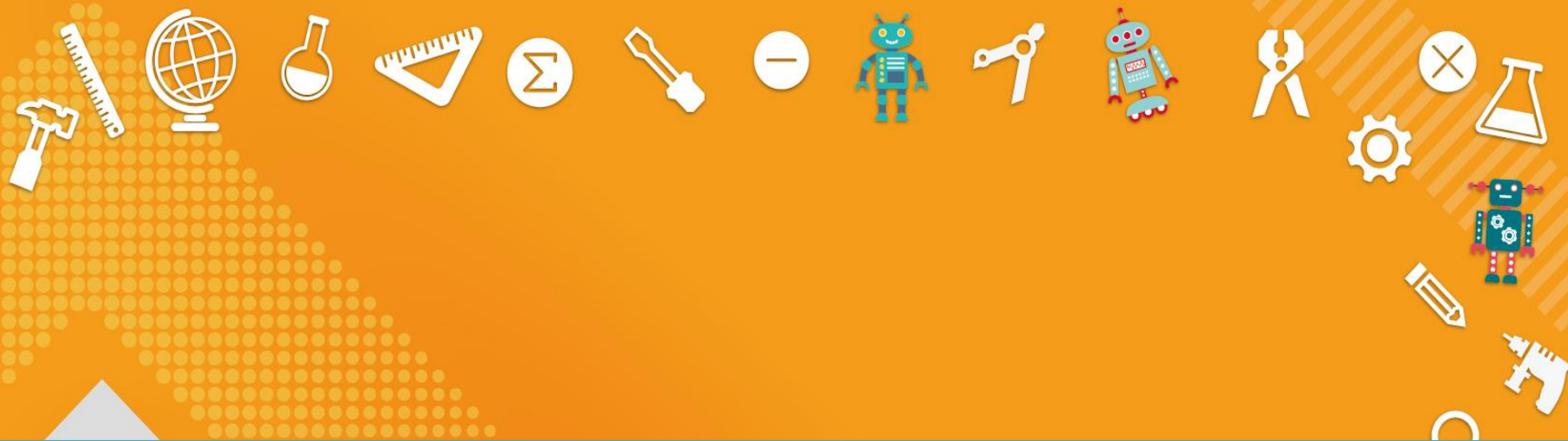
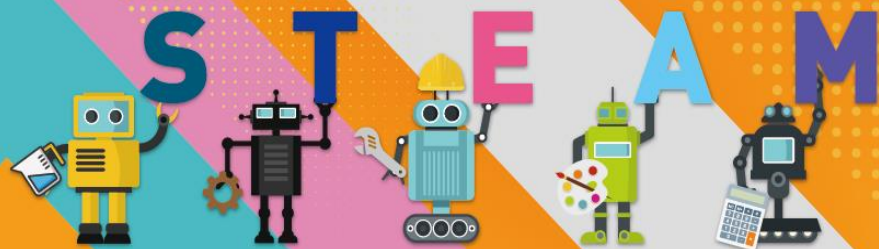




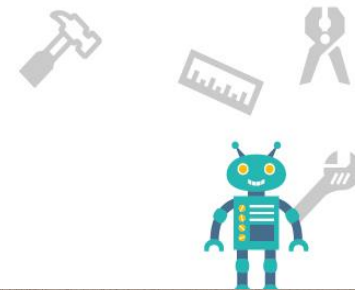
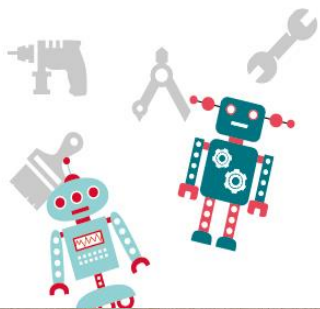
吸管機器人v2

枋寮高中科學創意團隊



FLSH
Fun Maker





材料

TT直流減速馬達(扭力1:120)



兩入3號電池盒
(附開關)



一般家庭用牙籤



3號電池兩顆



直徑6mm吸管



有斜角(較硬)

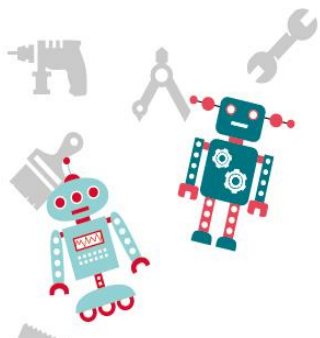
直徑5.5mm吸管



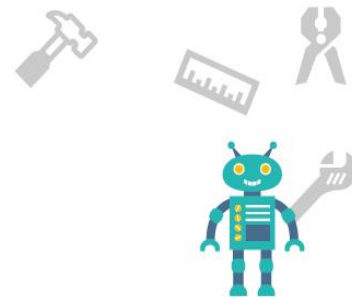
無斜角

寬度2cm冰棒棍





工具



剪刀



剥线钳



小號熱熔膠槍



尖嘴鉗

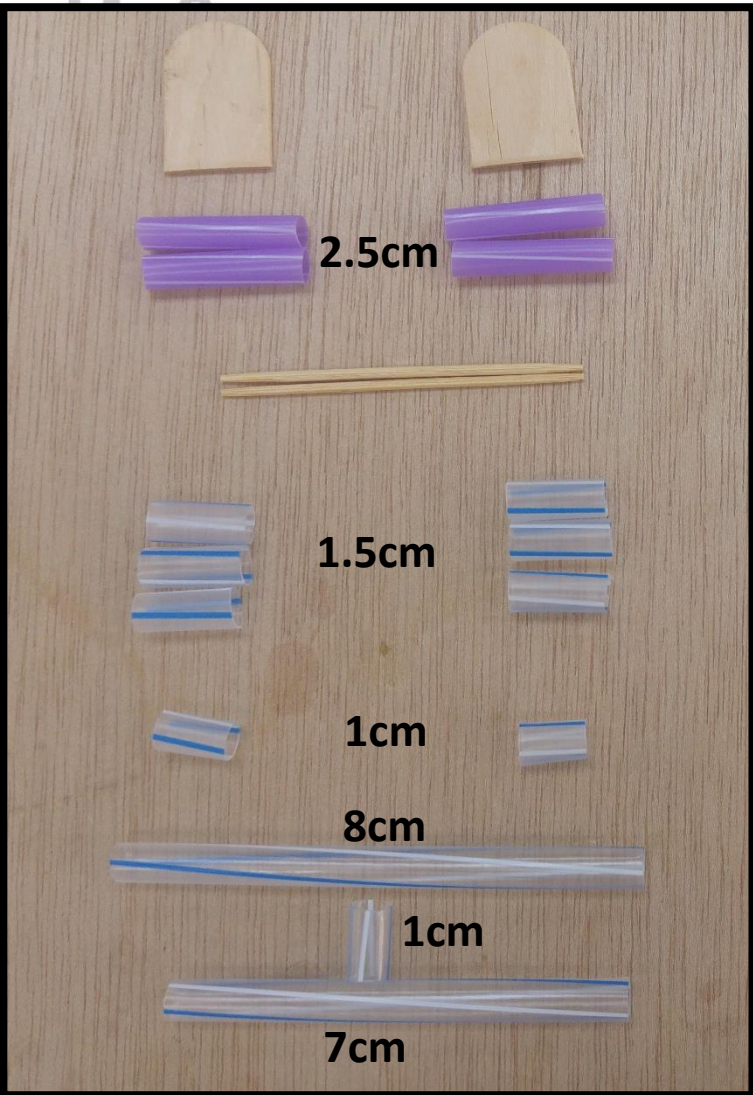


大於10cm的尺

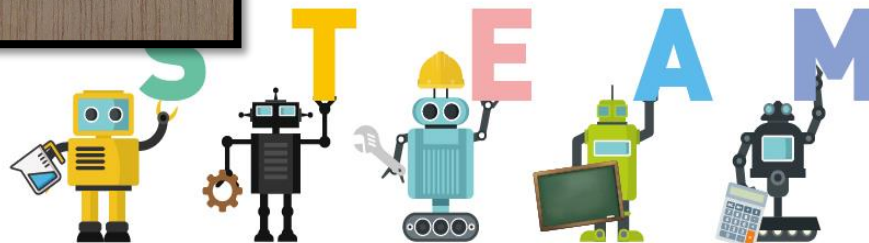


材料裁切

- 口徑較大的吸管需裁切成
 $8\text{cm} \times 1$, $7\text{cm} \times 1$, $1.5\text{cm} \times 6$, $1\text{cm} \times 3$
- 口徑較小的吸管需裁切成
 $2.5\text{cm} \times 4$
- 牙籤只要裁掉兩端尖尖的部分
- 2cm寬冰棒棍：
 $2.5\text{cm} \times 2$ (也可自由發揮)



