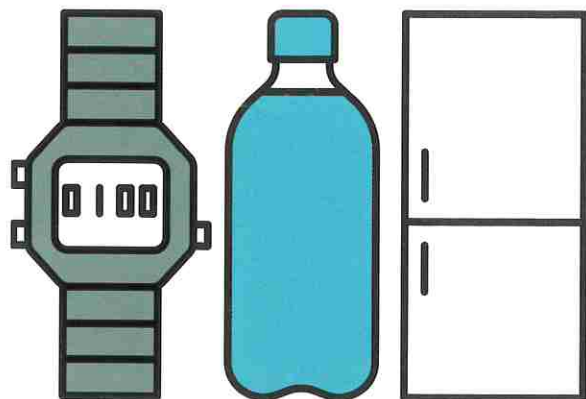


TAP 'N' FREEZE

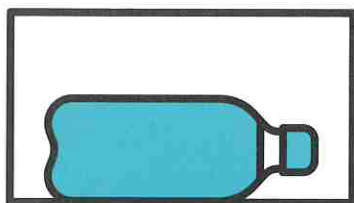
Here's how to freeze a plastic bottle of water just by tapping it.

You Will Need

- bottled water (distilled or filtered is best, but do not use mineral water)
- freezer
- watch or phone with timer



1 Lay the bottle of water down in the freezer compartment.

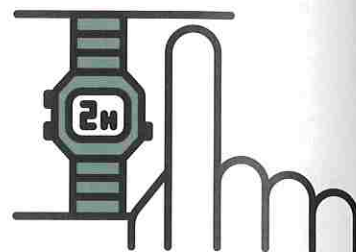


What's the Science?

Tap water freezes at 32° Fahrenheit because it has tiny particles and other impurities in it. These help the crystallization process which forms ice. The bottled water doesn't have these, so it can stay liquid at a lower temperature. But when you tap the bottle on the table, the energy released kicks off a process called nucleation. A single crystal forms, which quickly starts a chain reaction to form other crystals—and the bottle will freeze before your eyes.



2 You need to wait until the bottle is very cold but the water is still liquid. How long the water takes to get to the right temperature depends on how big the bottle is, so keep checking back.



3 When you think the water's on the verge of freezing, take out the bottle and tap it on the table.

4 If you've judged it correctly, the water in the bottle will freeze before your very eyes. If it doesn't, put it back in the freezer and try again in a few minutes. This may happen a few times. When you're successful, make a note of how long it took.

2 HOURS

2 HOURS 30 MINUTES

3 HOURS

