Love spinning
愛的彈力轉圈圈

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一、活動旨趣 Purpose：

在小學自然領域課程中，五年級「力與運動」的單元提到彈力的特性。生活中可以觀察到的例子，有橡皮筋等。學生可以經由活動中實際操作的過程，了解到彈力有兩種：一種是拉伸力，一種是扭轉力，當橡皮筋被拉長或扭轉時，它會產生彈力，試圖恢復到其原本狀態。

In the fifth-grade science unit "Force and movement," students learn about the concept of elasticity. Elasticity is the ability of a deformed material body to return to its original shape and size when the forces causing the deformation are removed. A rubber band is a great example in our life. Students can engage in hands-on activities to experience and understand the two types of elasticity: tensile strength and torsional strength.

二、活動器材

Materials：

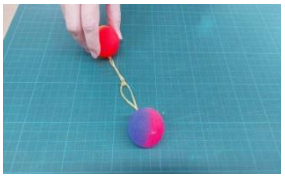
彈力球、橡皮筋

rubber bands,

bouncing balls

二、活動過程(或製作過程) Processes：

1. 手握其中一顆彈力球，開始旋轉繞圈圈。
   Hold one of the bouncing ball in your hand and start rotating around on the table.



2. 一直到橡皮筋縮短繞緊，手握緊兩顆彈力球。
   Keep rotating the ball until the rubber band is shortened and tight. And hold two balls in your hand.

3. 放開彈力球，彈力球就會不斷來回旋轉繞圈。
   Let go off the bouncing ball, it will continue to rotate back and forth in circles.

四、原理探討 Principles：

橡皮筋彈力有兩種：一種是拉伸力，一種是扭轉力。拉伸力就是把橡皮筋拉長，它有彈力要把自己縮回來；扭轉力就是把橡皮筋扭轉，它有彈力要把自己扭回來。

所以，將球不停繞圈，橡皮筋會拉長或是扭轉，放開後就會帶著兩顆彈力球扭轉往相反的方向轉動。

Rubber bands have two types of elasticity: tensile strength and torsional strength.

Tensile strength refers to the maximum amount of stress or force that a material can withstand while being stretched or pulled before breaking. Torsional strength refers to a material's ability to resist twisting forces or torques before it fails or breaks.

Therefore, the rubber band will stretch or twist when the ball is continuously circled; when released, it will twist and turn in the opposite direction with the two bouncing balls.

五、參考資料與圖片來源 Reference

[1]. https://www.njes.chc.edu.tw/w2/carnet/a1/a1.htm
[2]. 影 https://www.youtube.com/watch?v=vjbfrYP8dFs