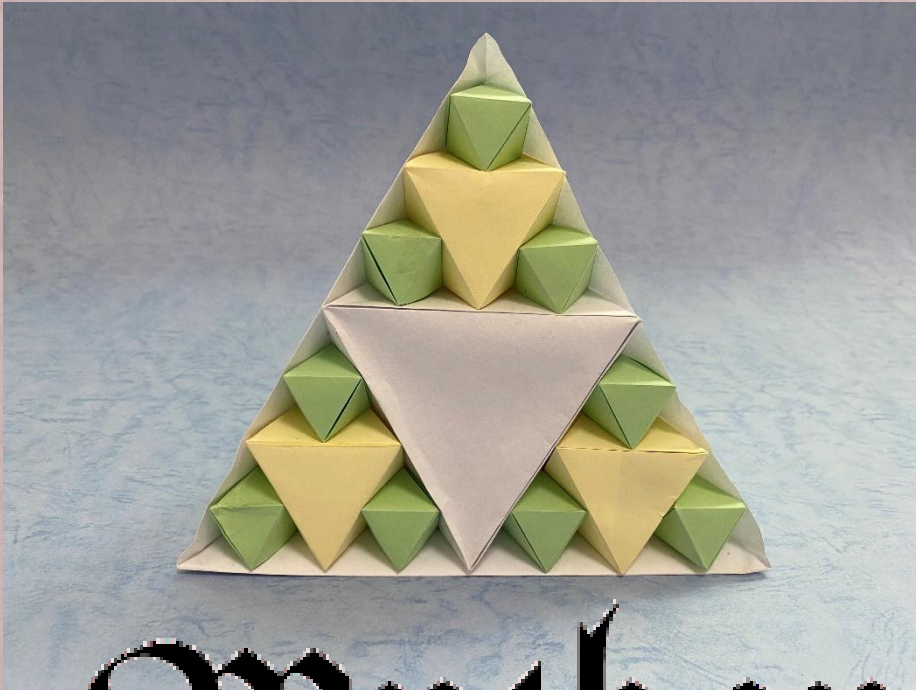


謝爾賓斯基三角形 碎形等比變化



講師

台南市數學輔導團

台南市建興國中

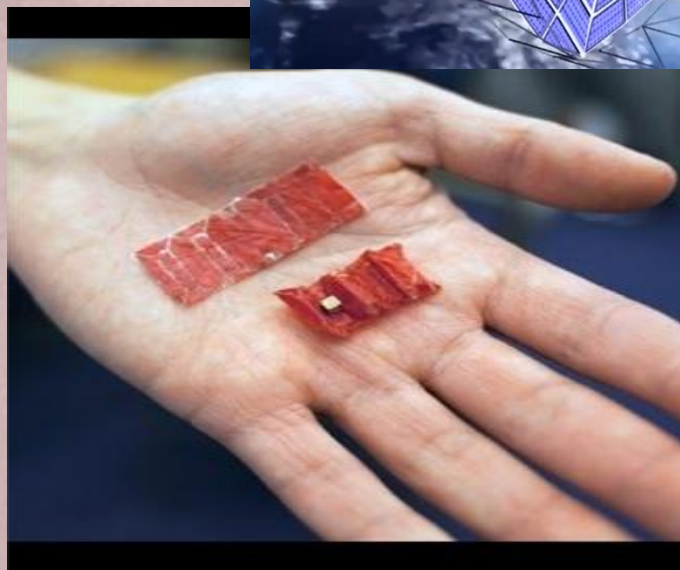
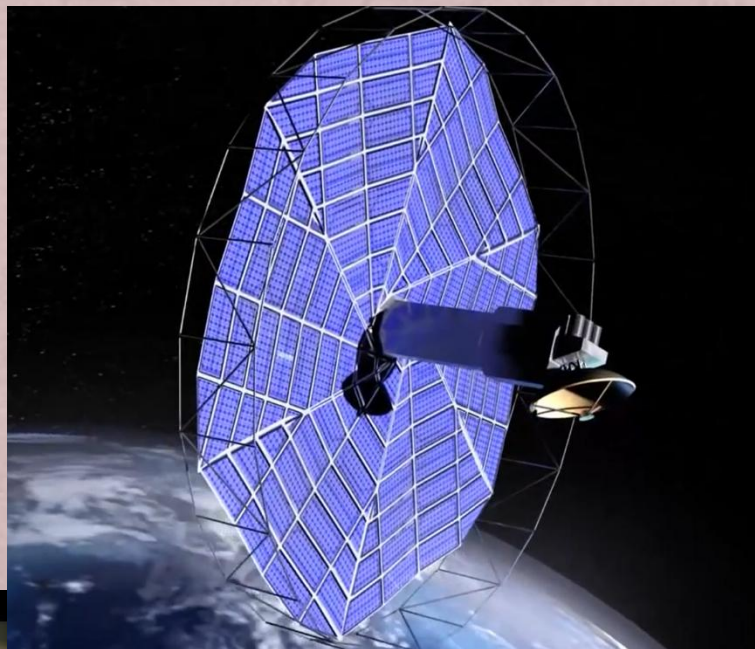
高國祥 老師

Mathematics

數學
摺學

淺談摺紙應用

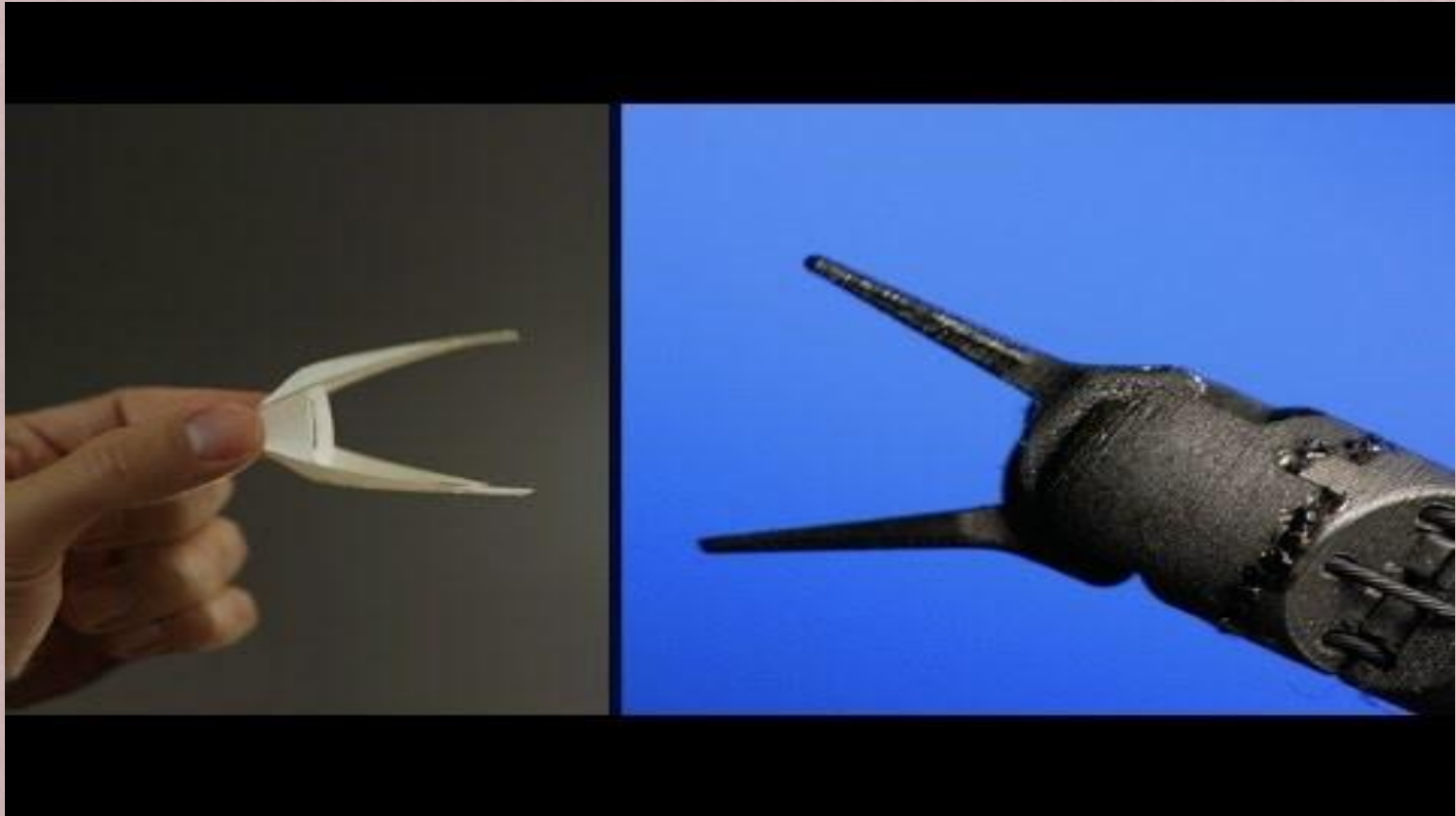
摺紙與航太
摺紙與醫療
摺紙與運輸
摺紙與建築
摺紙與包裝
摺紙與燈飾
摺紙與服裝



