



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！

Make your own sundial

自製日晷

On a sunny day, the **occupants** of Taipei 101 can look out of their window and tell the time without even looking at a clock. That's because Taipei 101 is the world's biggest sundial. When the **architects** designed the building, they decided to incorporate a time motif into various aspects of the building, and the sundial effect is one example of this motif.

Sundials have been around for centuries because they are **accurate** and easy to make. In today's experiment you will make your own sundial and use it to tell the time.

What you will need: a styrofoam cup with lid, a watch, a marker, a pencil, tape, some pebbles and a compass.

METHODOLOGY

Step 1: Put some pebbles in the bottom of the cup to stop it falling over. Take the pencil and make a hole in the side of the cup. Then make a hole in the lid and push the pencil through both holes so it protrudes from the top at 45 degrees. You've made the sundial, and now it's time to put it to work.

Step 2: It goes without saying that your sundial won't work very well unless it's sunny, so wait for a sunny day when you are free during the daytime to do this part of the experiment. You should start the experiment in the morning.

Step 3: Using the compass, **align** the pencil in the sundial with north. Wait until exactly 9:00am and use the marker to record where the **shadow** falls on the lid. Go away and come back at 10:00am and make another mark on the lid. Continue every hour until 4:00pm.

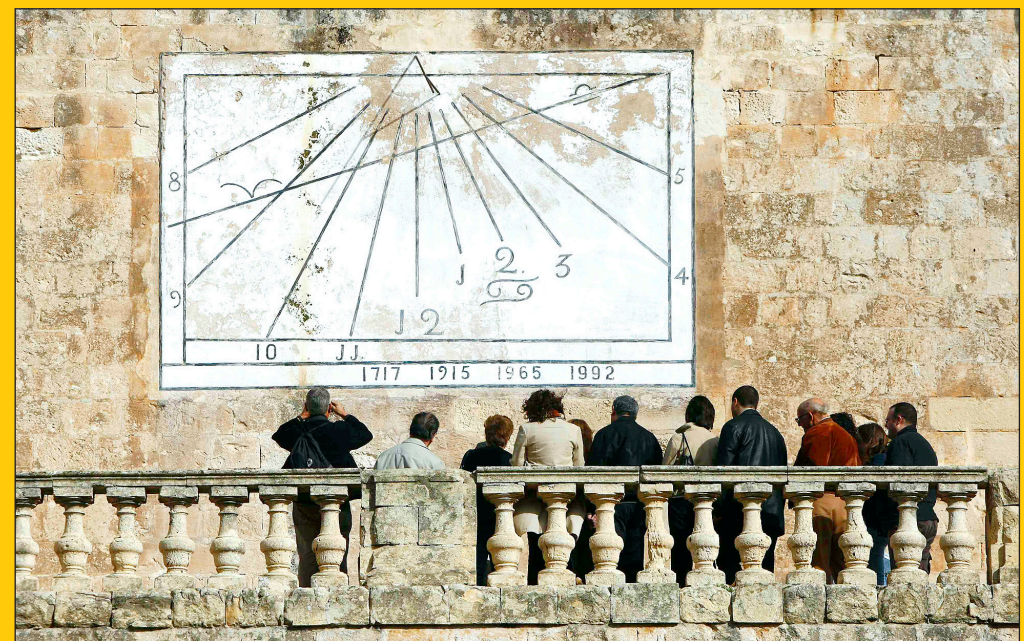
Step 4: The following day, try to tell the time just by using the sundial. **Compare** the time from the sundial with the time on your watch. How accurate is it?

(JOHN PHILLIPS, STAFF WRITER)

步驟三：利用指南針，將自製日晷的鉛筆對準北方。等到早上九點整，用麥克筆記下杯蓋上鉛筆的陰影落在哪裡。十點鐘再回來標記杯蓋上陰影的位置。每個小時都持續這個步驟，直到下午四點。

步驟四：隔天，試著用你的日晷看時間。比較從日晷和手錶上讀到的時間。這個日晷有多準確？

(翻譯：袁星塵)



Visitors listen to a talk about early 18th century sundials around the courtyard of the Dominican Priory in Rabat, central Malta, on Nov. 23, 2008.

PHOTO: REUTERS

二〇〇八年十一月二十三日，遊客在馬爾他中部拉巴特城多明尼加修道院的中庭，聆聽關於十八世紀初期日晷的解說。

照片：路透社

天氣晴朗時，台北101裡的人甚至不必看時鐘，只要望出窗外就可以知道時間。這是因為台北101是全球最大的日晷。建築師在設計這座建築時，決定在建築各方角度納入時間主題，而這個主題的例子之一就是日晷作用。



人類已使用日晷好幾個世紀，因為它們精準又容易製造。在今天的實驗中，你將自製日晷並用它來看時間。

實驗所需：一個有蓋子的保麗龍杯、一只錶、一枝麥克筆、一枝鉛筆、膠帶、一些小石頭和一個指南針。

方法

步驟一：把一些小石頭放到杯子底部，以防杯子翻倒。用鉛筆在杯子側面戳一個洞，然後再在杯蓋上戳一個洞。將鉛筆同時穿過這兩個洞，使其以四十五度角向上方突出。你已完成日晷。現在，讓我們來實地測試一下吧。

步驟二：不用說，除非現在陽光充足，否則你的日晷起不了什麼作用，所以等哪天陽光充足，而你又有空的時候再來進行這部分的實驗。這個實驗應當從早上開始進行。

VOCABULARY 今日單字

- 1. occupant** / k j p nt/ n.
佔有人 (zhan4 you3 ren2)
- 2. architect** / rk t kt/ n.
建築師 (jian4 zhu2 shi1)
- 3. accurate** / ækj r t/ adj.
準確的 (zhun3 que4 de5)
- 4. align** / la n/ vi./vt.
對準 (dui4 zhun3)
- 5. shadow** / ædo/ n.
影子 (ying3 zi5)
- 6. compare** /k m p r/ vi./vt.
比較 (bi3 jiao4)



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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：bilingual@taipeitimes.com