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3D printing can help solve problems big and small.

3D 列印，幫忙解決生活大小事。

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3D 列印化塑為金 賦予垃圾時尚新生命

英文 / Leila Luo 圖 / 123RF

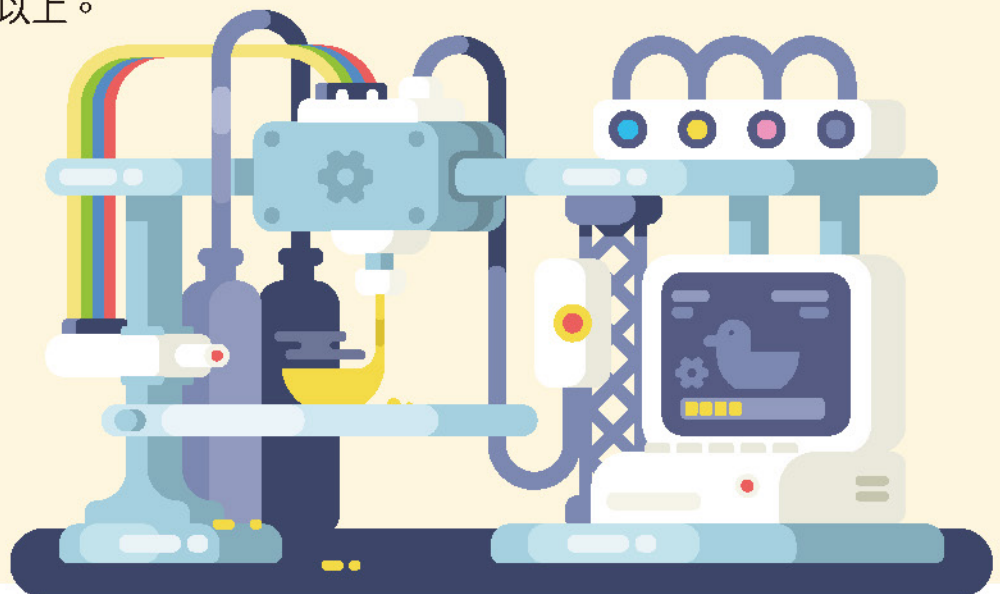


By now, most people know that plastic waste is a big problem for everyone. Solving it will require different solutions for different places. Luckily, creative people are coming up with new solutions every day—such as feeding that plastic into a 3D printer in order to create something new.

時至今日，塑膠廢棄物是人類共同面臨的難題。不同地區，解決塑膠垃圾問題也需因地制宜。所幸創意無窮的人們，提出以塑膠垃圾作為 3D 列印素材等新解方，藉此將廢物化為新品。

In St. Petersburg, Russia a new company called 99Recycle is helping reduce the amount of plastic garbage that sits in landfills. By working together with local recycling non-profits, they've collected over 70 tons of plastic so far. The plastic is then used to 3D print cloth and shapes that are then hand sewn into goods like pencil cases, backpacks and bags.

位於俄羅斯聖彼得堡新創公司 99Recycle，現正致力於協助減少掩埋場塑膠垃圾的數量。經由與當地非營利回收組織的合作，以回收的廢塑膠，利用 3D 列印製成布料及各式圖樣，再以手工，縫製成鉛筆盒、背包和袋子等商品；至今回收再利用的塑膠垃圾已達 70 噸以上。



waste (n.) 廢料、垃圾 come up with (phr.) 想出 feed (v.) 放入 (機器) print (v.) 列印 goods (n.) 商品