摺紙在航太的應用



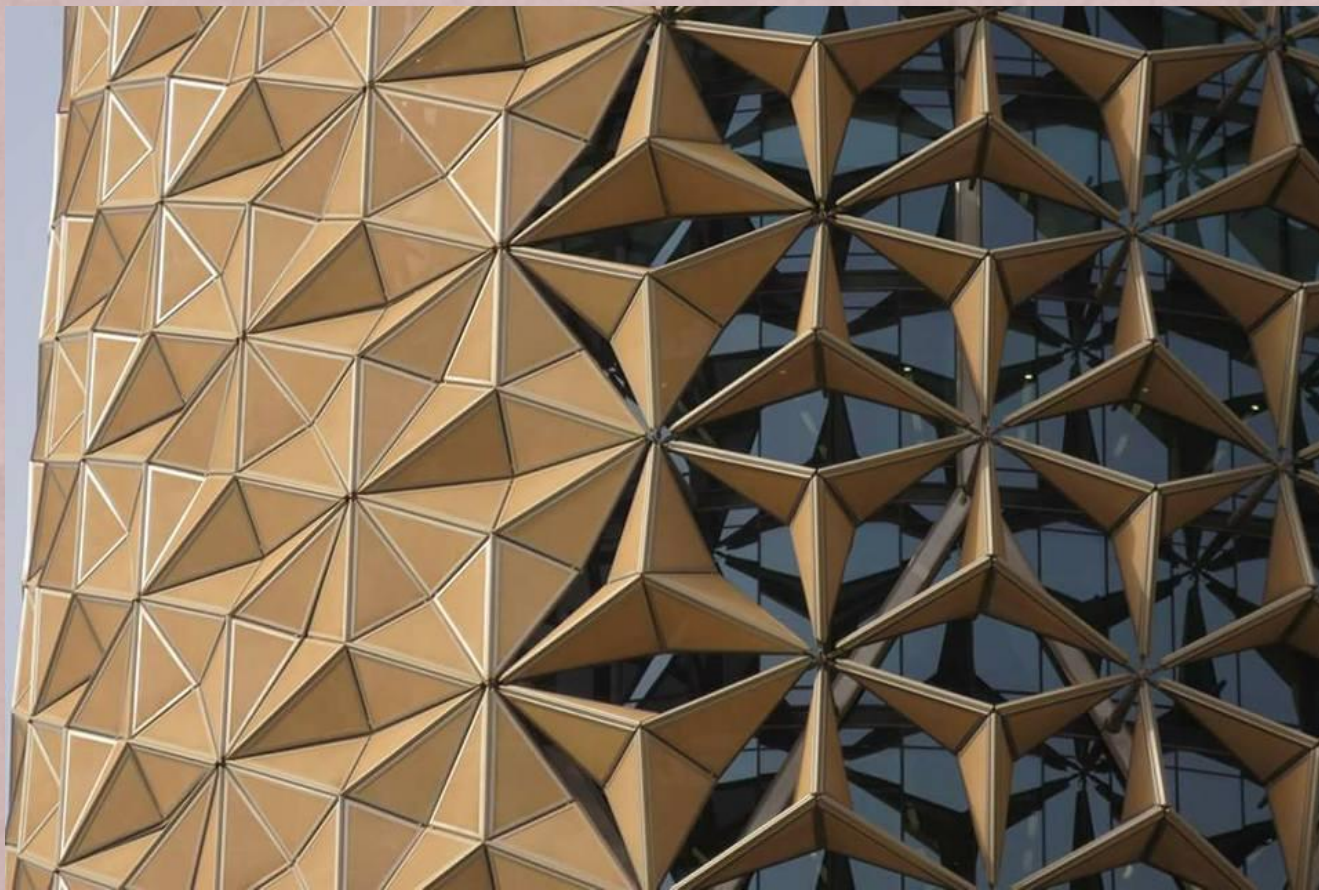
摺紙在醫療的應用



摺紙在運輸的應用



摺紙在建築的應用



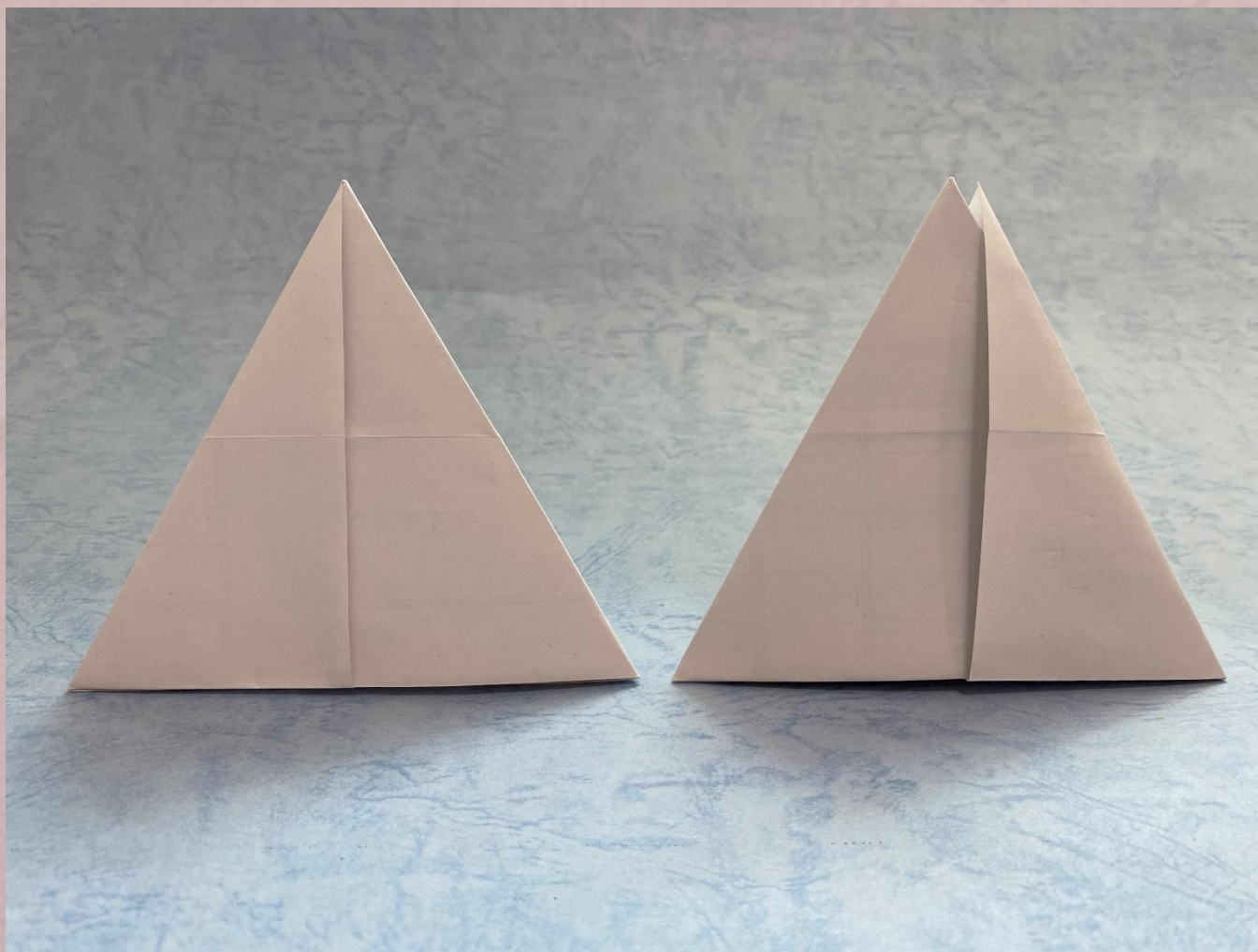
摺紙在生活的應用



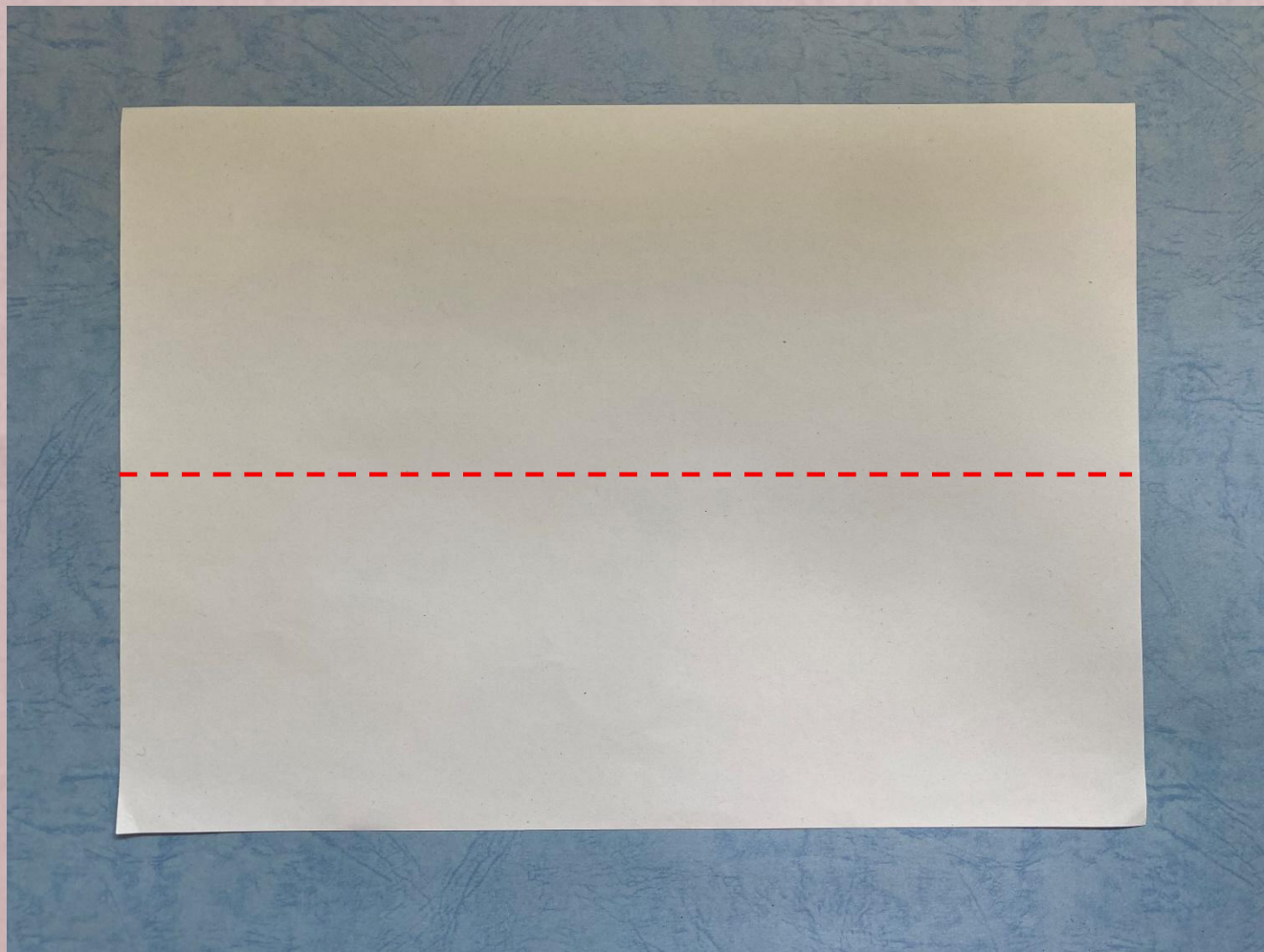
摺紙在生活的應用



