



Ginger Beer - How can I make soft drinks at home?

Fact

- By using a simple recipe to make ginger beer.
- In a ginger beer mixture you have sugar and active yeast. The yeast uses the sugar to make energy.
- As the energy is made so is carbon dioxide.
- Carbon dioxide gas dissolves into the liquid – the water and makes the water fizzy.
- This process is called fermentation and is the same process that's used to make things like beer and wine.

Do you know

- The carbon dioxide causes the pressure inside the bottle to increase which makes the bottle feel tight and hard.
- When the lid is opened the carbon dioxide gas forms bubbles that rush to the top of the ginger beer to escape out of the bottle neck into the air.
- In an unopened bottle of fizzy drink there's not enough room in the bottle for the carbon dioxide to form bubbles and escape to so the liquid remains fizzy.
- Once you open a bottle of fizzy drink the carbon dioxide bubbles start to escape
- And every time you open the bottle more carbon dioxide is released until the drink's not fizzy anymore it's "flat".



Experiments you can do:

Make your own Ginger Beer

What you need:

The help of an adult – especially when you're pouring the ginger beer into the bottles (it can get very messy!)

5 pints of cold water

1 ½ cups of sugar

½ teaspoon of active dry yeast

1 large heaped teaspoon of powdered ginger

1 teaspoon of cream of tartar

¼ teaspoon of tartaric acid

The grated rind and juice of one lemon

A huge bowl or very clean bucket

A large wooden spoon

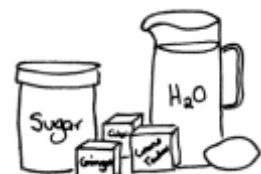
Tea towel

A large funnel

A piece of fine muslin to fit in the funnel

A pouring jug

Clean empty 1.5 litre fizzy drink bottles with clean lids



What you do:

Put all the ingredients in a huge bowl or a very clean bucket and stir it with a wooden spoon until the sugar and yeast is dissolved. Then leave it to stand for 12 hours with a tea towel over it.

Fit the piece of muslin over the funnel and sit the funnel in the first clean 1.5 litre fizzy bottle. Get an adult to hold the bottle and the funnel while you use the pouring jug to scoop the ginger beer out of the container and pour it into the funnel. The muslin will catch all the gritty bits of powder etc. Don't fill the bottle right to the top – leave a wee gap of about 2 cm from the top then put the lid on tightly. Fill all the bottles like that. Then wipe them down if they got a bit messy. Squeeze one of the bottles gently and you'll find it will squeeze quite easily.

Leave the bottles of ginger beer for about 3 days in a warm room without touching them. On the third day test one of the bottles by squeezing it gently. If the bottle feels really hard and is hard to squeeze you can put the bottles in the fridge until they're cold. You may need to open your bottles of ginger beer over the sink because they can be very fizzy!

Other Investigations

When you open a fresh bottle of fizzy drink it makes a hissing sound and you might see bubbles of carbon dioxide form in the drink and rush to the top of the bottle.

Listen carefully to that sound and when you open the bottle next time you want a drink listen to the sound again. Is the hiss as loud or as long the second time you open the bottle? How about the time after that? Do you know why the sound is different? Think about all that gas escaping each time you open the bottle. Is the fizzy drink as fizzy as it was when you first opened it? That's because the carbon dioxide gas in the liquid changes back into bubbles and escapes out of the bottle each time you open it. The more gas that escapes the less fizzy the drink is.

Fruit drinks

What you need:

5 glasses half full of water

slices of four fruit (maybe banana, strawberry, kiwifruit and lemon)



What you do:

Leave one glass of water without fruit but add a couple of slices of banana to one glass, a couple of slices of strawberry to another and so on. Wait for a few minutes then take a sip of water from the glass without fruit. Compare that taste with sips from the other glasses. Can you taste the flavours of the fruit in the water? Which one is the strongest?

You can use this as a taste test. After a few minutes take the fruit out of the water and ask someone to taste the water and see if they can guess which is which. You might like to record which fruit was in which glass so you don't get muddled up.

Jokes

What's wet and hisses like a snake? A fizzy drink!!.