon dioxide (the gas bubbles that make bakes rise)

For the grown-up, on lesson day

Set out: butter and 1 egg, 30 to 60 minutes before baking.
Oven: 350°F. Turn it on after the Fizz Test.
The day: science read-aloud, Fizz Test on a tray (about 15 min), lab sheet, Dry Ingredients + Dough Balls, then bake (9 to 11 min per pan).
Little hands (4 to 6): label the cups A, B and C, pour the liquids for the Fizz Test, roll dough balls in cinnamon sugar.
Big kids (7 to 12): measure and level the small spoons, whisk the dry ingredients, scoop even dough balls and space them out.
This lesson took: ADD AFTER TESTING



Read This the Night Before
Lesson 2 · For the grown-up

At a glance

Time: ADD AFTER TESTING
Prep: set out butter + 1 egg early
Oven: yes, 350°F
Help level: We do



Teach it in 3 sentences

Baking soda is a base, and when it meets an acid like vinegar or cream of tartar, it makes bubbles of carbon dioxide gas. Baking powder is baking soda with a dry acid already mixed in, so it bubbles with just water. Those bubbles grow in the oven and puff up our cookies.

Can-do check

□ Levels small spoons with a knife
□ Mixes just until combined
□ Rolls even balls, 2 inches apart



If they ask...

"Why does too much soda taste bad?" With no acid left to react with, extra soda tastes bitter. So we level the spoons.



Watch for

Heaped ¼ tsp spoons.
Over-mixing after the flour goes in.
Wash hands after raw egg.
No tasting the raw dough.



Bake it again this week

Big kids measure, whisk and mix the dough on their own while you watch. You just handle the oven.