FLSH

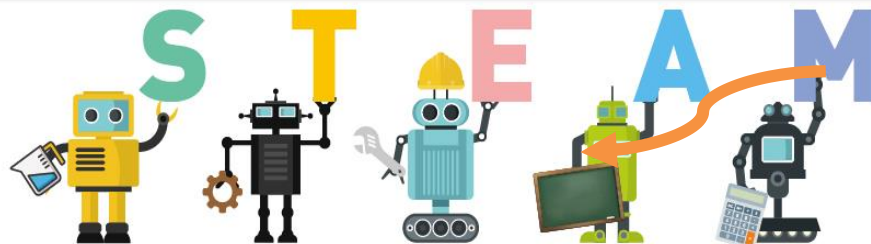


Fun Maker

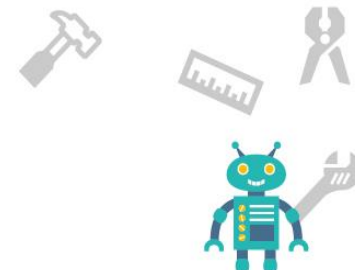
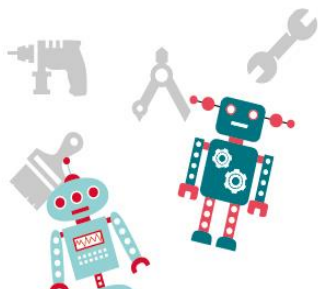
使用熱熔膠槍注意事項

1. 使用熱熔膠槍要注意被燙傷，如果沾到熱熱的膠且感覺會燙時，趕緊弄掉，並報告老師。
2. 上熱熔膠後，要把吸管固定好，最好等熱熔膠乾得差不多後，再繼續下一個動作。
3. 黏合吸管時，可以考慮在桌上排好形狀，先黏合上層，等乾了之後，再翻面黏下層。

FLSH



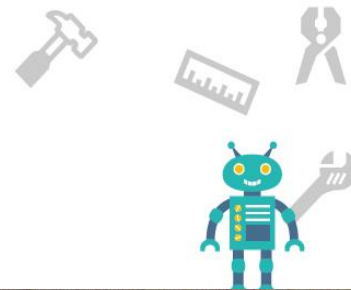
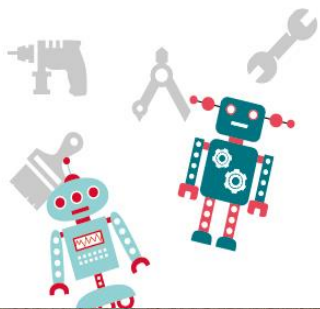
Fun Maker



黏合吸管軸心

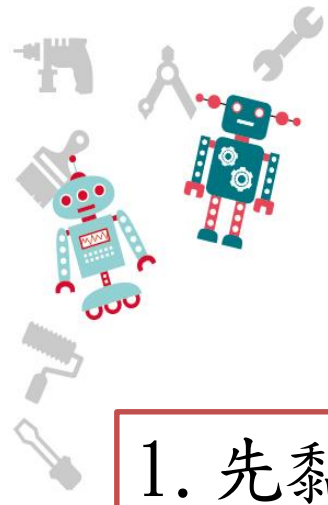
儘量一邊要
成一直線





黏合機器人的後支撐腳

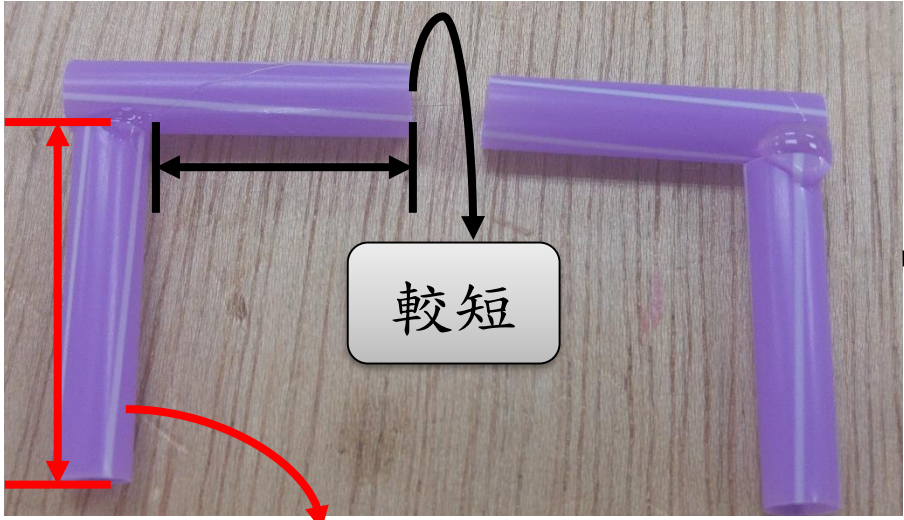




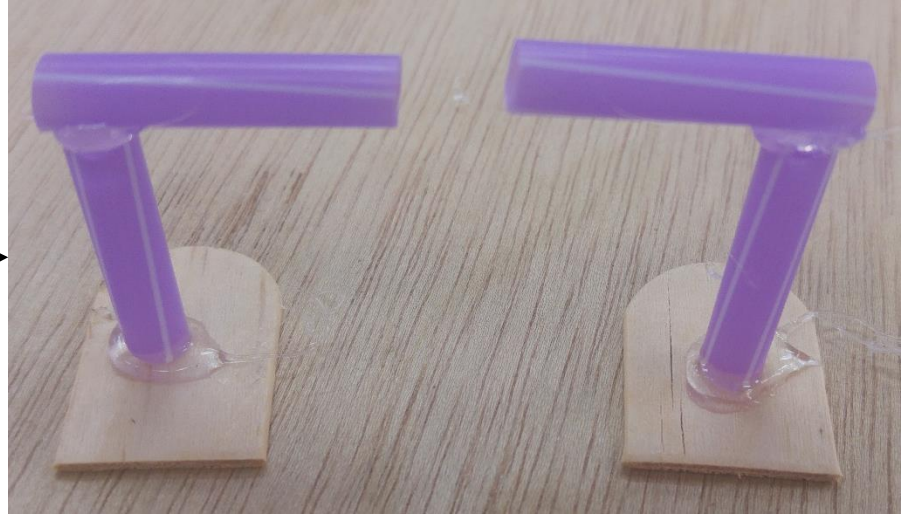
黏合機器人的前腳

1. 先黏成直角

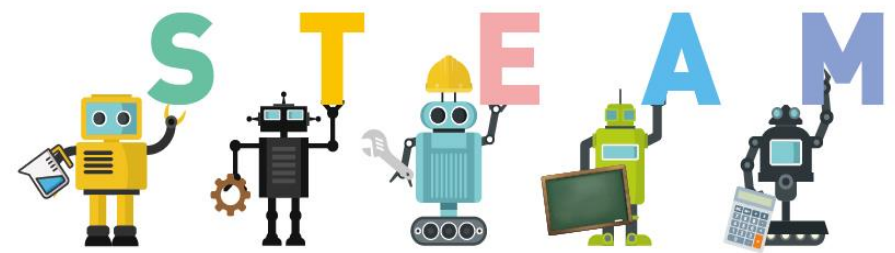
2. 較長的腳黏冰棒棍



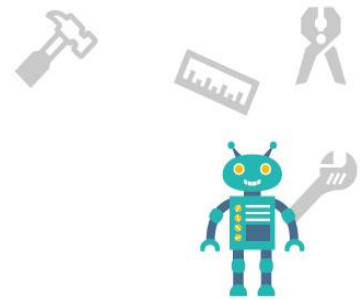
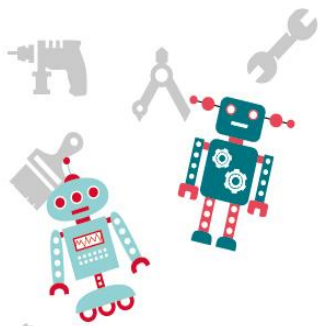
較長