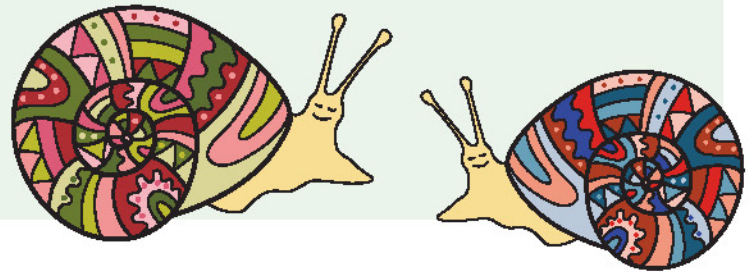
以藝術拯救瀕危生物

用影像留住蝸牛的家

英文 / Andrew Edmunds 圖 / 123RF

There are six species of painted snails in Cuba that are so beautiful that their shells are illegally collected and sold. An Italian photographer has teamed up with the small group of researchers who are trying to save these snails. They hope the photos of the living snails will help stop the illegal collection.

古巴棲息著 6 種彩條蝸牛，牠們色彩斑斕的殼，令人們趨之若鶩，導致蝸殼的非法濫採與買賣猖獗。為了傳遞停止非法採殼的理念，一位義大利攝影師與致力拯救彩條蝸牛的小型研究團隊攜手合作，希望藉由一張張彩條蝸牛自然中的身影，挽救這些小生命。



防災預測大躍進

海底光纜揪震快

英文 / Andrew Edmunds 圖 / 123RF

Earthquakes and tsunamis cause damage extremely quickly. That's why earthquake researchers at Caltech have tested a new way to detect them sooner. By studying changes in the fiber optic cables that already sit at the bottom of the ocean, the researchers were able to detect earthquakes faster than ever before.

地震和海嘯於極短時間內即可造成巨大傷害。為此加州理工學院地震研究員實試了一種新式地震偵測，可更快地察覺地殼變動的發生。地殼活動會干擾海底光纜的傳輸，藉由研究光纜的傳輸變化，研究員能比以往更快地偵測到地震的發生。



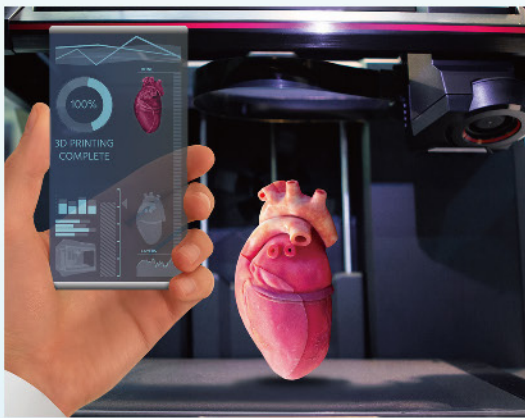
3D 列印多功能支援

低成本高精度好處多多

英文 / Leila Luo 圖 / 123RF

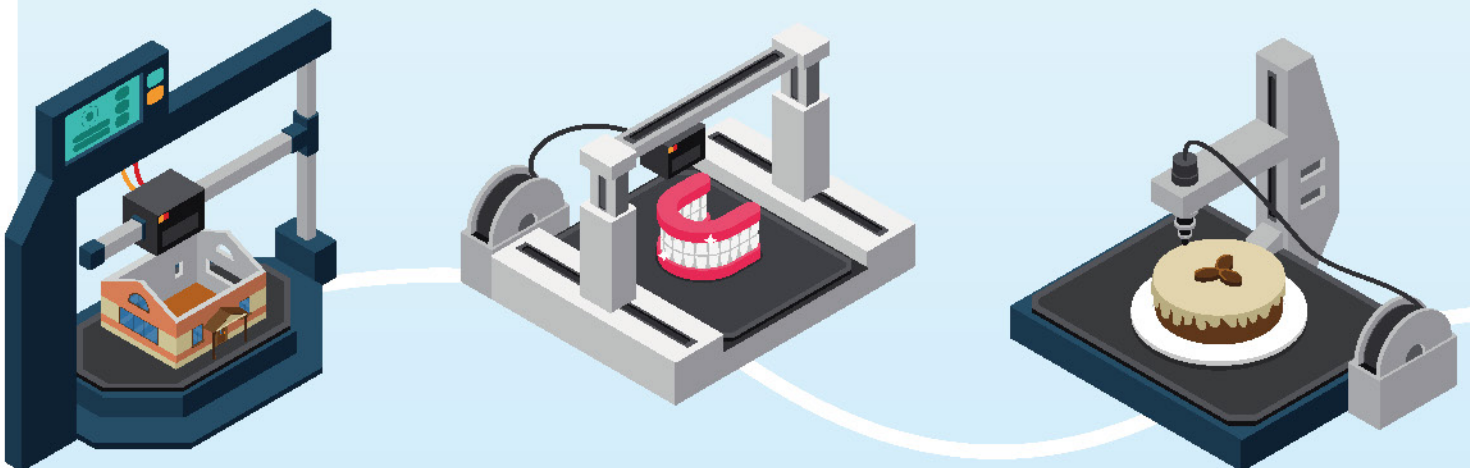
3D printing is good for more than just creating small things. It can be used for building much larger things like houses. The first 3D printed house was made in 2015. Since then, the technology has been used to print low-cost houses that provide 50 homes for people living in extreme poverty in Tabasco, Mexico.