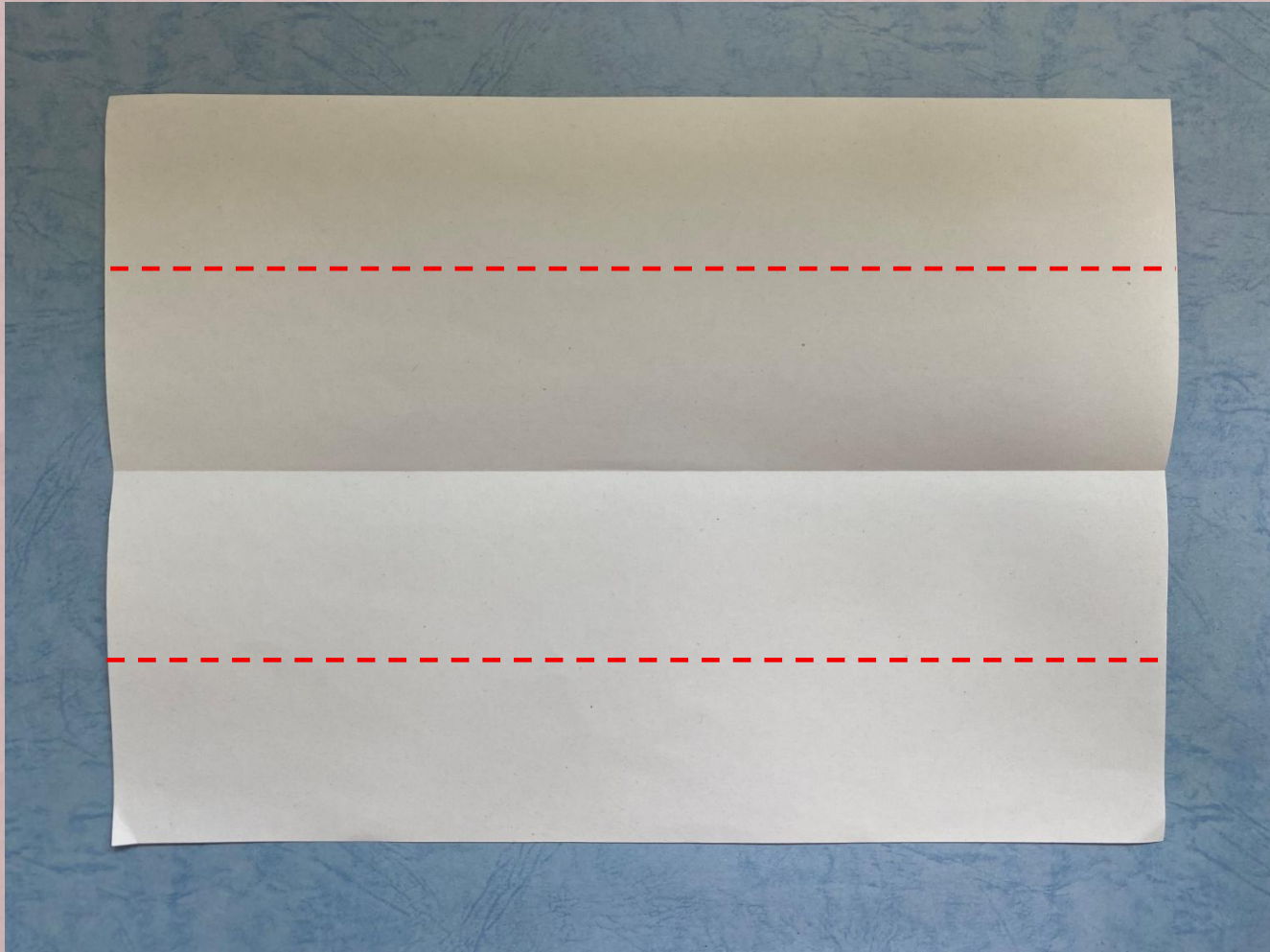
正四面體



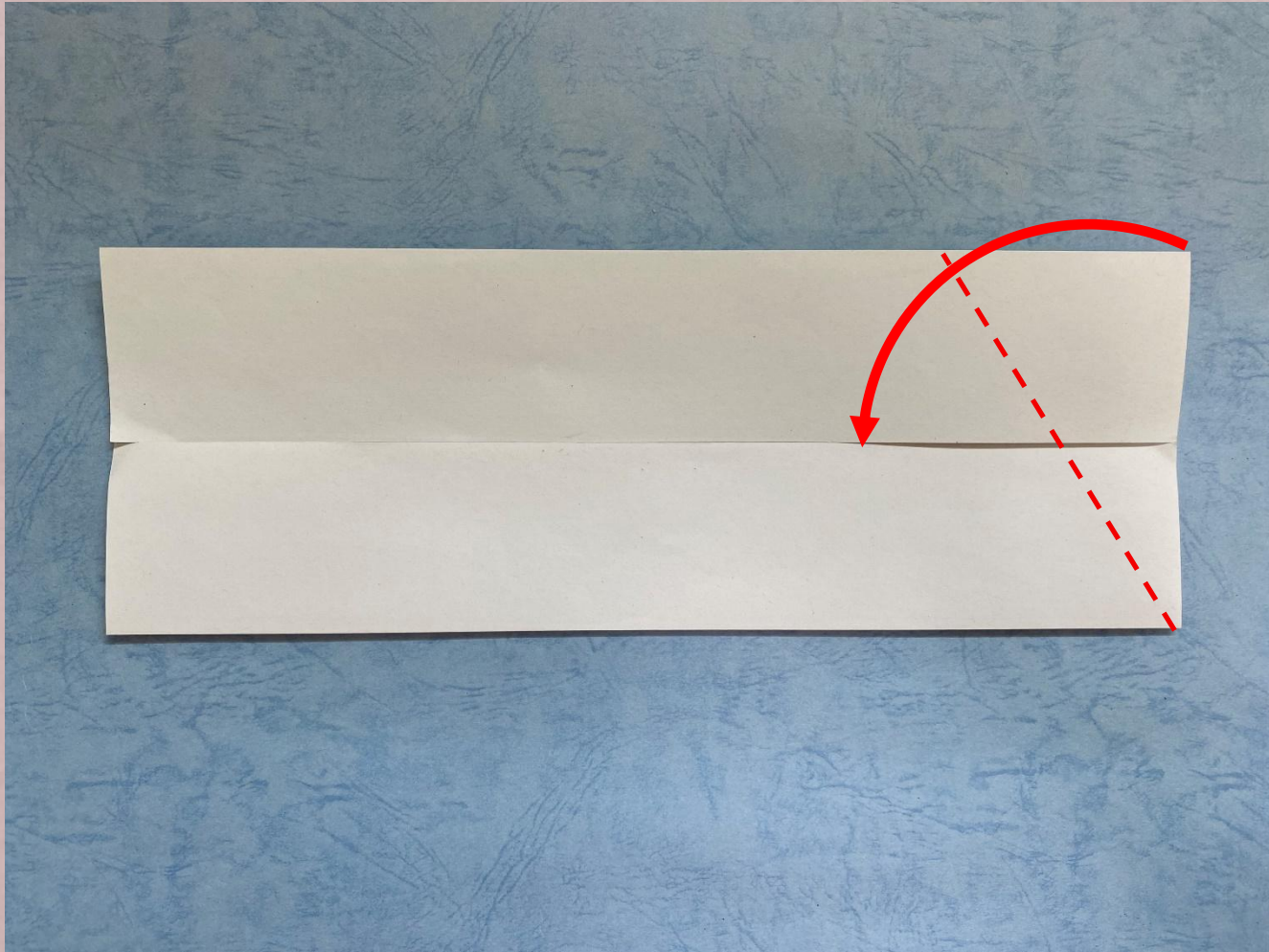
中間對摺打開



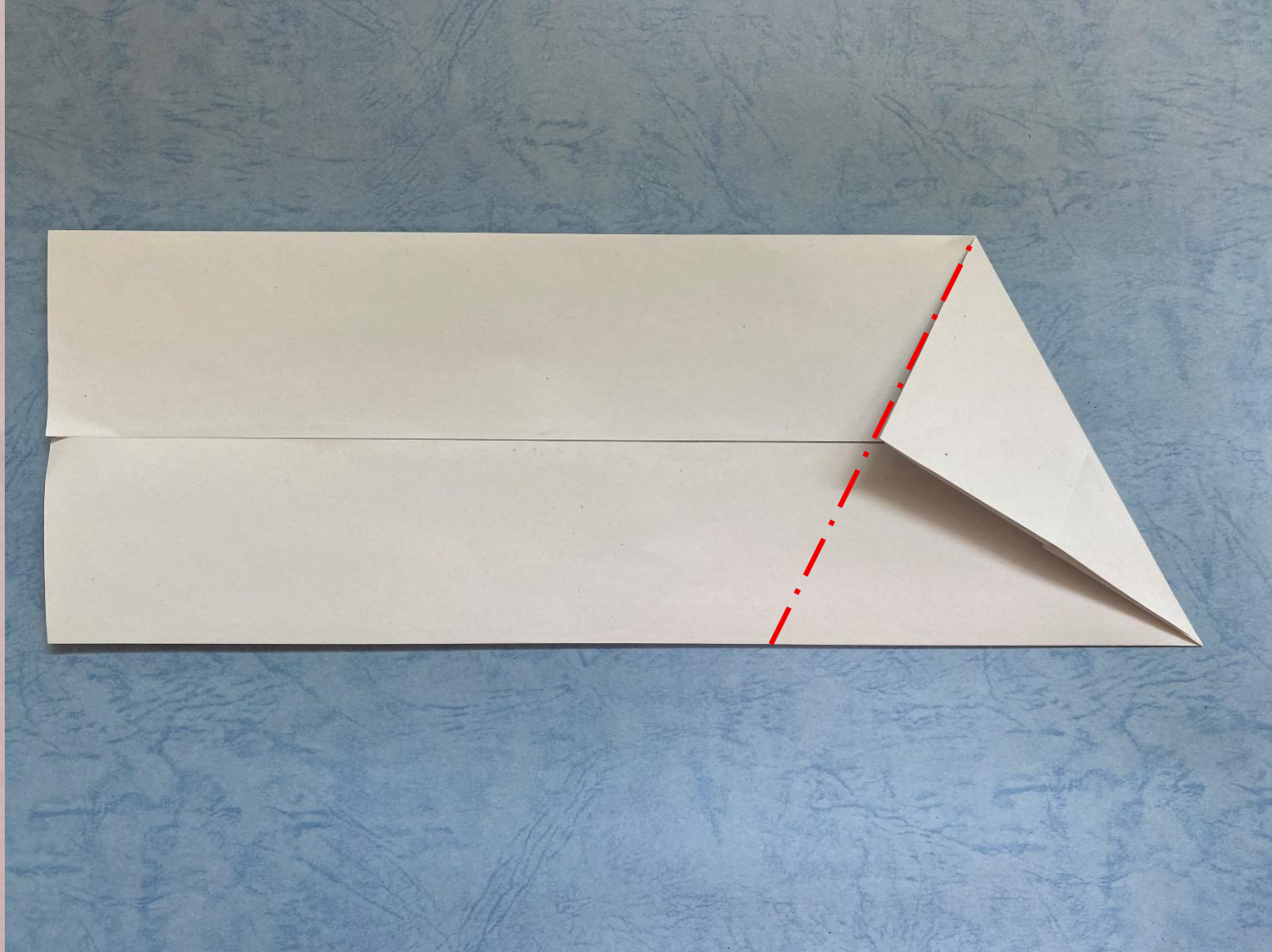
將上下兩側摺至中間



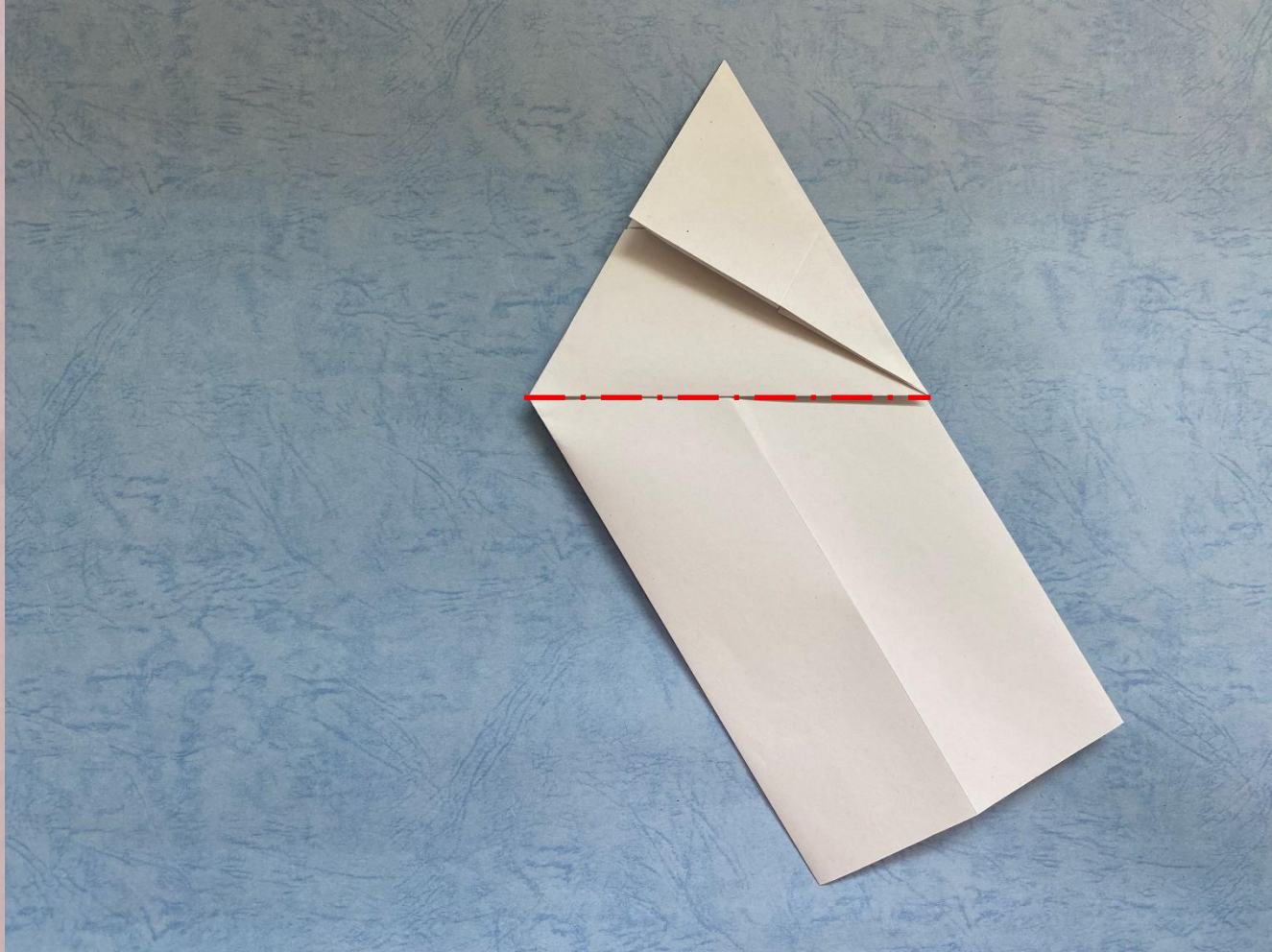
將右上摺至中間線



