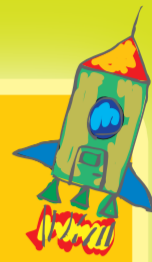




WELCOME to Weekend Science! Every Saturday we're going to guide you through some cool experiments that you can do at home. It's a good idea for you to keep a record of what you do in a Science Journal. That way you can record what you learn, compare results and maybe use them to design new experiments! Remember to always ask a grown-up's permission before trying out an experiment.

歡迎閱讀《週末科學版》！我們每週六都要為你介紹可以在家中進行的有趣科學實驗。你可以在《科學日誌》中記錄自己做了哪些活動，這樣就可以將所學的記錄下來，比較這些結果，也許還可以利用它們來設計新的實驗！先看一下《科學日誌》的點子再開始吧。展開實驗之前，記得要獲得大人許可喔！



Bottled banana! 瓶裝香蕉！

Hot on the heels of last week's fun water prank, this week's experiment doubles as a nifty party trick. Today you'll learn how to put a banana into a bottle without touching either of them. As usual it's not all fun and games — there's plenty of science involved. Warning: Do not attempt this experiment if you do not have permission to use boiling water.

緊接著上週的趣味水瓶惡作劇後，本週的實驗將晉升為俏皮的派對把戲。今天你將學會如何在不碰到香蕉和水瓶的狀況下，把一根香蕉放進水瓶裡。正如往常一樣，這個實驗不僅是好玩的把戲，也包括了許多科學知識。警告：這個實驗會用到沸騰的開水，你必須得到大人的許可才能進行這項實驗。

What you will need: an empty glass bottle, a dishcloth, a funnel, a kettle and a banana.

實驗所需：一個空的玻璃瓶、一塊抹布、一個漏斗、一個水壺和一根香蕉。



METHODOLOGY

Step 1: Put the funnel into the bottle and half-fill it with boiling water from the kettle. Take out the funnel and then wrap a dishcloth around the bottle. Swirl the water around the bottle until the entire bottle is hot.

Step 2: Peel the banana and eat half of it. Quickly pour the water out of the bottle and put the pointed end of the banana in the neck of the bottle. Don't force it in too hard — just make sure it forms an airtight seal.

Step 3: After a couple of seconds the banana will get sucked into the bottle. If the experiment doesn't work the first time, adjust the variables (bottle size, banana size and water temperature) until it works.

方法

步驟一：把漏斗放在玻璃瓶上，然後倒入水壺中的滾水至半滿。移開漏斗，用抹布包住瓶子。搖晃瓶身使熱水來回打轉，直到整個瓶子都變熱為止。

步驟二：剝開香蕉，吃掉半根。迅速倒掉玻璃瓶中的熱水，然後把剩下那半根香蕉的尖端放在瓶頸。不需要用力把香蕉塞進去，只要確認香蕉有密封住瓶子就行。

步驟三：幾秒鐘後，這半根香蕉就會被吸進瓶中。如果第一次實驗沒有成功，調整變因（玻璃瓶尺寸、香蕉大小和水溫）後再測試看看，直到成功為止。

WHY IT WORKS 實驗原理

As you might have guessed, air pressure is key to this experiment. By adding hot water to the bottle you heat the glass. When the water is removed, the air inside the bottle is heated up. The hot air expands and some of it leaves the bottle.

When you put the banana in the neck, the air inside the bottle cools down, lowering the air pressure. Because the air pressure in the room is higher than the pressure in the bottle, the banana is pushed into the bottle.

你可能已經猜到了，這個實驗的關鍵因素是氣壓。你加入瓶中的熱水使瓶子受熱，當你倒掉熱水時，瓶中的空氣已經被加熱。熱空氣會膨脹，所以有一些空氣會逸出瓶外。

當你將香蕉放在瓶頸時，瓶中的空氣冷卻，氣壓也跟著降低。因為室內的氣壓高過瓶中的氣壓，所以香蕉就被推進瓶子裡了。

REAL LIFE APPLICATION 生活中的應用

Air pressure is fundamental to human survival. When you breathe, your lung capacity expands, and air pressure forces air into your lungs. Without air pressure, the respiratory system would cease to function.

(JOHN PHILLIPS, STAFF WRITER)

氣壓對人類的生存來說非常重要。當你呼吸時，你的肺容量增加，氣壓會使空氣進入肺中。若少了氣壓，我們的呼吸系統就會停止作用。
(翻譯：袁星塵)

VOCABULARY 今日單字

1. **funnel** / f n l / n. 漏斗 (luo4 dou3)
2. **swirl** / sw l / vi/vt. 旋轉 (xuan2 zhuan3)
3. **peel** / pil / vi/vt. 剝皮 (bo1 pi2)
4. **air pressure** / r pr / n. 氣壓 (qi4 ya1)
5. **fundamental** / f nd m ntl / adj. 十分重要的 (shi2 fen1 zhong4 yao4 de5)
6. **expand** / k spænd / vi/vt. 膨脹 (peng2 zhang4)

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Did you have fun with today's experiment? Why don't you e-mail us and let us know. We're always happy to hear from our readers!

喜歡今天的實驗嗎？歡迎來函指教！電子信箱：lingual@taipeitimes.com