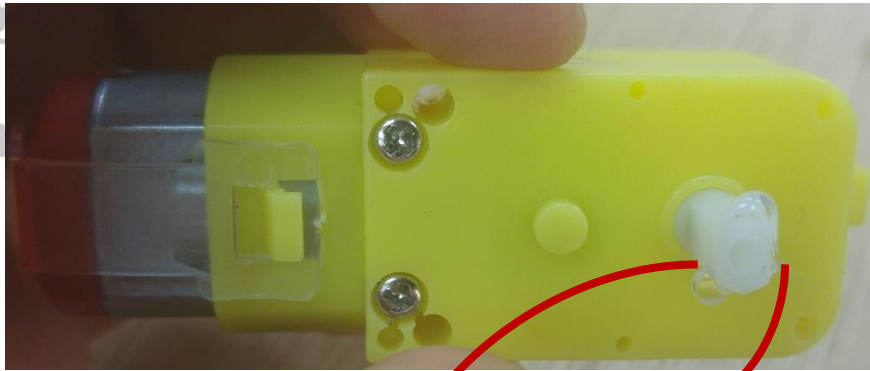
FLSH



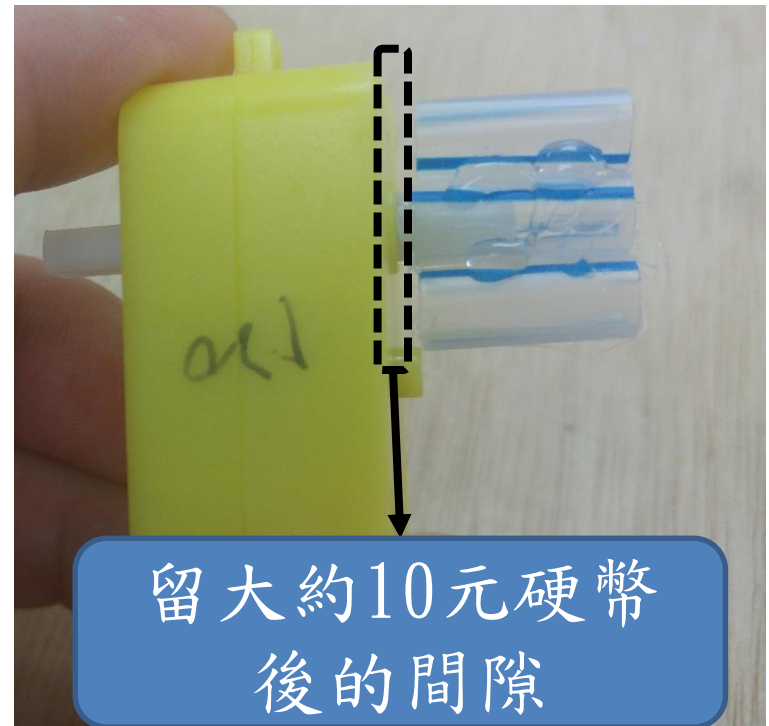
Fun Maker



吸管軸心與馬達軸心黏合

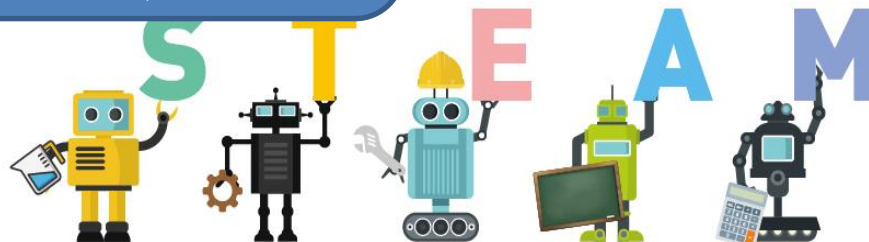


在馬達軸心平平的兩側
點一點點熱熔膠就好，
大約綠豆大小

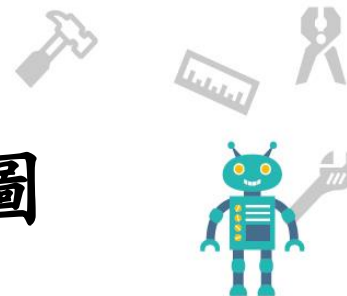
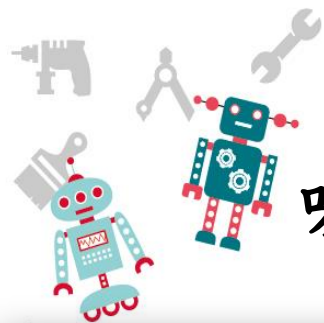


留大約10元硬幣
後的間隙

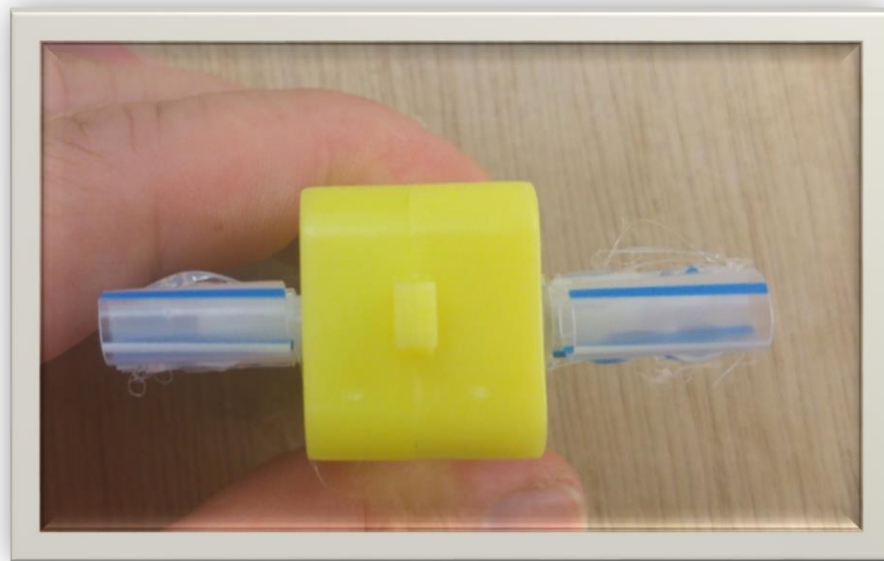
FLSH



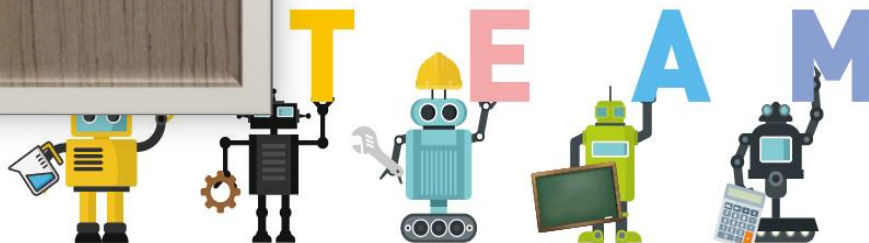
Fun Maker



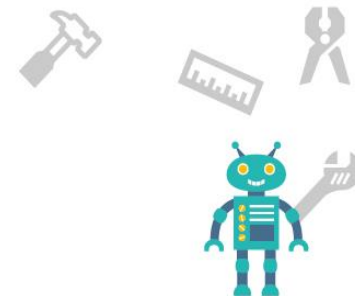
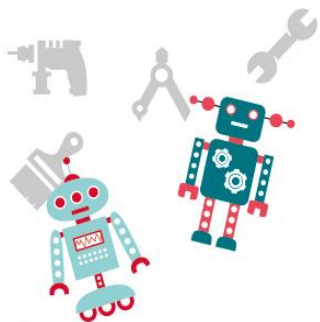
吸管軸心與馬達軸心黏合-完成圖