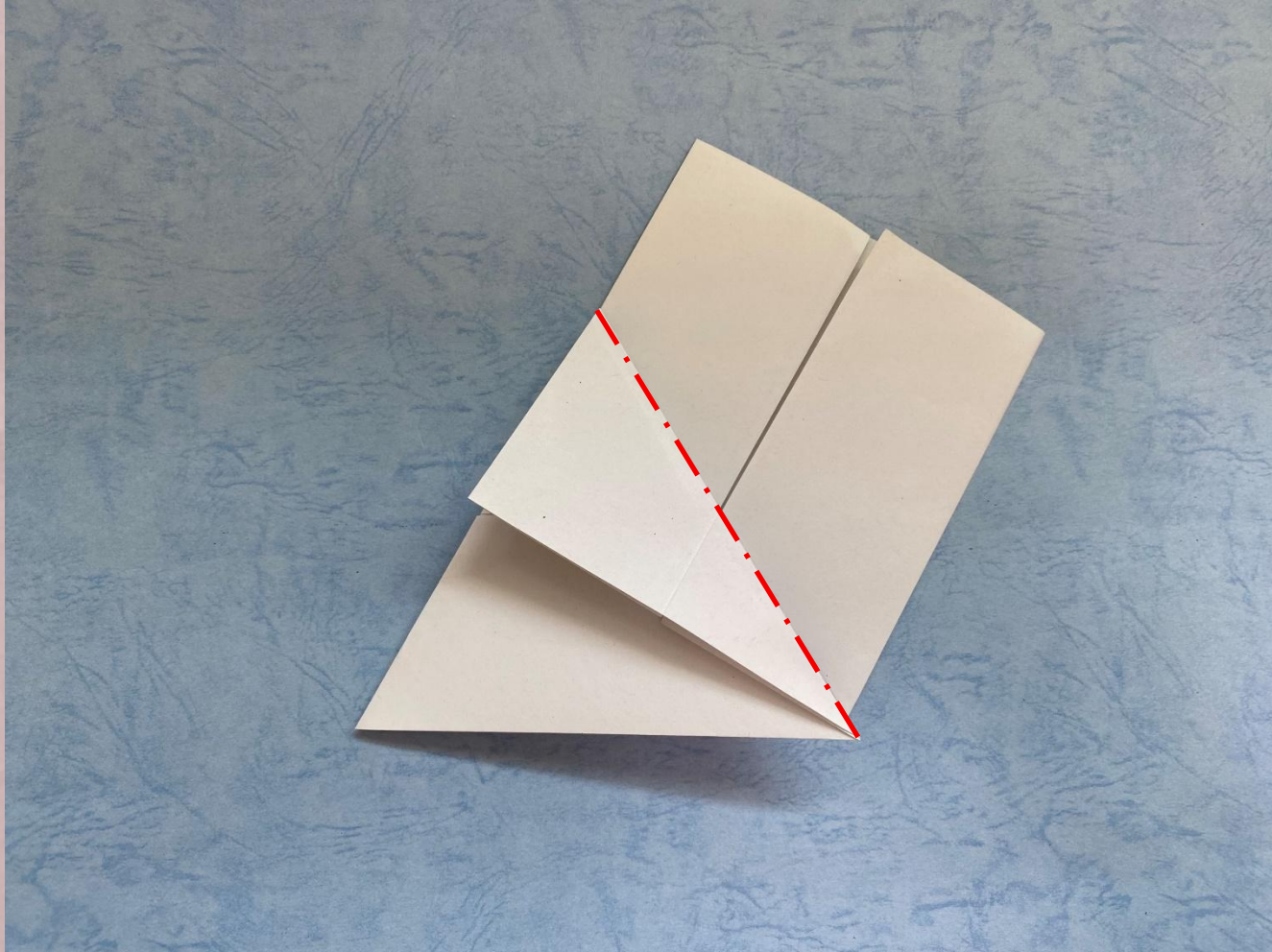
沿著紅線往後摺



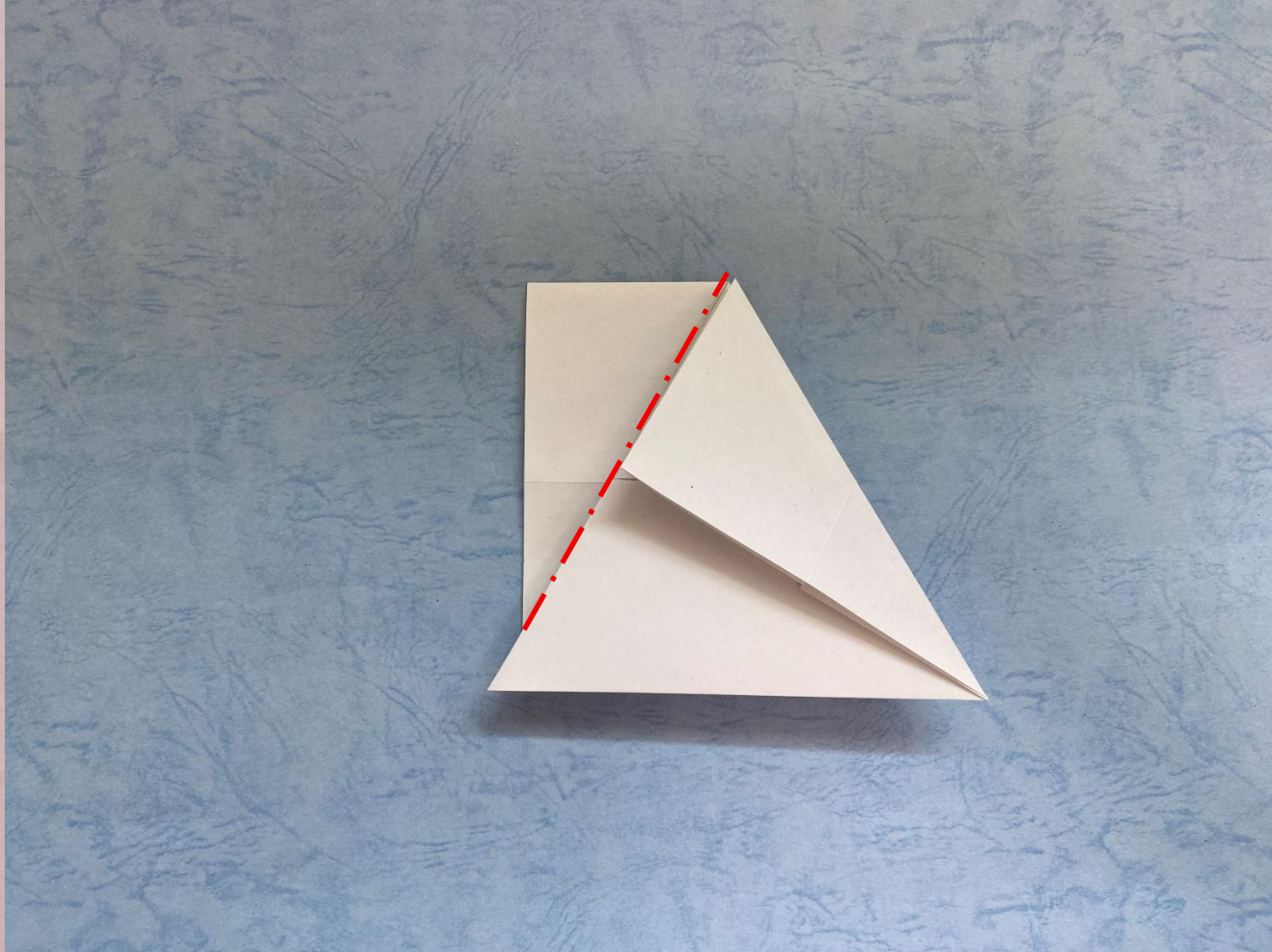
沿著紅線往後摺



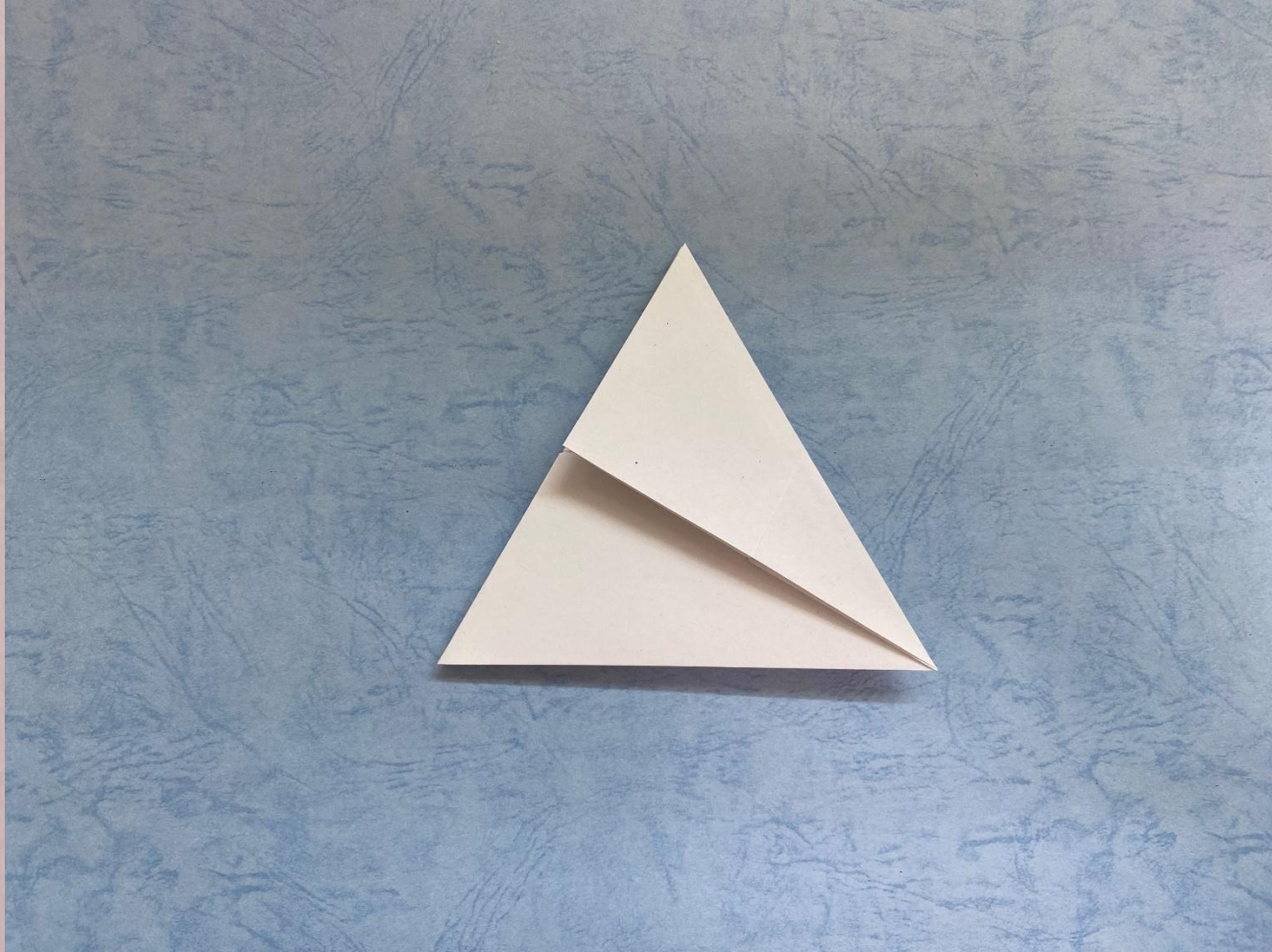
沿著紅線往後摺



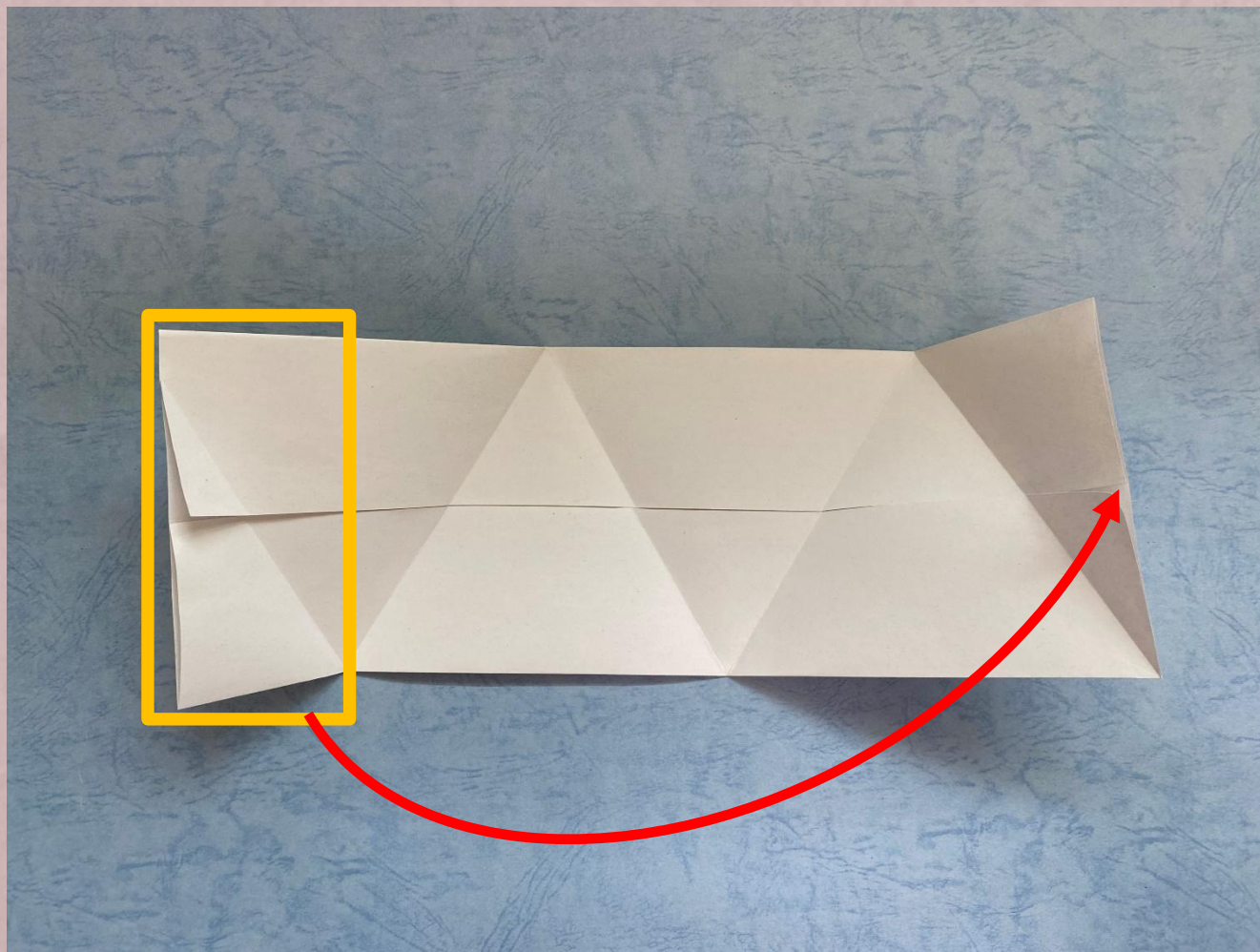
沿著紅線往後摺



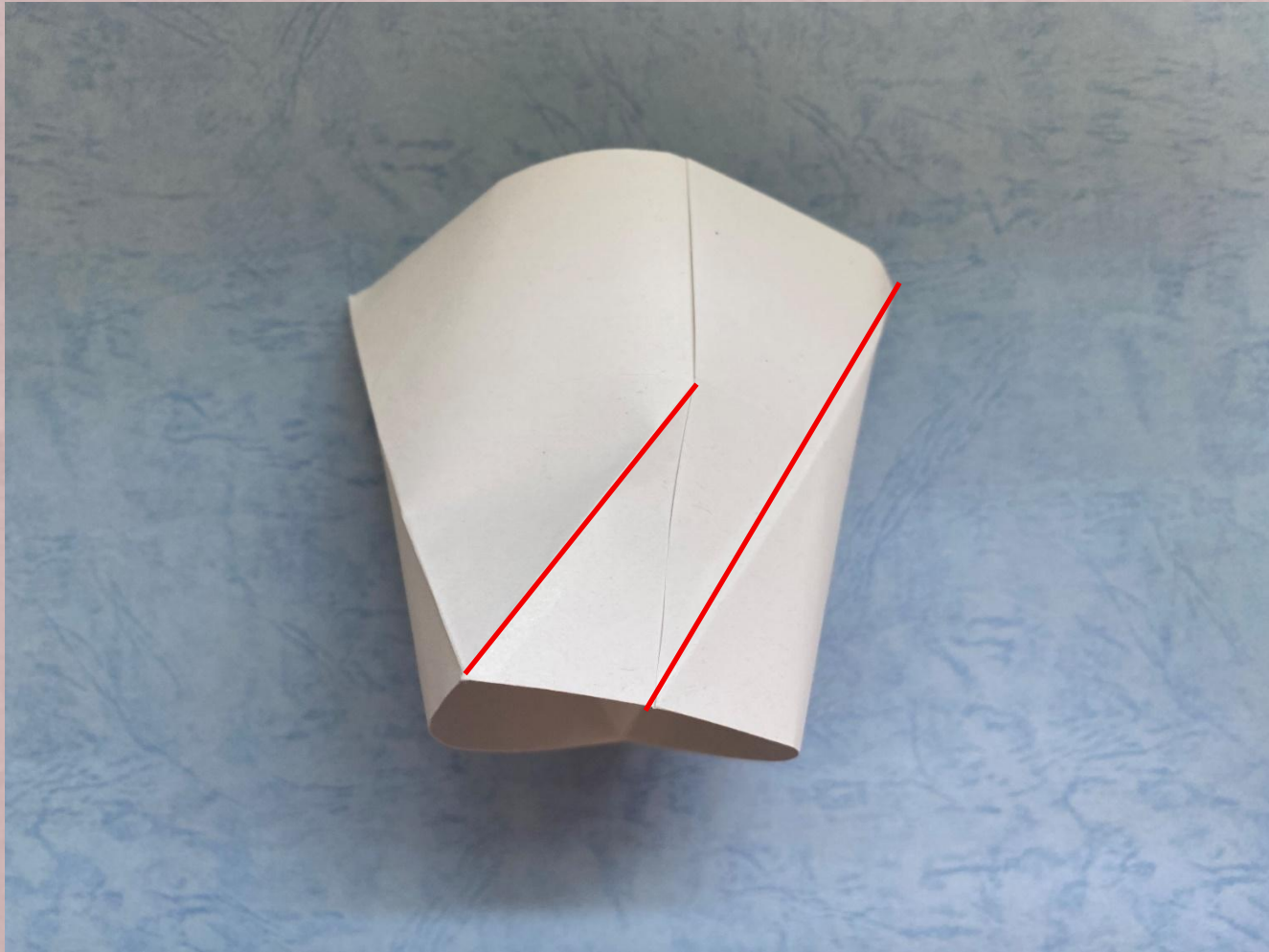