3D 列印不僅可用於製作小物品，也能用於建造如房屋般龐大的東西。自世界第一間由 3D 列印房屋於 2015 年落成後，3D 列印的技術即用於建造成本低廉的房屋上。在墨西哥塔巴斯科州，3D 列印便為赤貧人口提供了 50 套低價房屋。



3D printing is also useful for delicate things like medical models. Doctors have begun to use the machines to print out models of patients' damaged body parts, for example a damaged heart that needs surgery. They can use this model to plan the surgery, making it easier for them to perform surgery quickly and more accurately. This also helps patients recover faster.

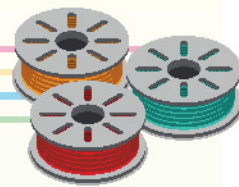
打造如醫學模型的精密物件，3D 列印也能派上用場。醫生利用 3D 列印機打造病人患部的模型，例如需要動手術的受損心臟。藉由 3D 列印出的模型進行術前規劃，讓醫生們能更迅速、精確地完成手術，亦有助患者更快康復。



technology (n.) 技術 provide (v.) 提供 delicate (a.) 精密的 patient (n.) 病人 surgery (n.) 外科手術

再窮也不能窮教育

3D 列印一圓孩子上學夢



英文 / Leila Luo 圖 / 123RF

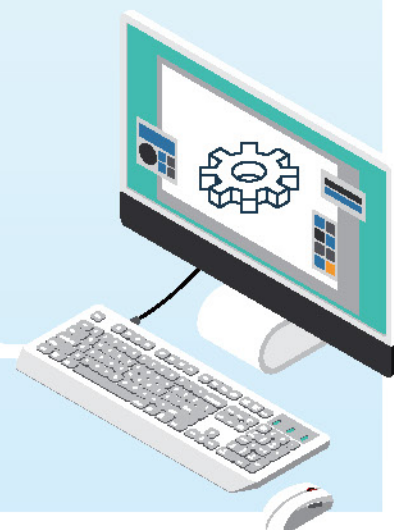
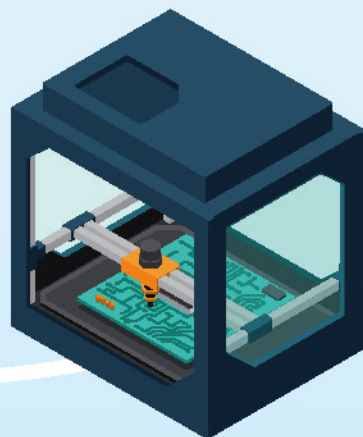
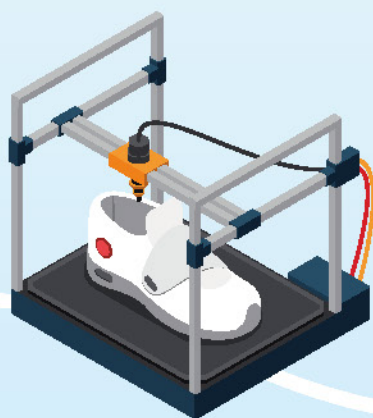


When Maggie Grout was in her second year of high school, she was already thinking of ways to help communities around the world have better access to education. After learning more about the matter, she discovered the main problem was overcrowding—too many children and not enough schools. Could 3D printing help?