FLSH

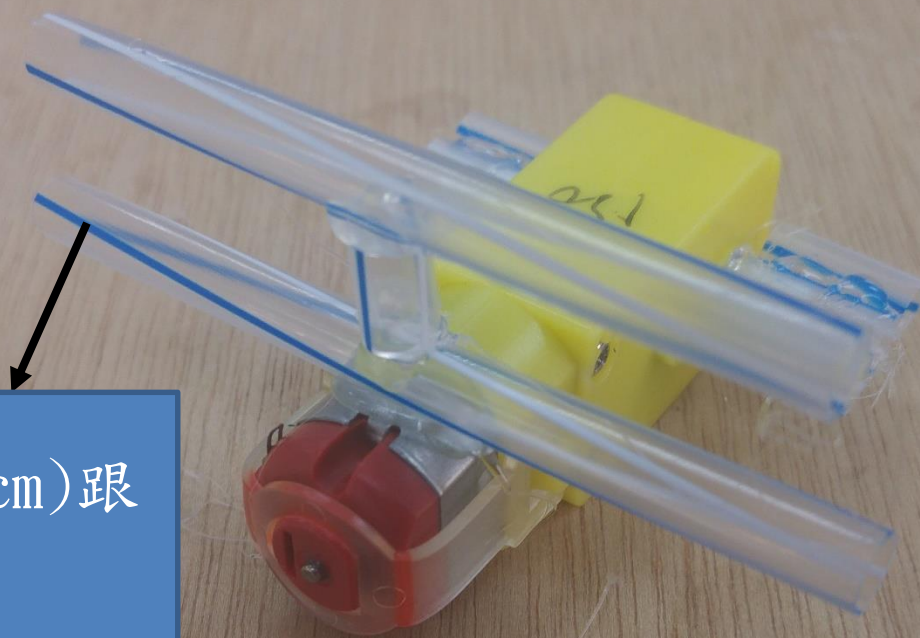


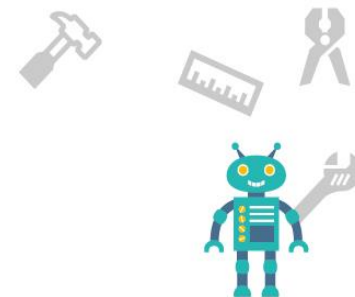
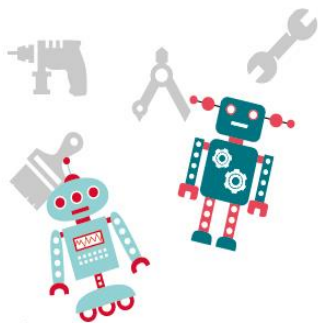
Fun Maker



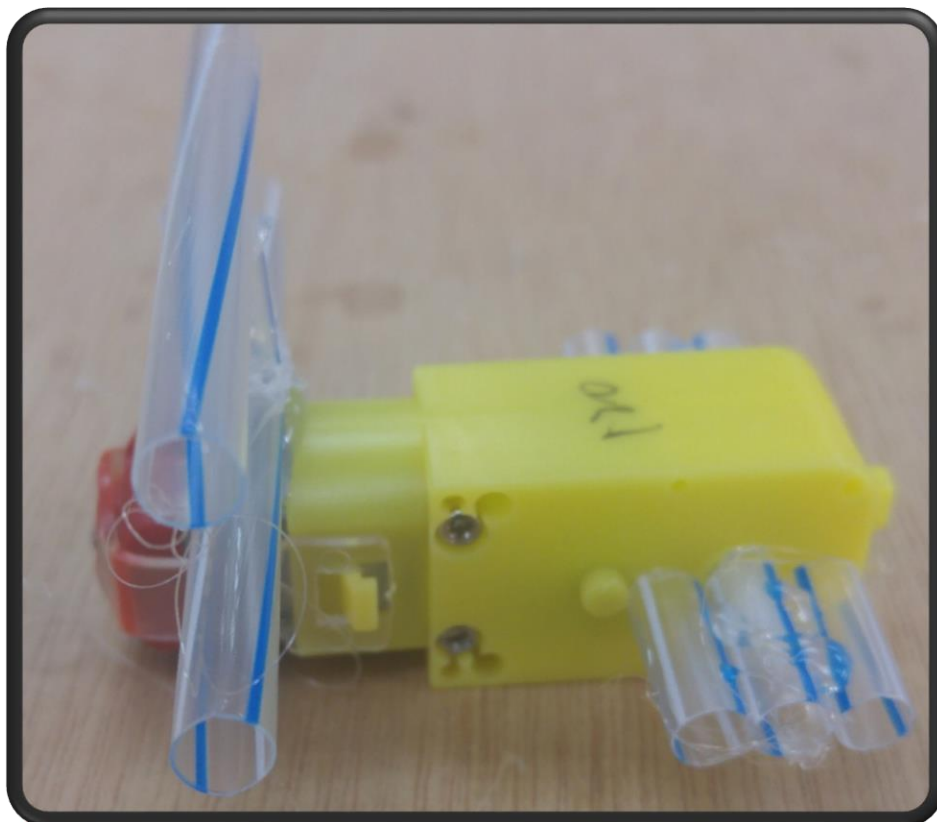
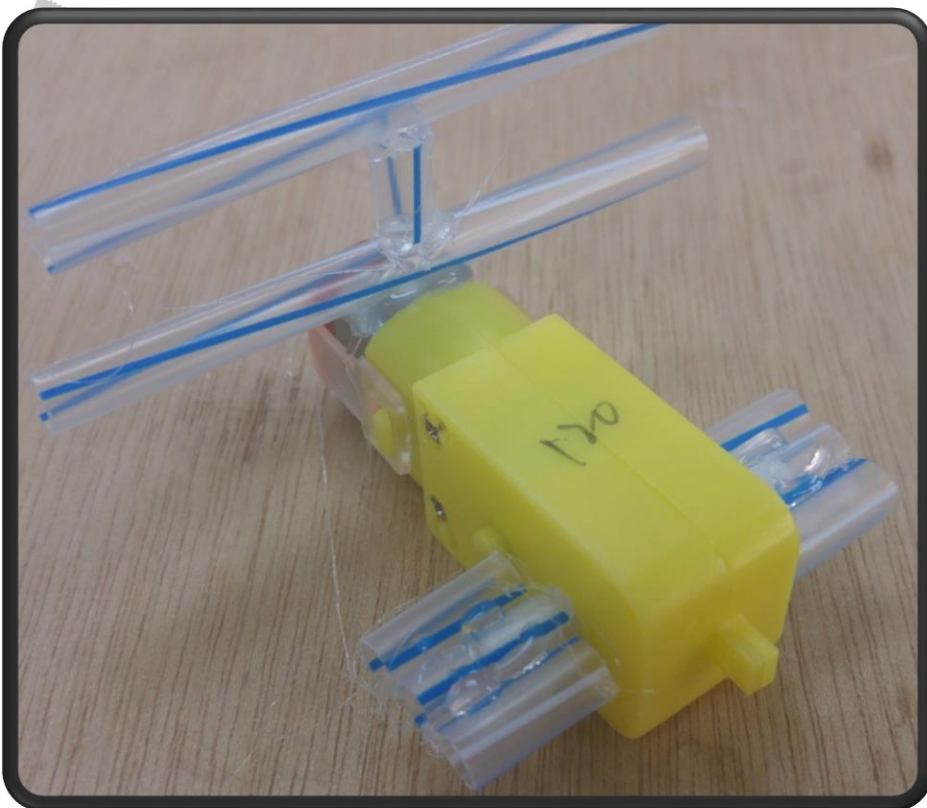
黏合後支撐腳

較長的吸管(8cm)跟
馬達黏合

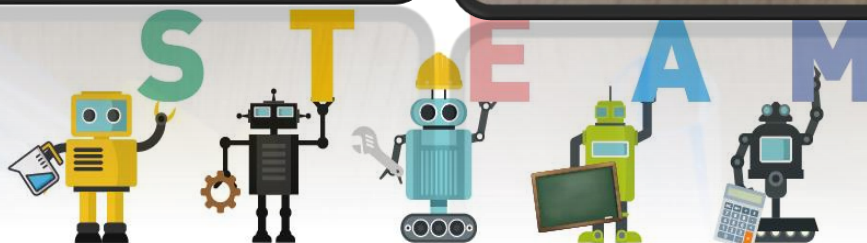




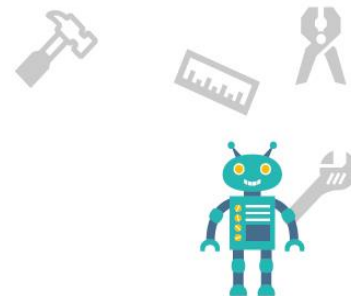
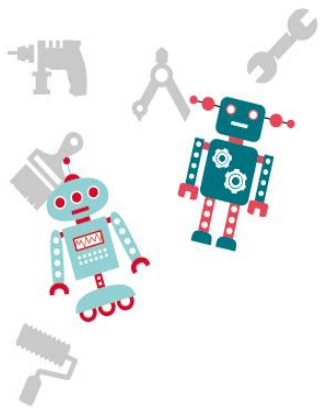
後支撐腳-完成圖