將紙張打開



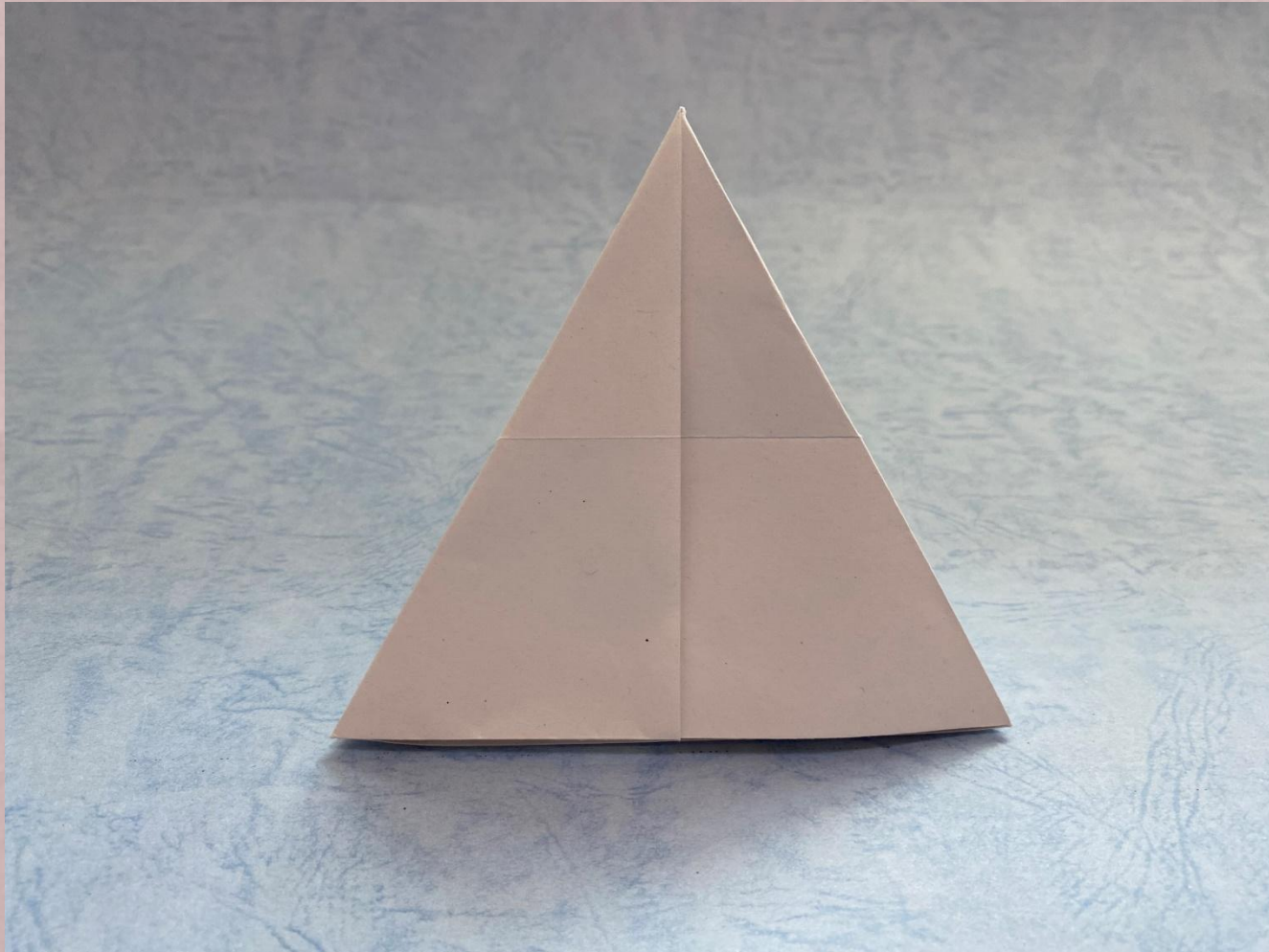
將左側塞入右側



過程圖，讓紅色摺線重疊

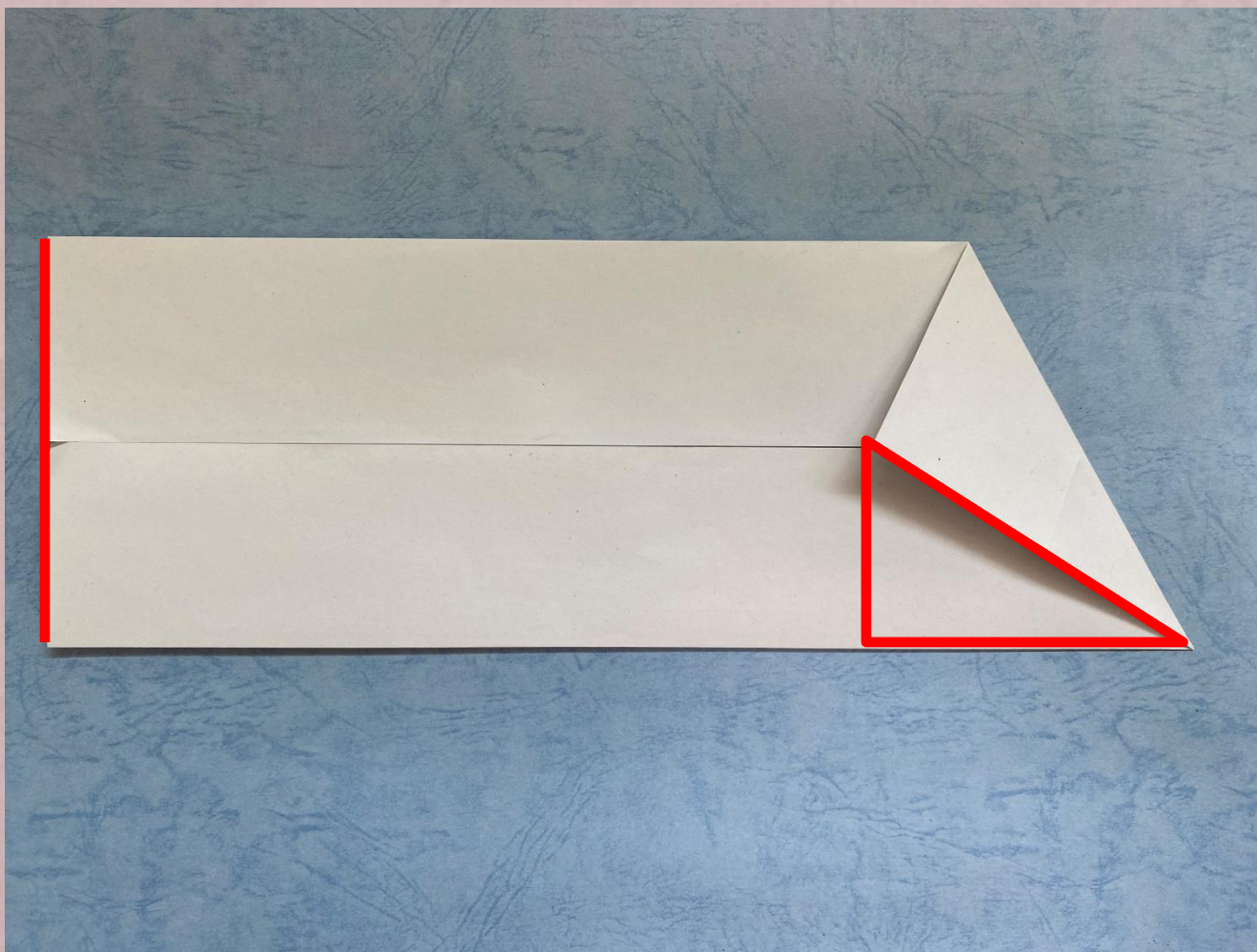


完成圖



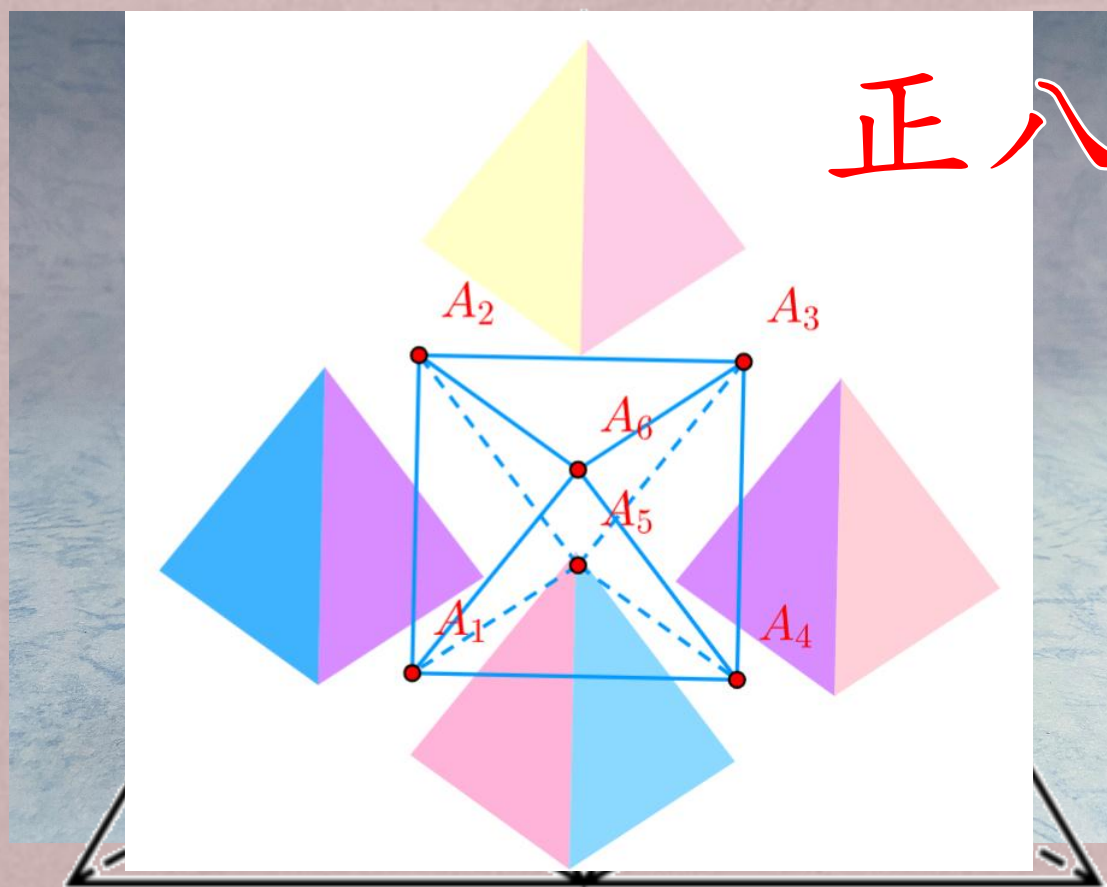
提問時間

1. 如何說明摺出來的三角形一定是正三角形？