瑪姬・格勞特高中二年級時，已在思考如何讓世界各地的社區教育更普及。在深入探究原因後，她發現主要的問題為人口過剩，以至於現有的學校數量不足，無法提供所有的孩子就學。然而 3D 列印技術能幫得上忙嗎？

At age 15, she started a non-profit called Thinking Huts in order to partner with 3D printing construction companies. After 6 years of planning and fundraising, Thinking Huts is ready to print its first school on the island nation of Madagascar. If everything goes according to plan, it will be the world's first 3D-printed school. Not only that, it will only cost half of what a traditional school costs to build.

為與 3D 列印建築公司合作，格勞特於 15 歲時創辦了非營利組織「Thinking Huts 思考屋」。經過 6 年的規劃和募款，島國馬達加斯加即將迎來 Thinking Huts 建造的第一所學校。若一切計劃進行順利，這將成為世界上第一所 3D 列印學校；不僅如此，該校的造價也僅為傳統學校的一半。（編註：組織名稱暫譯。）



access (n.) 途徑、方法 discover (v.) 發現 hut (n.) 小屋 construction (n.) 建設 according to (prep.) 依照

1. According to page two, what can 3D printers make?
 - a. clothes
 - b. containers
 - c. landfills
 - d. plastic
2. Why are people in Cuba collecting snail shells?
 - a. They are in danger.
 - b. They are rare.
 - c. They are pretty.
 - d. They are delicious.
3. What did the earthquake researchers test?
 - a. cables for discovering movement
 - b. fibers for faster cloth
 - c. optics for glasses
 - d. damage to technology
4. How do 3D printers help doctors?
 - a. They perform surgery.
 - b. They take care of patients.
 - c. They let doctors make new parts.
 - d. They help doctors prepare.
5. What does “traditional school” on page 5 mean?
 - a. a school for traditional culture
 - b. a school built with normal methods
 - c. a school with old customs
 - d. a school against modern ways
6. What does it mean if you live in poverty?
 - a. You have a big house.
 - b. You have lots of toys.
 - c. You don't go to school.
 - d. You can't afford anything.

Cloze Test A

First, make sure the bed ____ the printer is level. Second, insert the SD card ____ the printer. Then, select the file of the model you want to print. Last, watch for ____ problems with the printing.

Cloze Test B

____ it so bad to collect seashells from the beach? I didn't think ____ until I learned that animals need those shells. Birds use shells to build nests. Tiny animals use shells ____ homes.

1.b 2.c 3.a 4.d 5.b 6.d

1. 查閱第 2 版的報導，3D 列印機製造的鉛筆盒、背包和袋子，都是用來收納東西的容器 (n. container)。選項 (a) 為陷阱，3D 列印可用來製造布料 (n. cloth)，但不是衣服 (n. clothes)。