FLSH

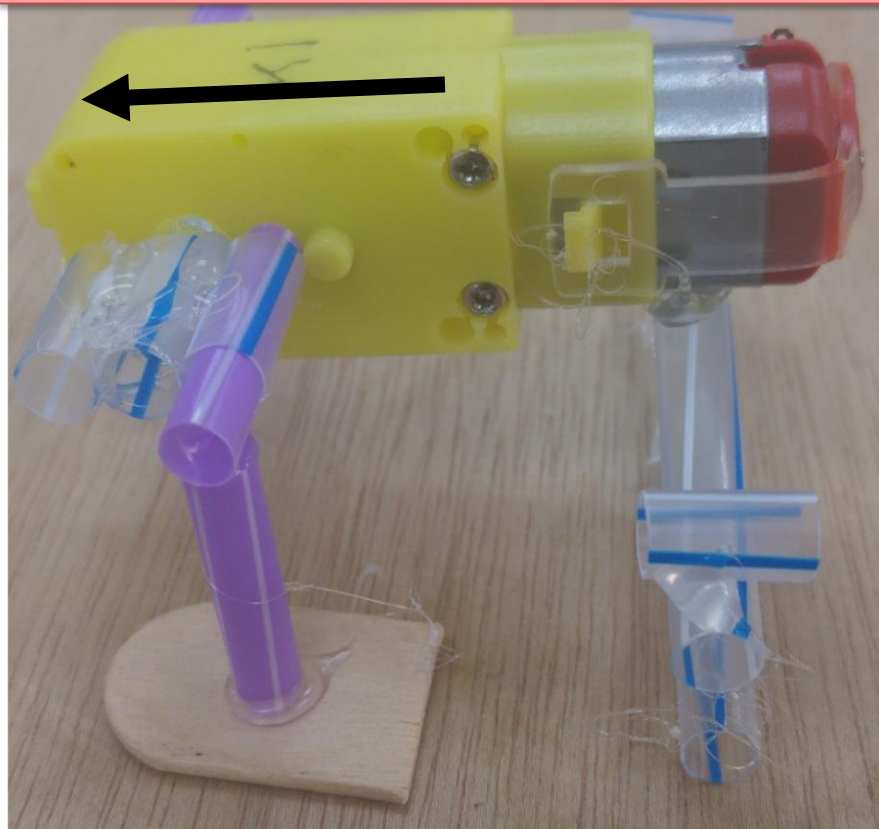


Fun Maker

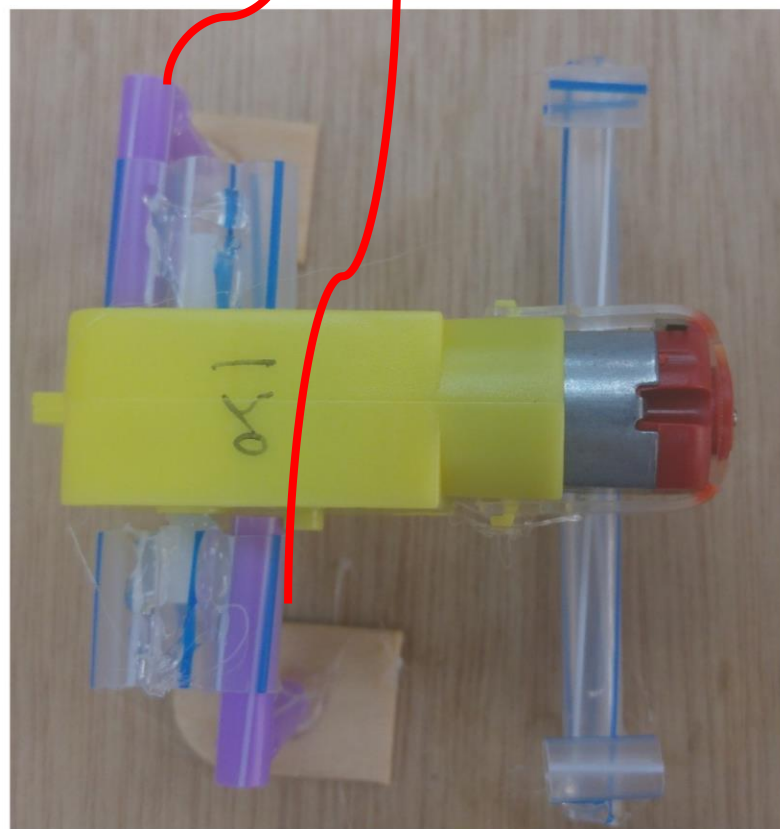


裝上前腳

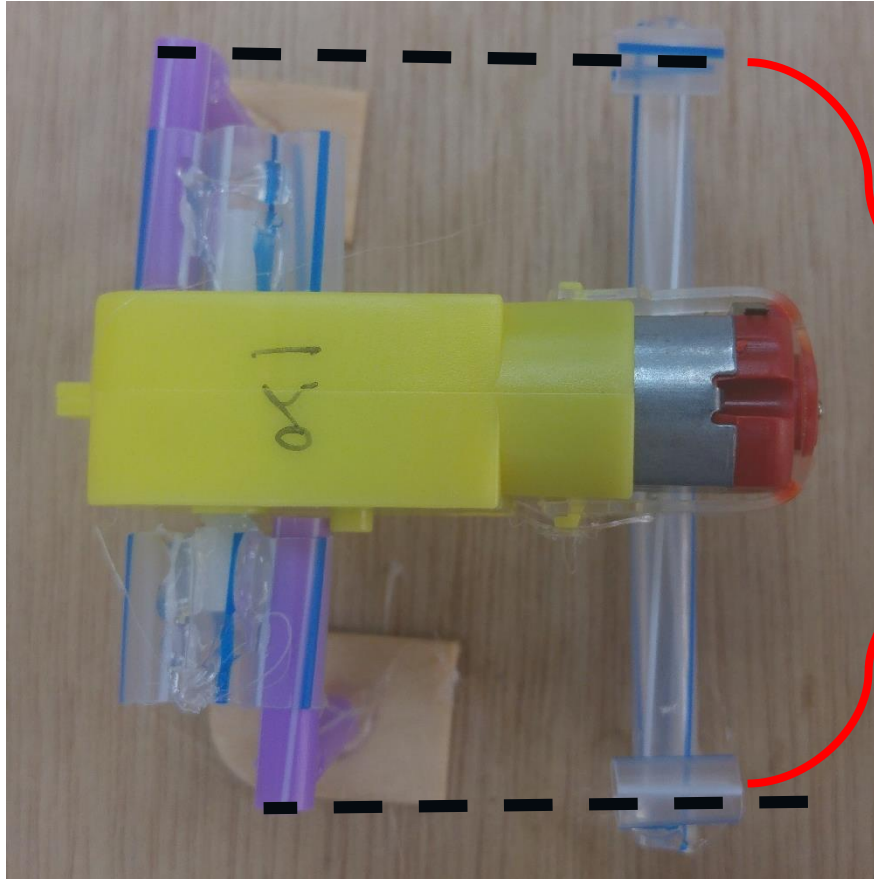
箭頭方向是機器人的前面



兩隻腳要一前一後



黏合支撐牙籤的吸管

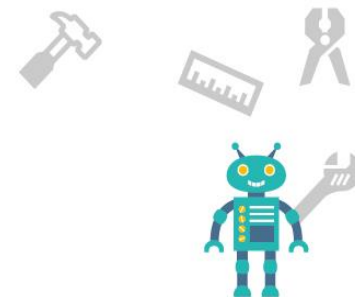
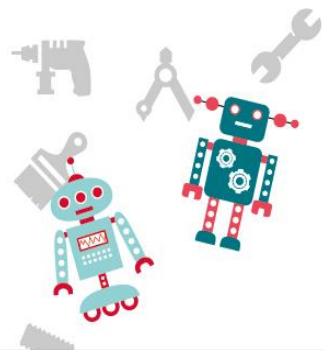


稍微對準一下之後要黏合牙籤的方向(這裡用虛線表示)