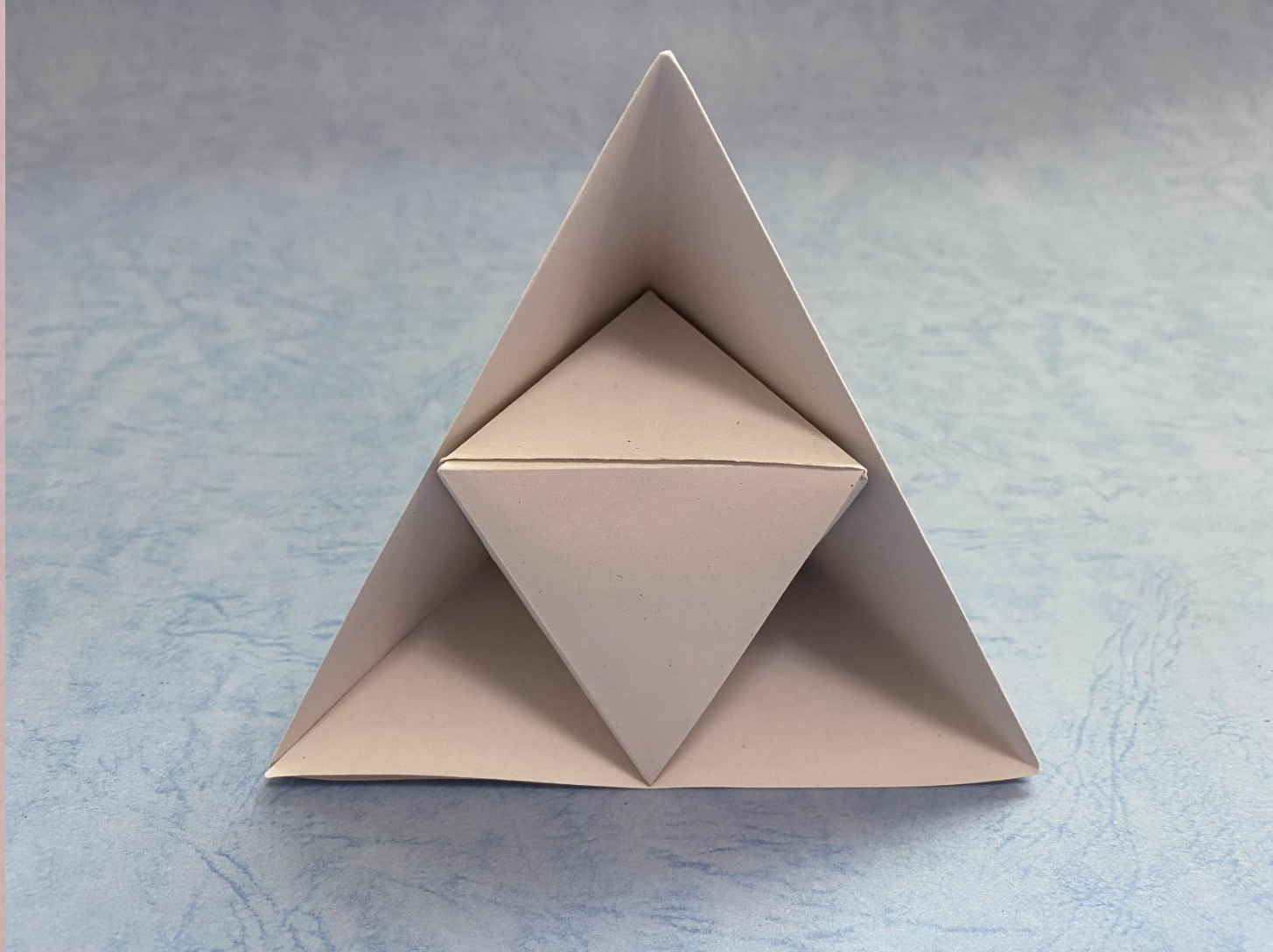
提問時間

2. 如果摺四個正四面體，並將頂點相堆疊成更大的正四面體，則中空部分是什麼形體？

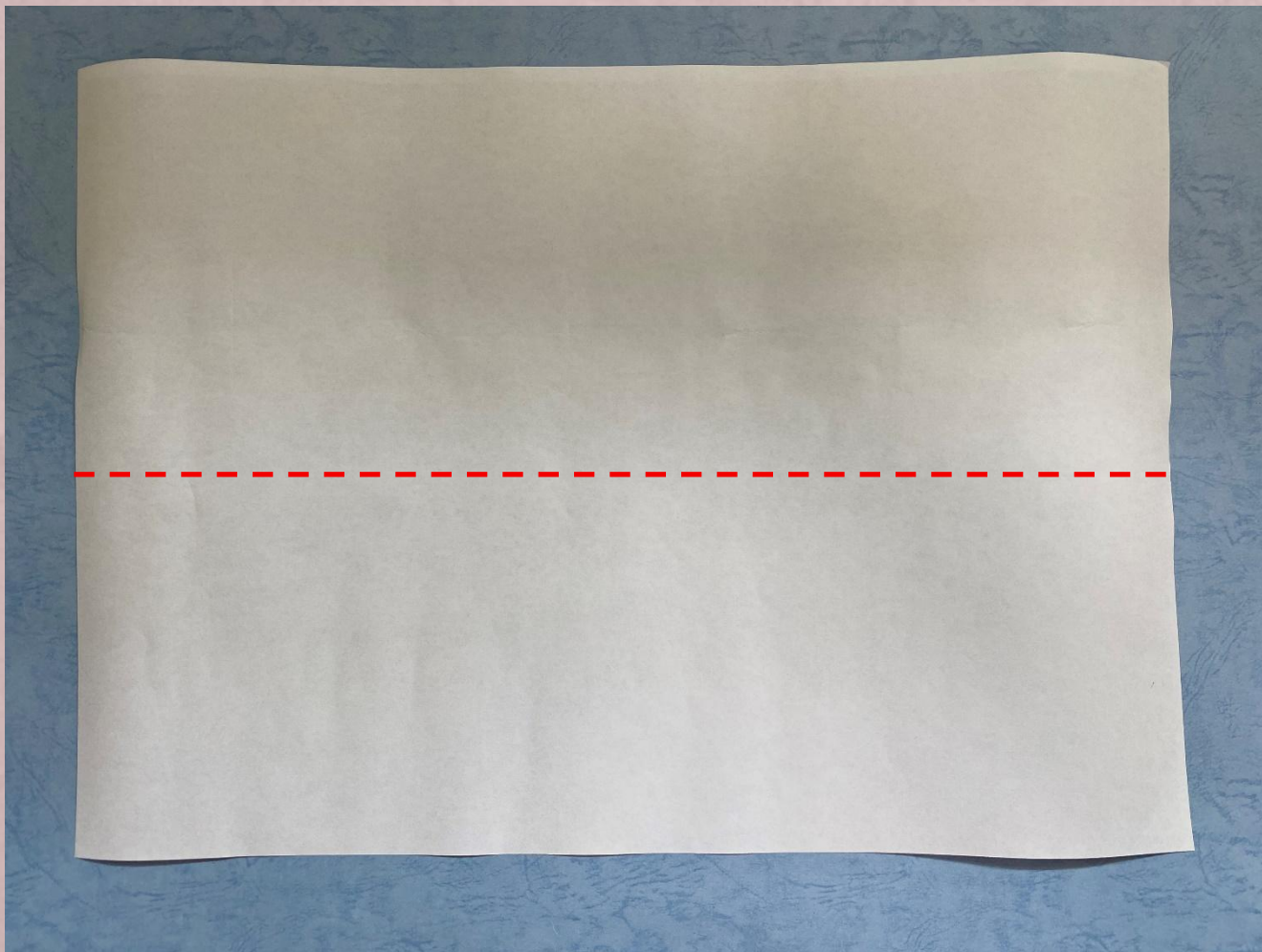


正八面體

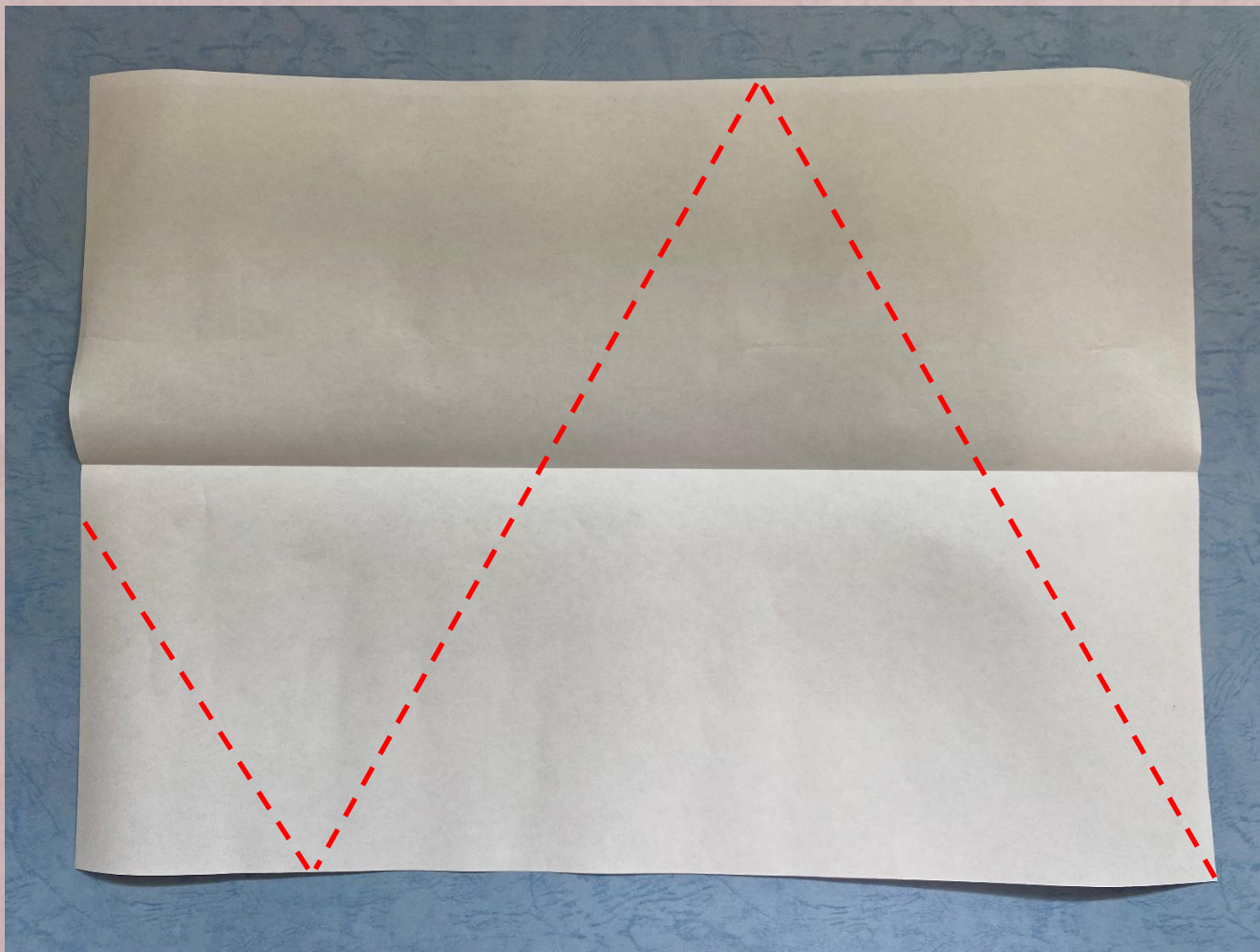
正四面體外殼