2. 試著選出最佳答案。古巴彩條蝸牛或許珍稀，但人們非法採集、買賣蝸殼的原因是 (c) 牠們的蝸殼很美麗。

3. 閱讀理解。第 3 版報導提到，研究人員透過海底光纜訊號的變化，成功偵測到地殼變動。

4. 第 4 版關於 3D 列印技術於醫療的應用上提到，藉由列印病人患部的模型，醫生能做好術前規劃，讓手術更快完成。

5. traditional (a. 傳統的、慣習的)，通常是指文化上的傳統，但此處是指一般學校的建造方式。

6. poverty (n. 貧困)，生活貧困意味著 (d) 無法負擔民生花費。選項 (c) 為陷阱，貧困可能使孩子無法就學，但未就學不見得是因為生活貧困。

Cloze Test A

1.of 2.into 3.any

首先，確保列印機的底座以水平放置；其次，將 SD 記憶卡插入列印機；接著，選取欲列印的模型檔案；最後，觀察列印過程是否有異狀。

Cloze Test B

1.Is 2.so 3.for

蒐集海灘上的貝殼對環境有害？我本不以為然，直到了解動物們對海灘上貝殼的需求；鳥類用貝殼築巢，小動物則以貝殼為家。

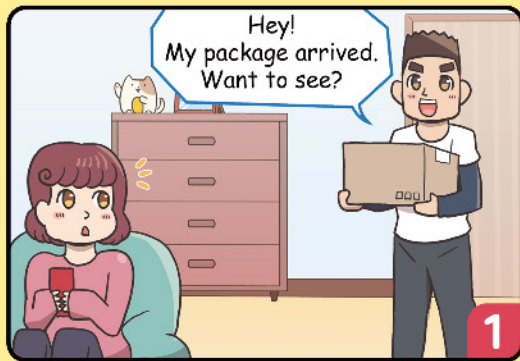
勘誤啟事

《雙語週報 155 期》校訂疏漏，特此向讀者致歉。

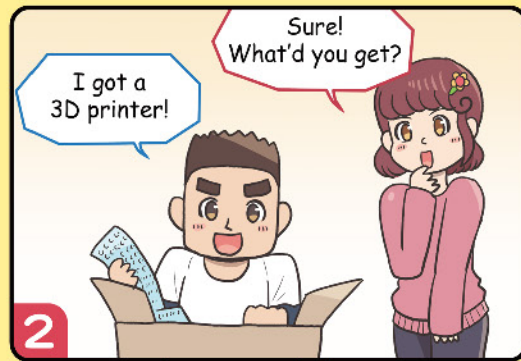
於第 3 版，原文 'In April 29th, the annual Taipei Department of Education's reading competition was held in Xinya Junior High School.' 中，'In April 29th' 應為 'On April 29th'。

網購陷阱

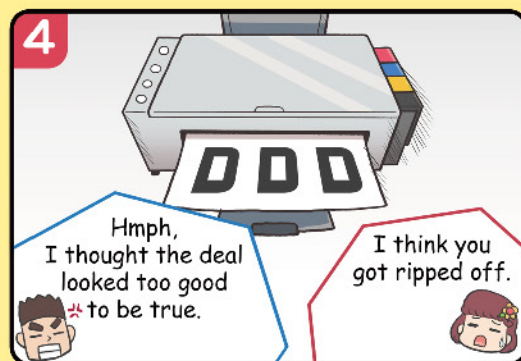
腳本 / Leila Luo 漫畫 / 瀚昇



嘿！我的包裹送達了，想看嗎？

好啊！是什麼？
一臺 3D 列印機。

呃……我不想潑冷水，但……

你應該被坑了。
難怪，我就知道天底下沒這麼好的事。

The Rest is History

貪吃小精靈另闢遊戲新戰場

古怪無害巧擒女孩心

英文 / Andrew Edmunds 圖 / 瀚昇

Today, there are thousands of video games to play, but 41 years ago on May 22nd when Pacman was released, it was ground-breaking. At the time, most arcade games were violent and all about killing aliens. Pacman was a new game that girls and couples could enjoy.

現今的電玩遊戲類型包羅萬象，但在 1980 年 5 月 22 日《小精靈》上市前可非如此。當時，多數的大型遊戲機臺多以暴力取向，總在擊殺外星人。新上市的《小精靈》帶來開創性的改變，它讓女孩和情侶們也能享受打遊戲的樂趣。