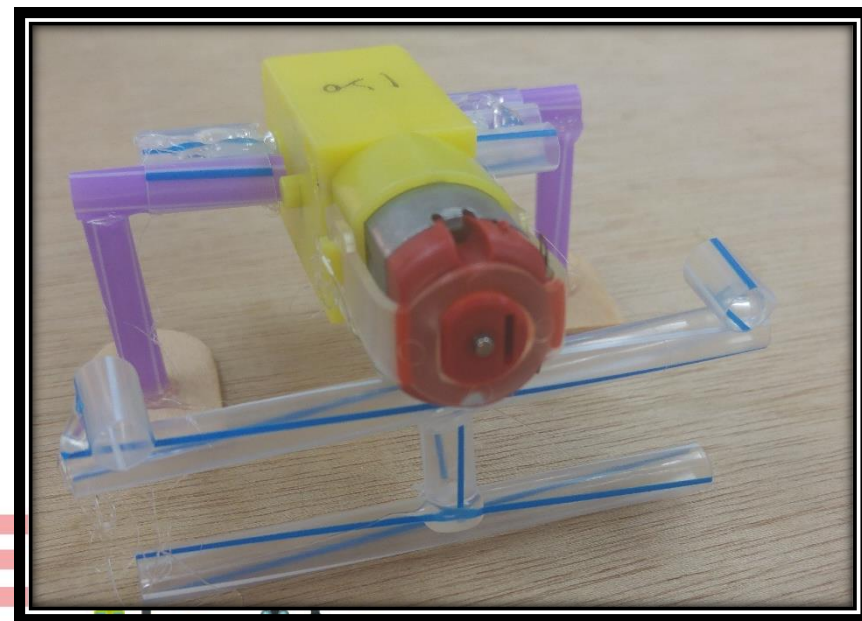
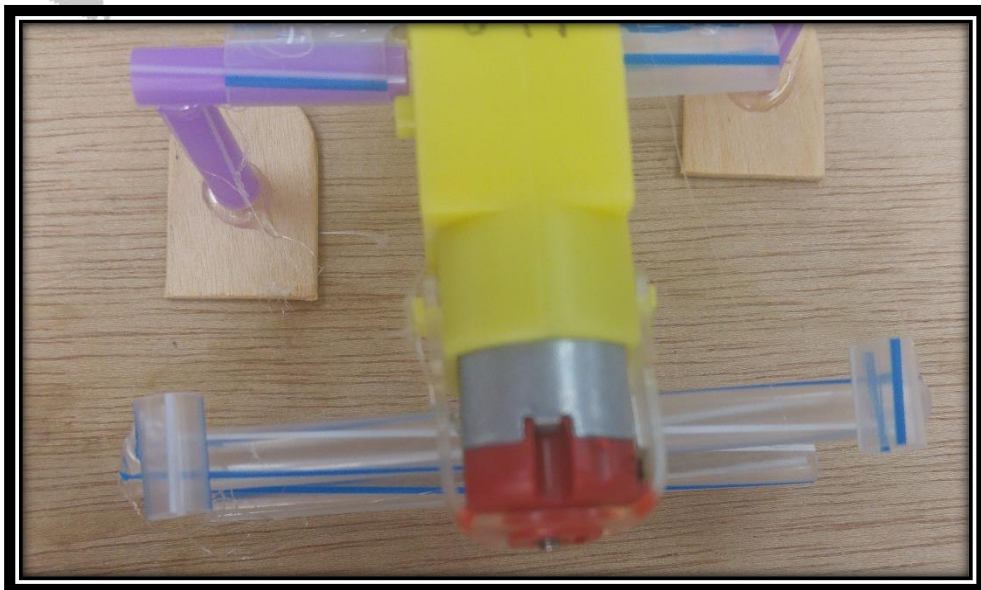
FLSH



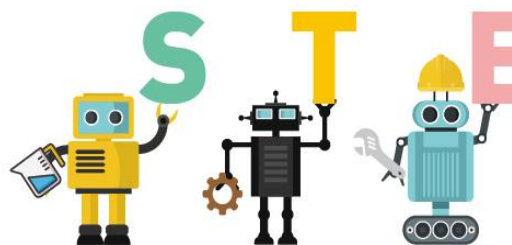
Fun Maker



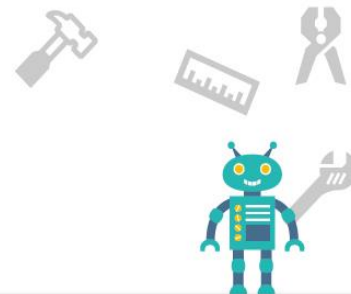
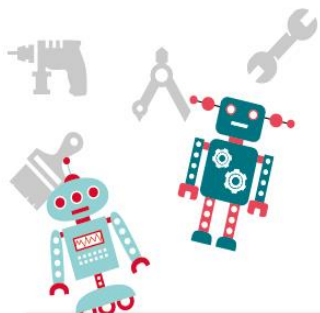
黏合支撐牙籤的吸管-完成圖



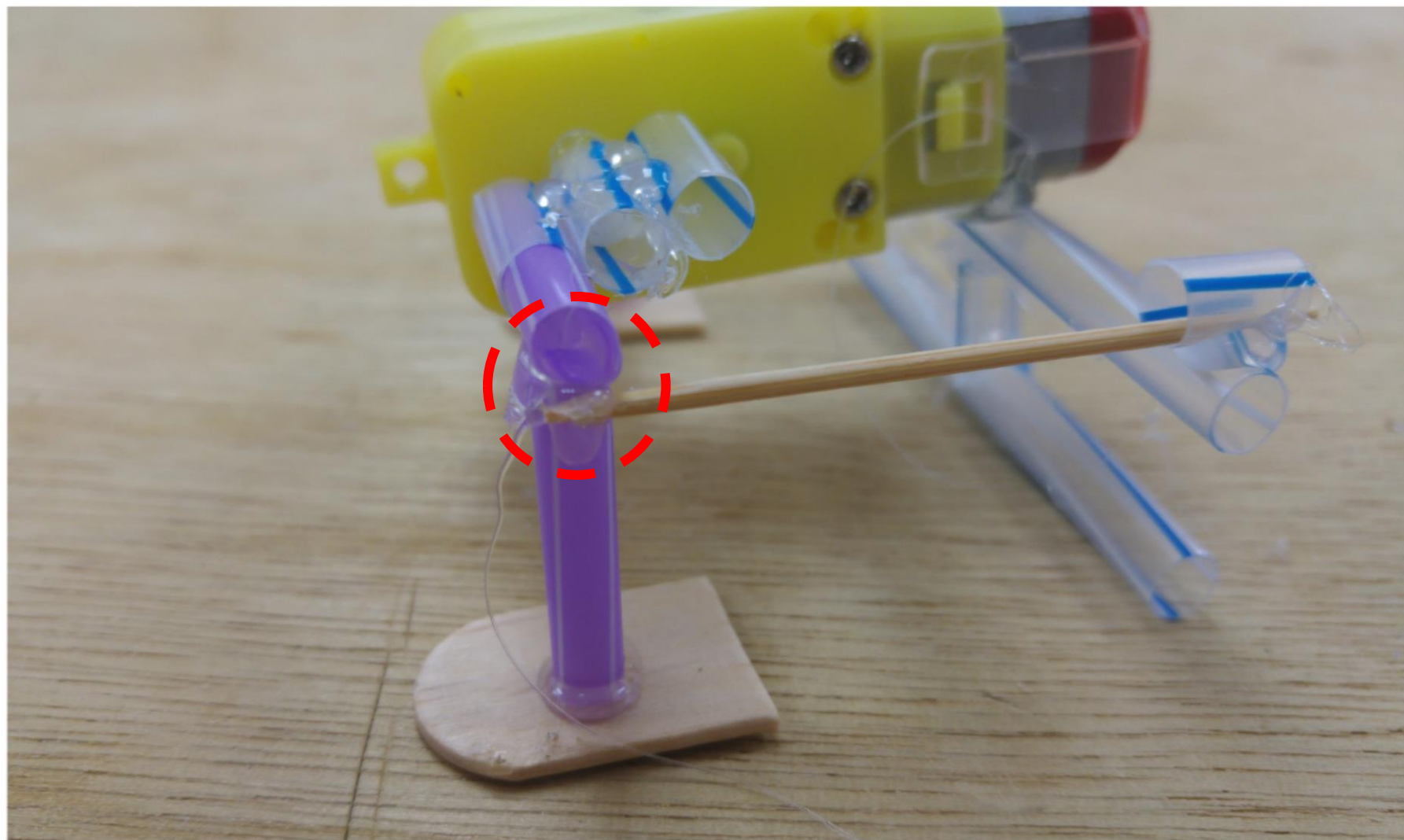
FLSH

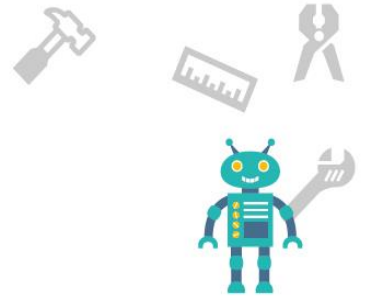
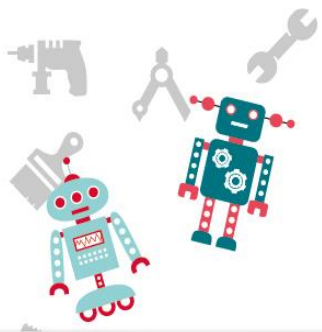