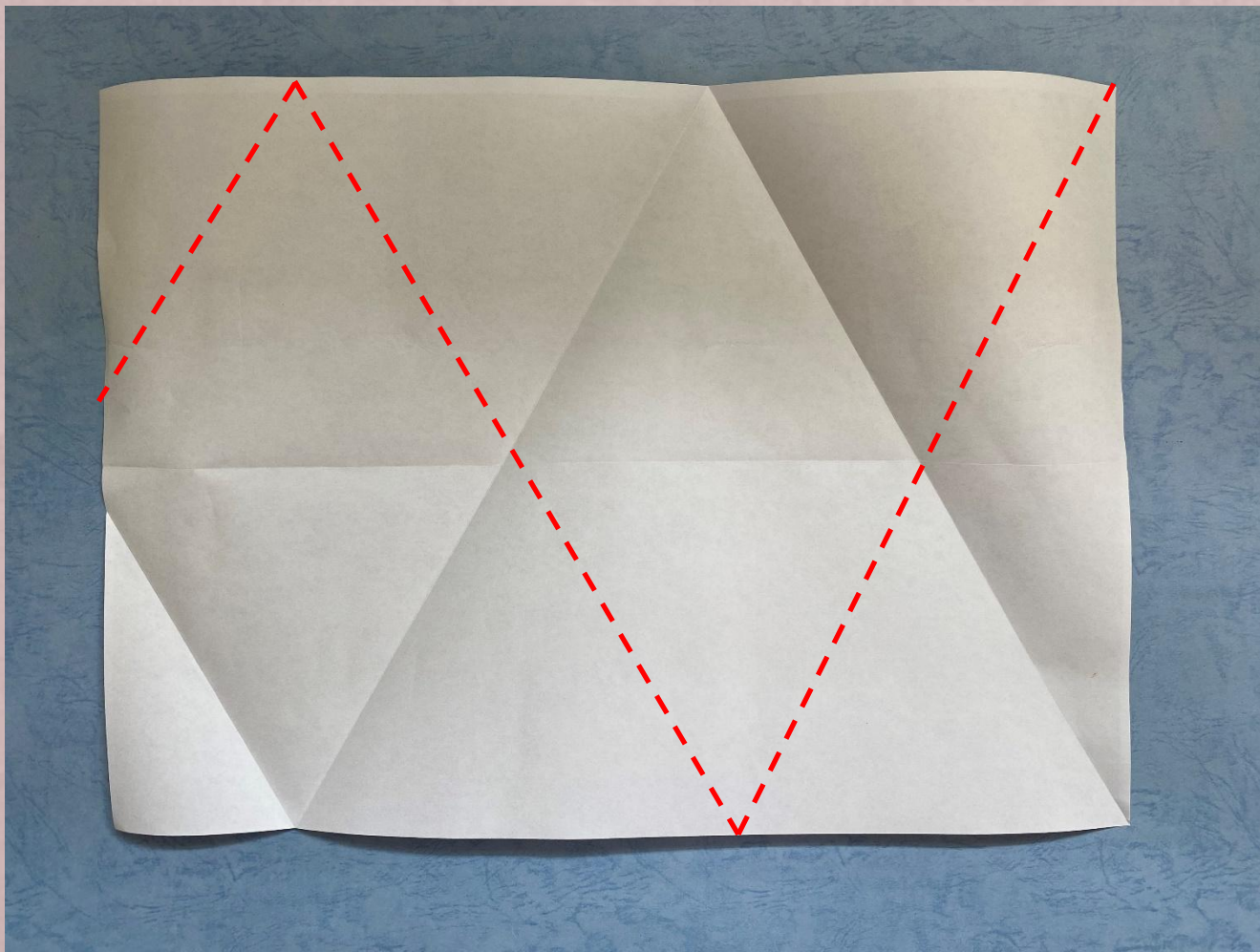
A3從中間對摺，再打開



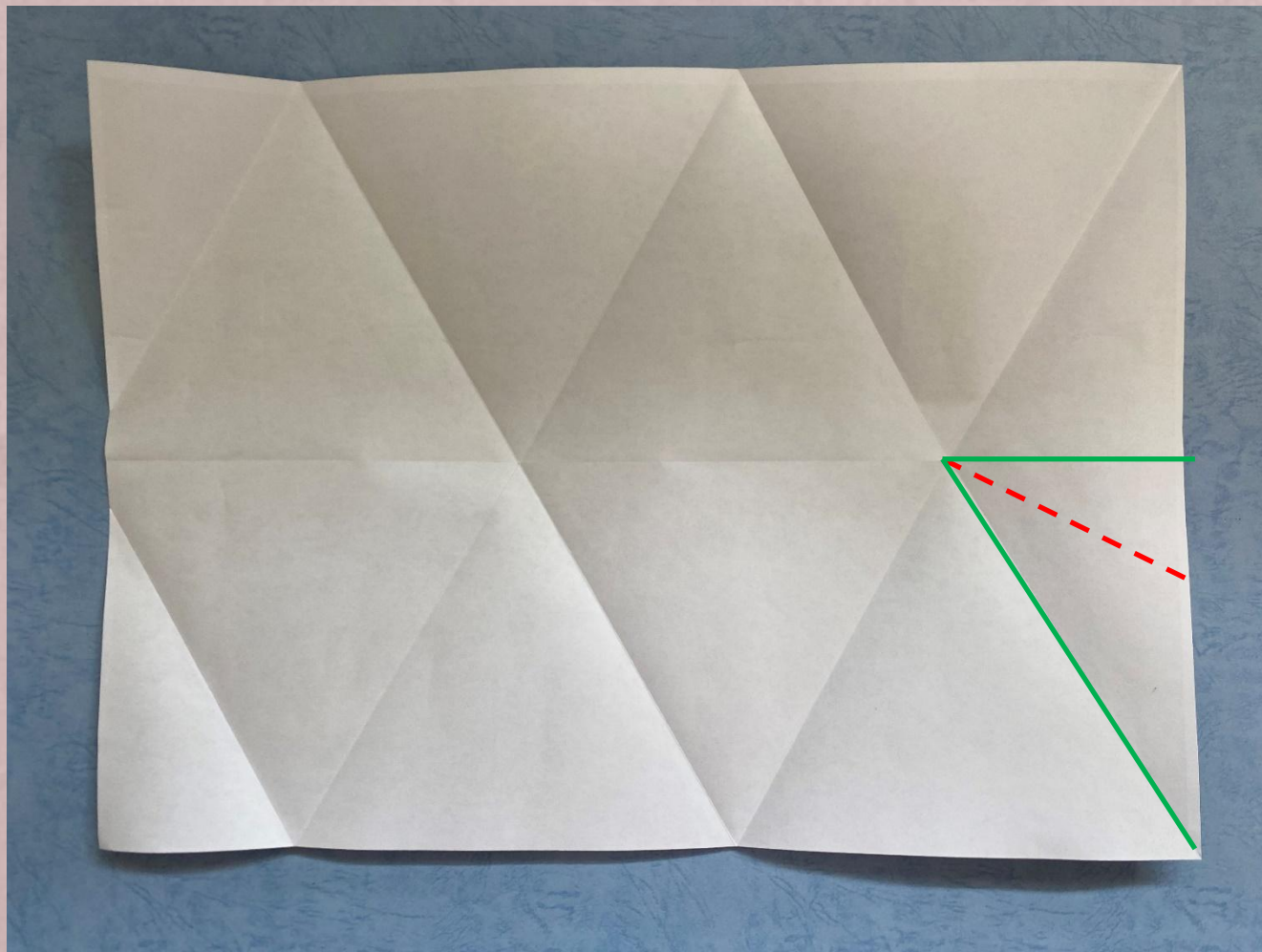
摺出30-60的摺線



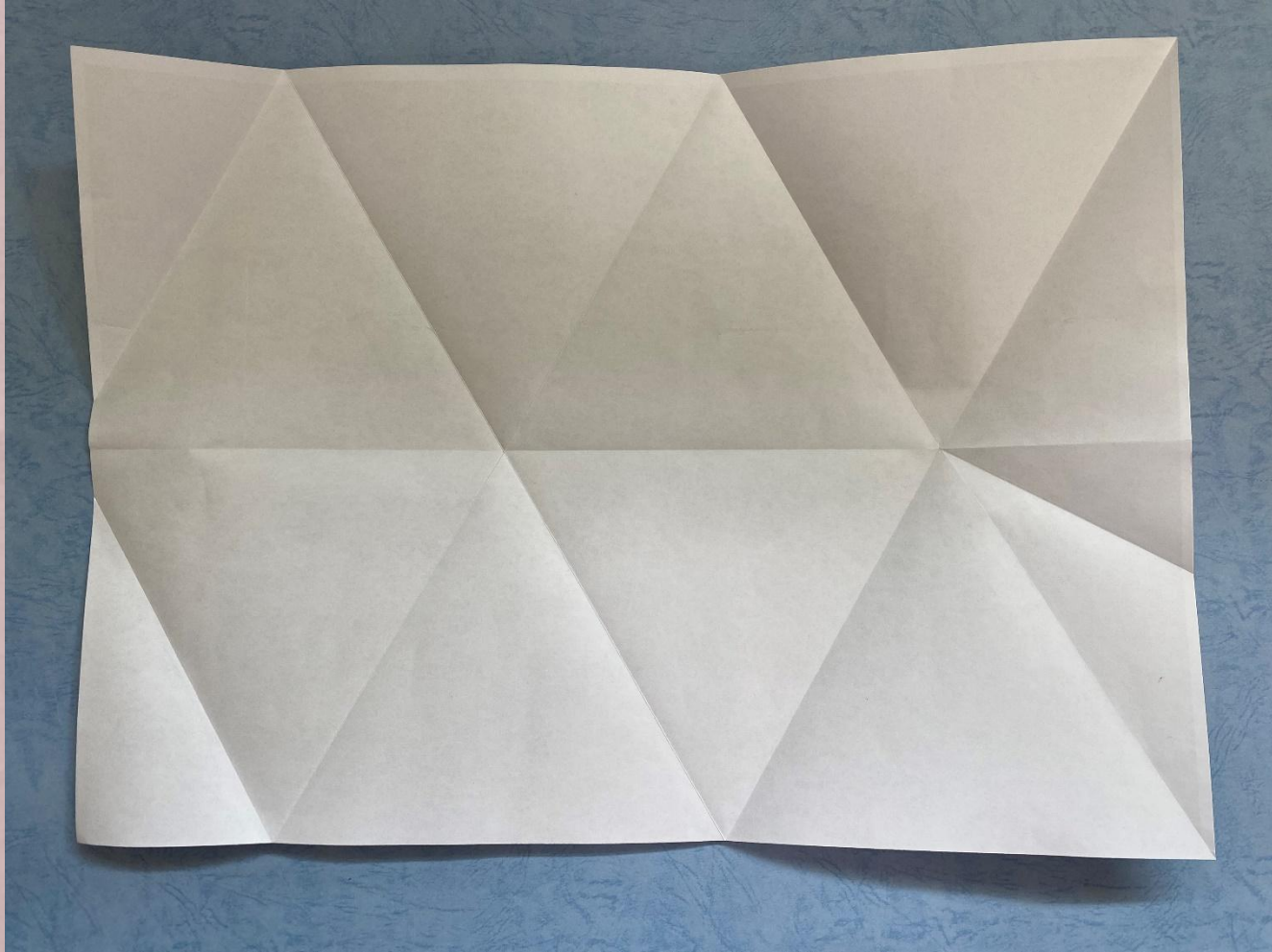
反向摺出30-60的摺線



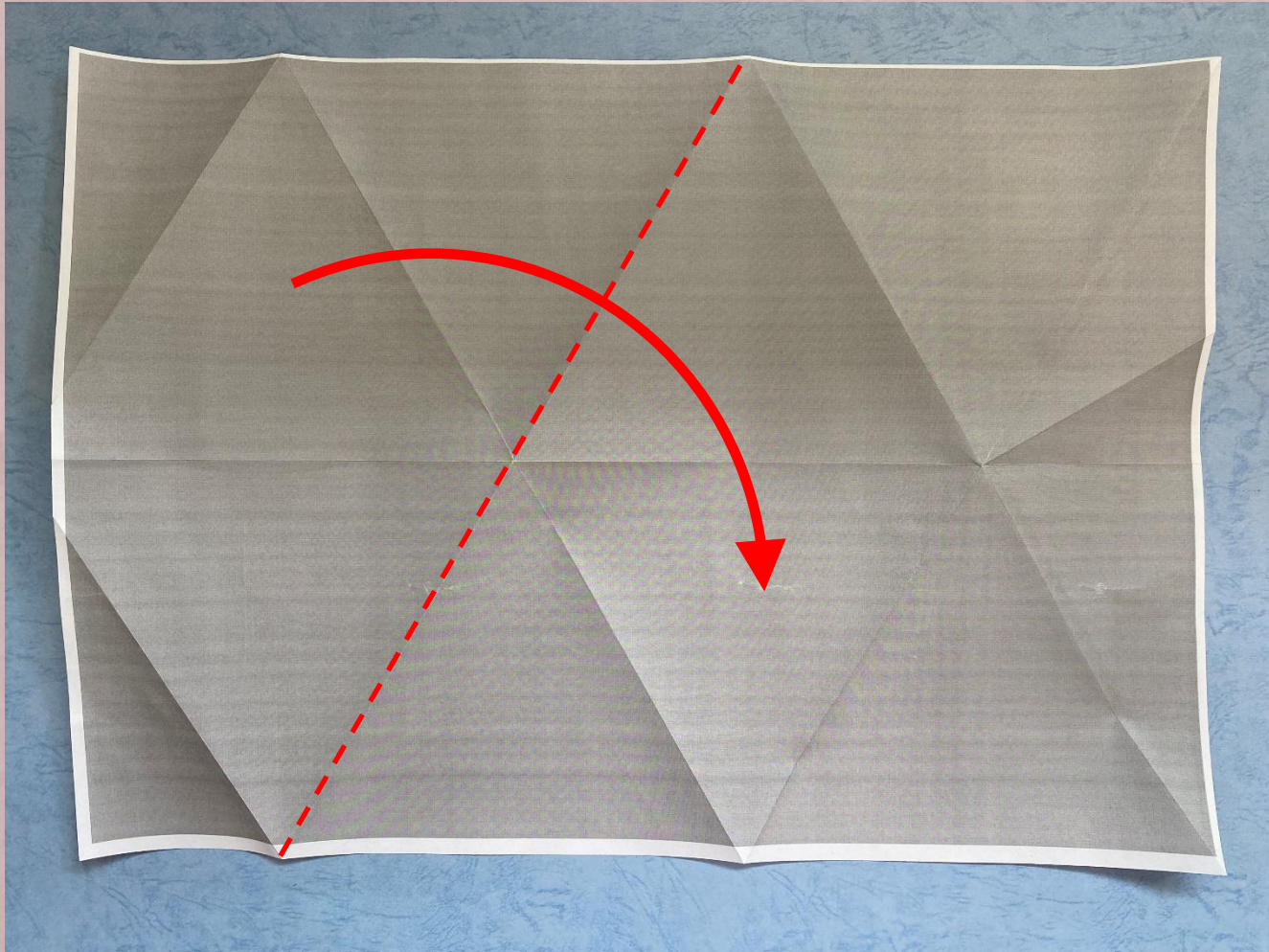
摺出綠色角的角平分線