Fun Maker

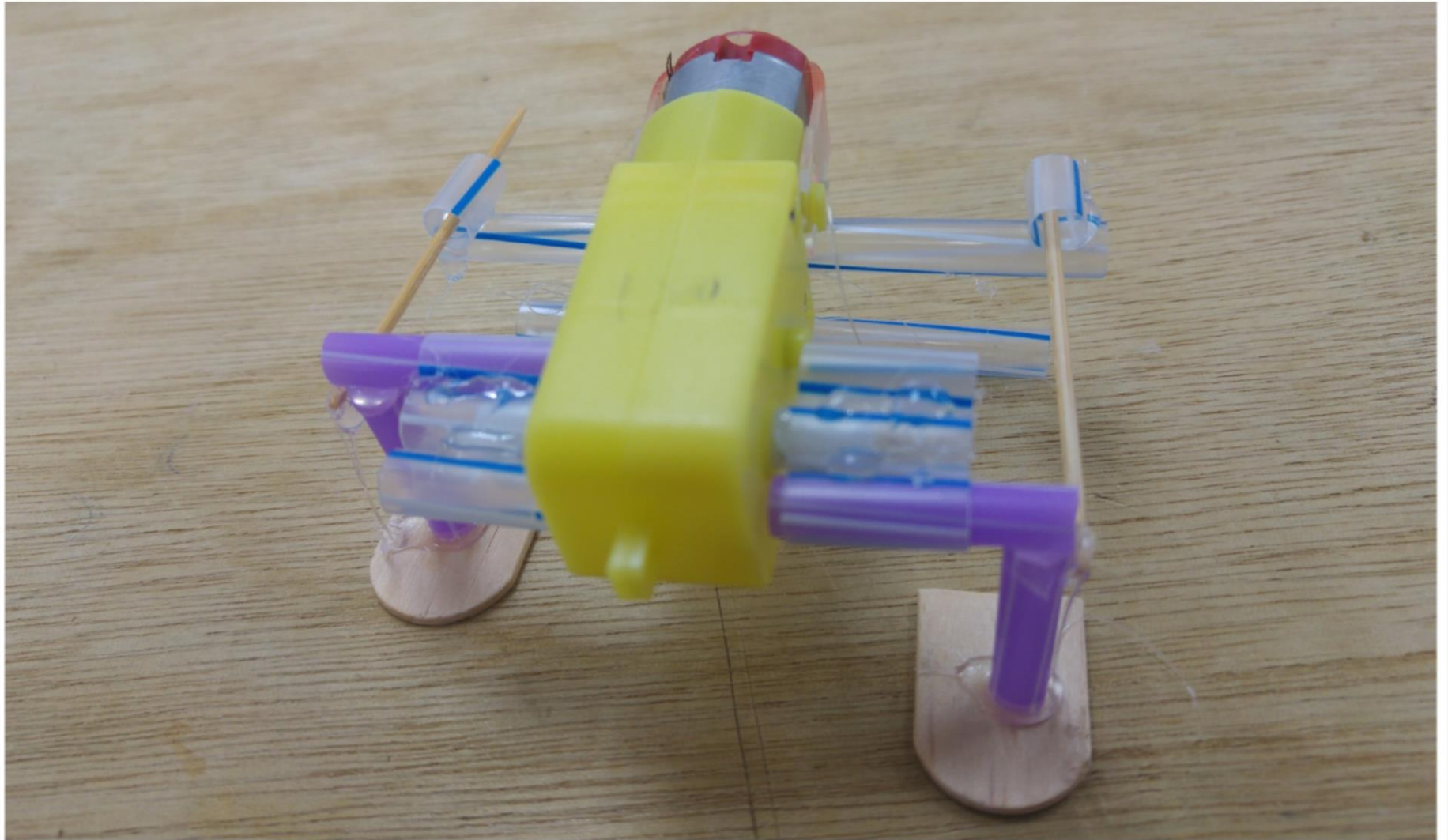


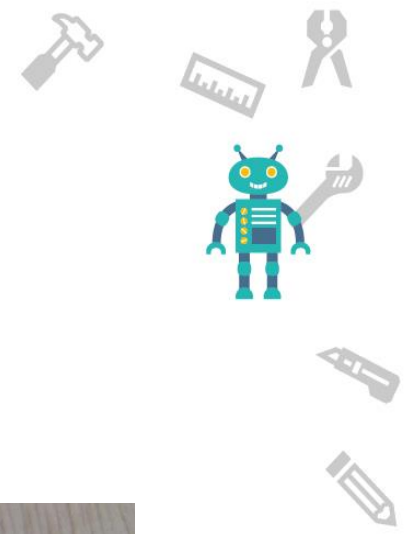
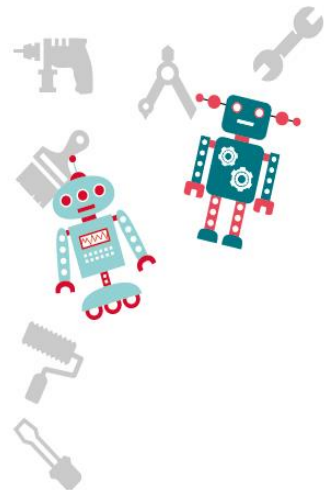
黏合牙籤和前腳





黏合牙籤和前腳-完成圖





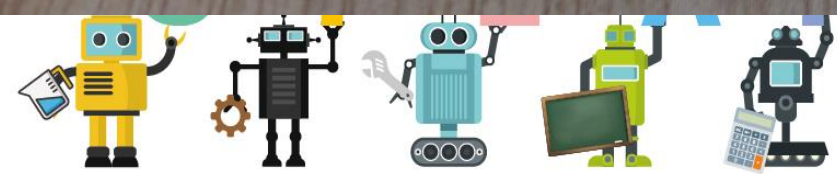
剥線鉗介紹

由粗到細

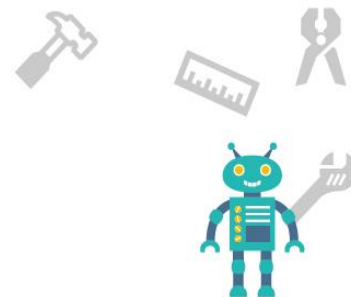
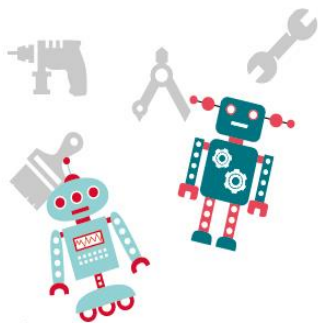


剥最細的電線

FLSH



Fun Maker



如何使用剝線鉗

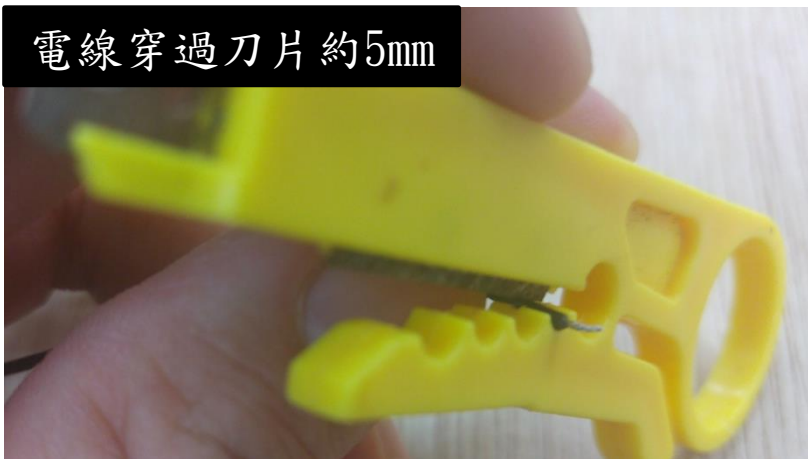
穿過最細的孔



電線要穿過去

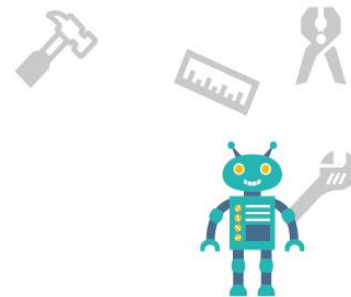
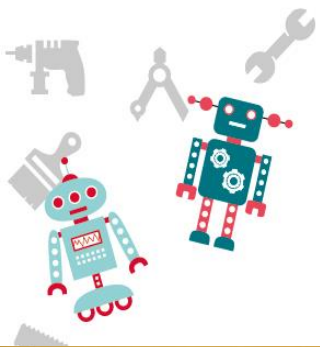


電線穿過刀片約5mm

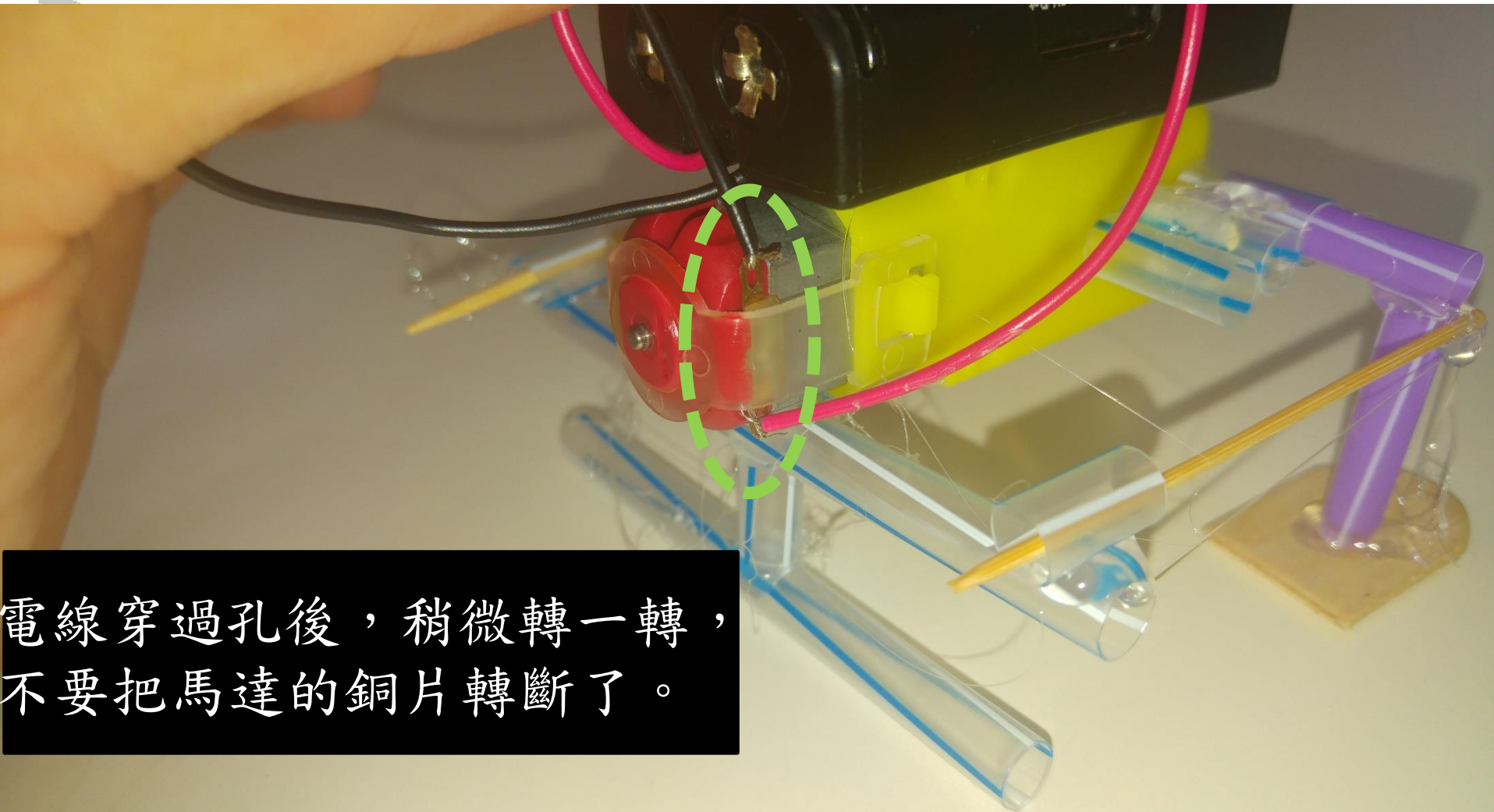


一手抓住電線一手壓剝線鉗，拉開

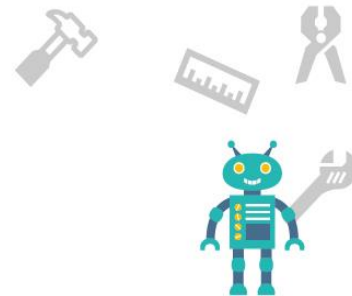
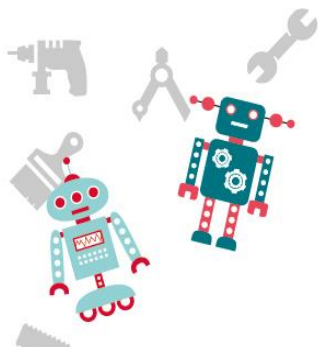




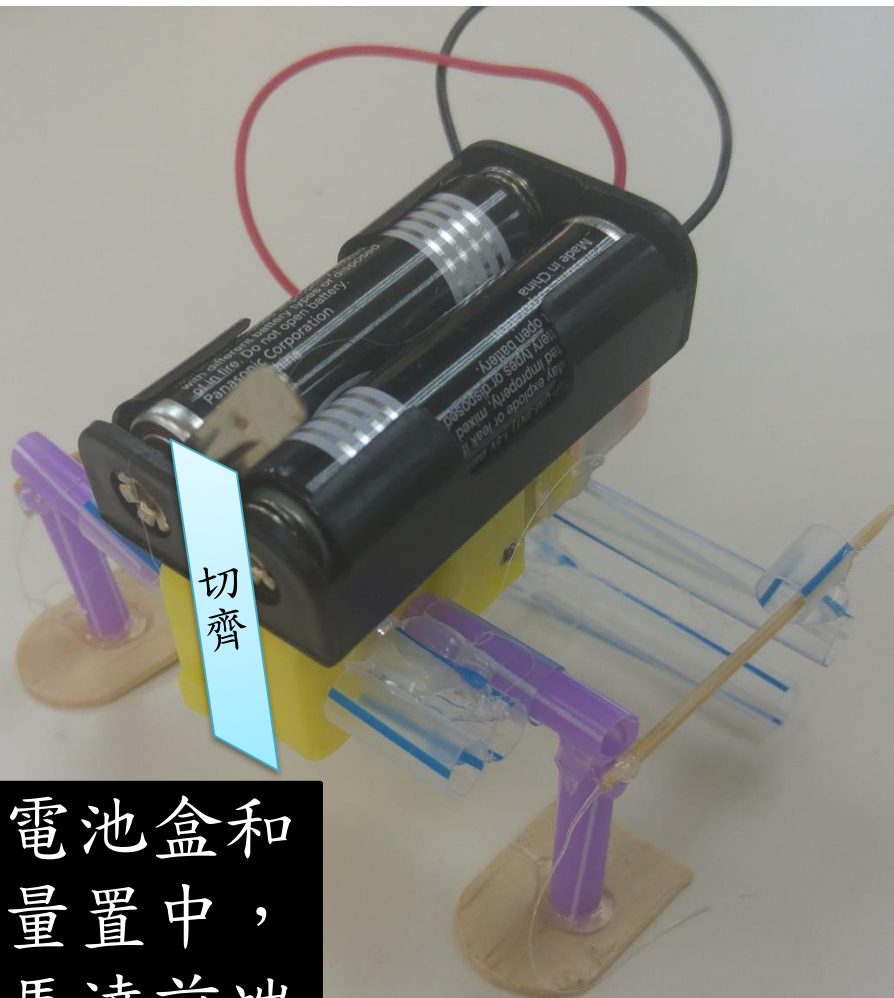
電池盒電線穿過馬達銅片的孔



電線穿過孔後，稍微轉一轉，
不要把馬達的銅片轉斷了。



吸管機器人完成



熱熔膠槍直接年和電池盒和馬達，左右位置儘量置中，有開關的前緣對齊馬達前端