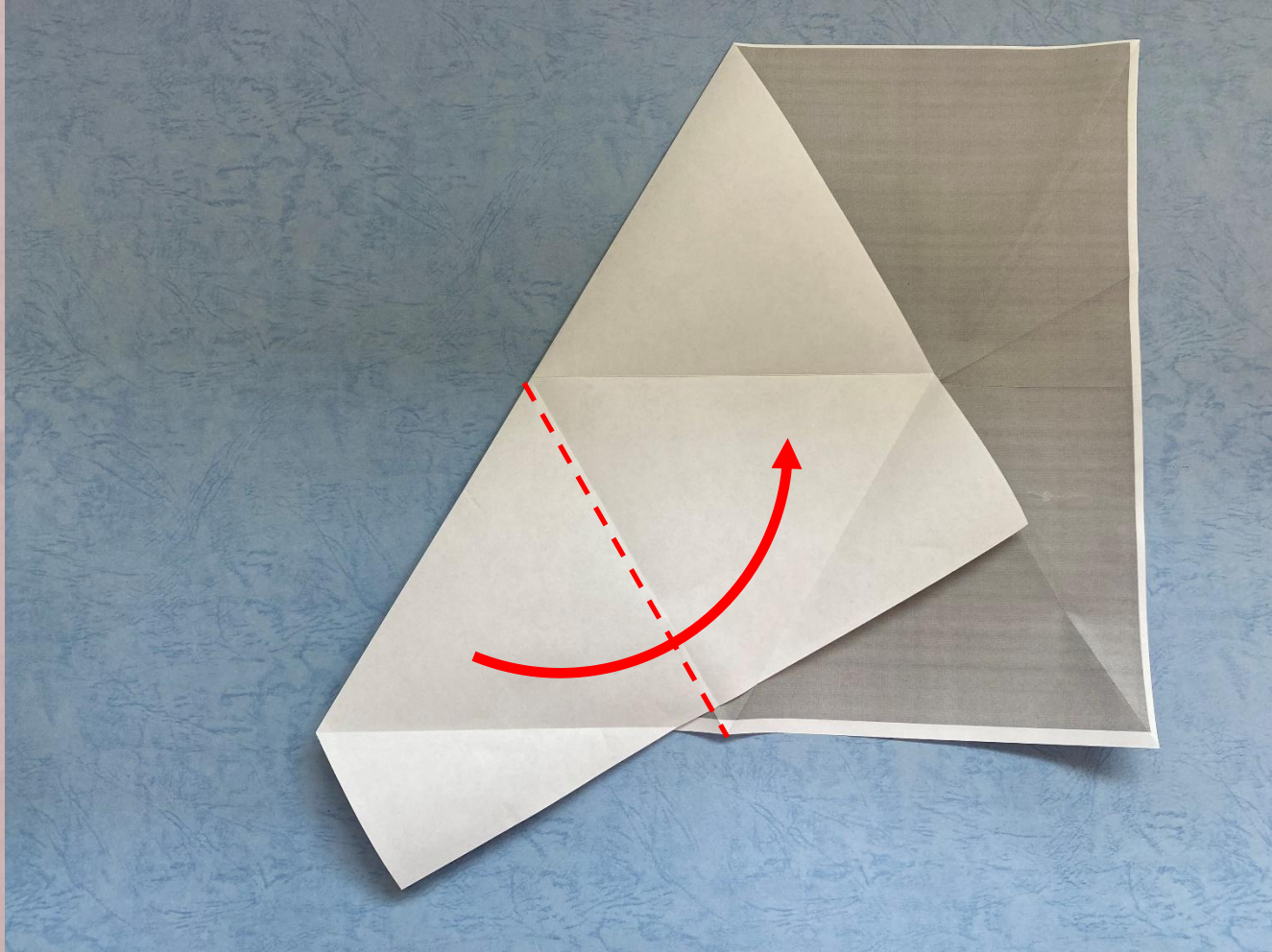
翻到背面



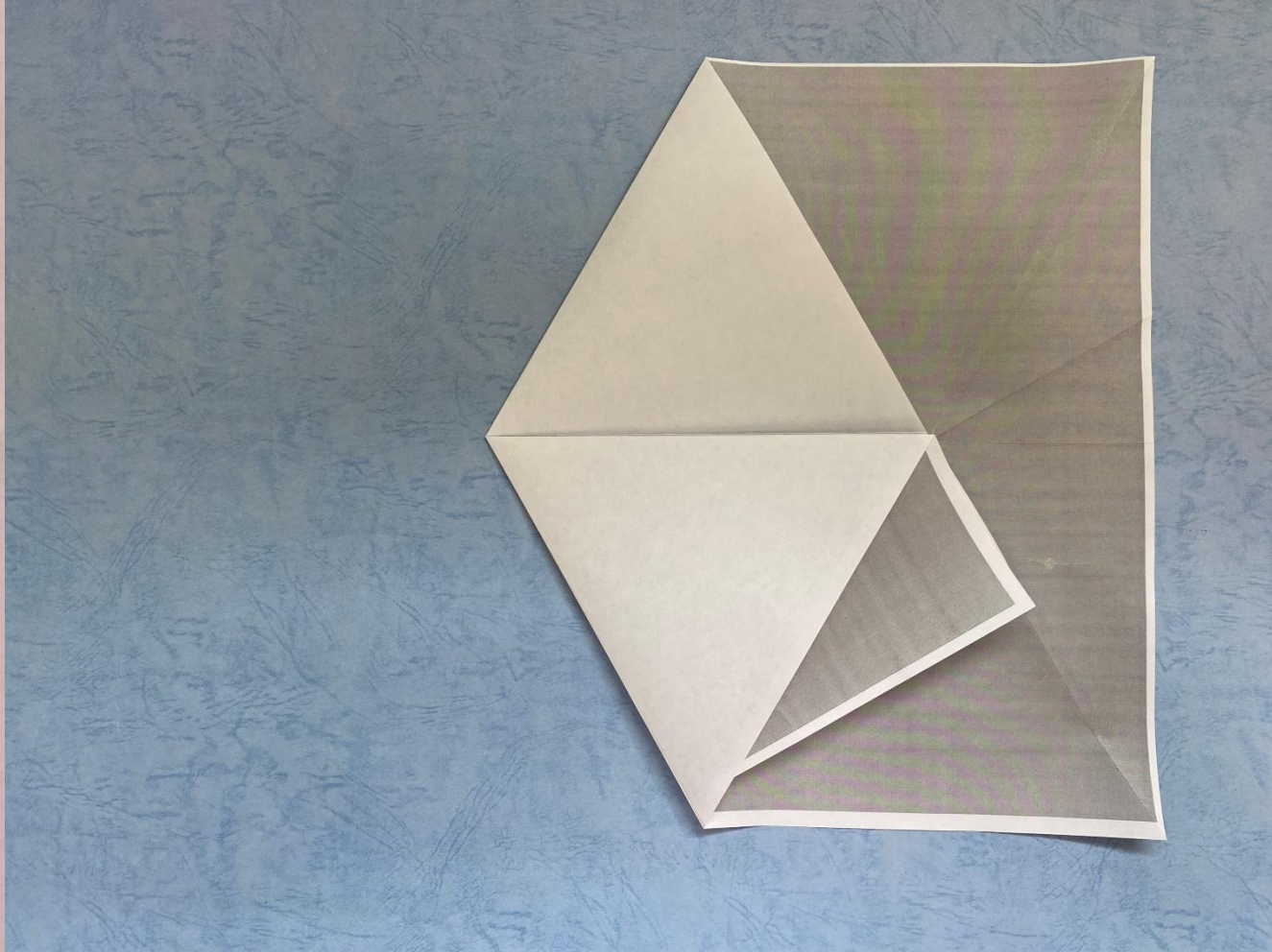
沿紅線將左下往右下摺



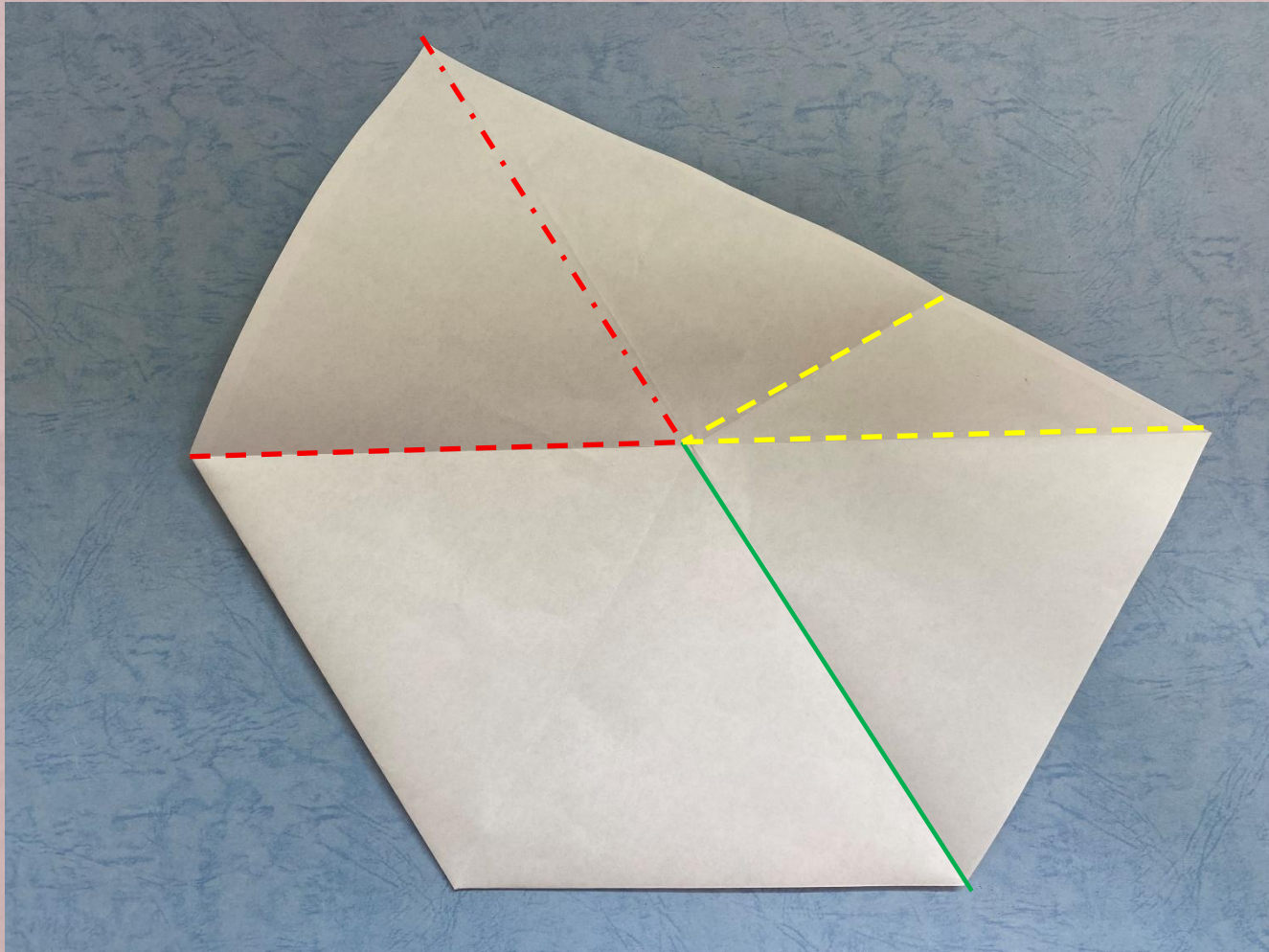
沿紅線左下往右上摺



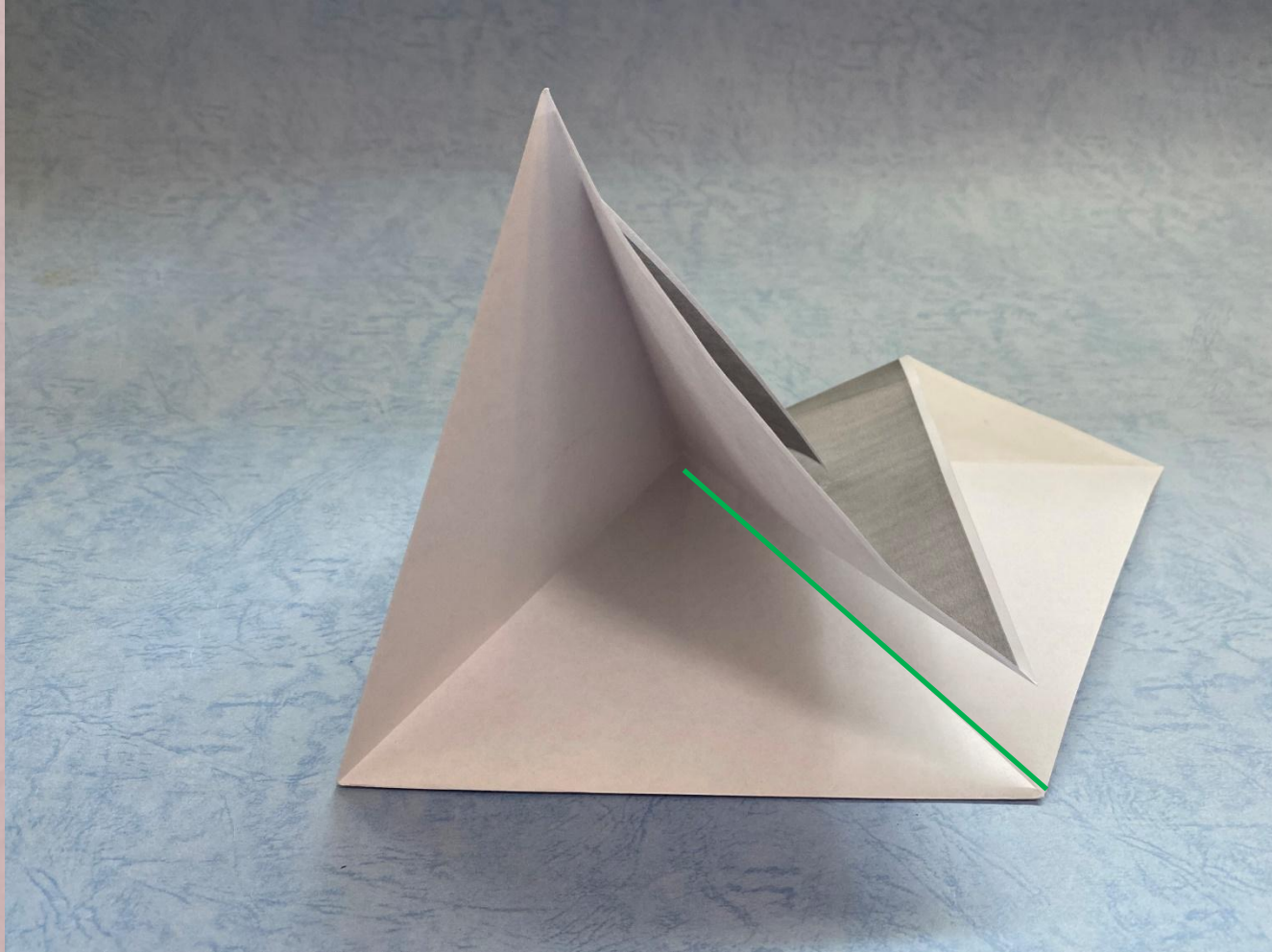
翻到背面，再轉向左轉 60°



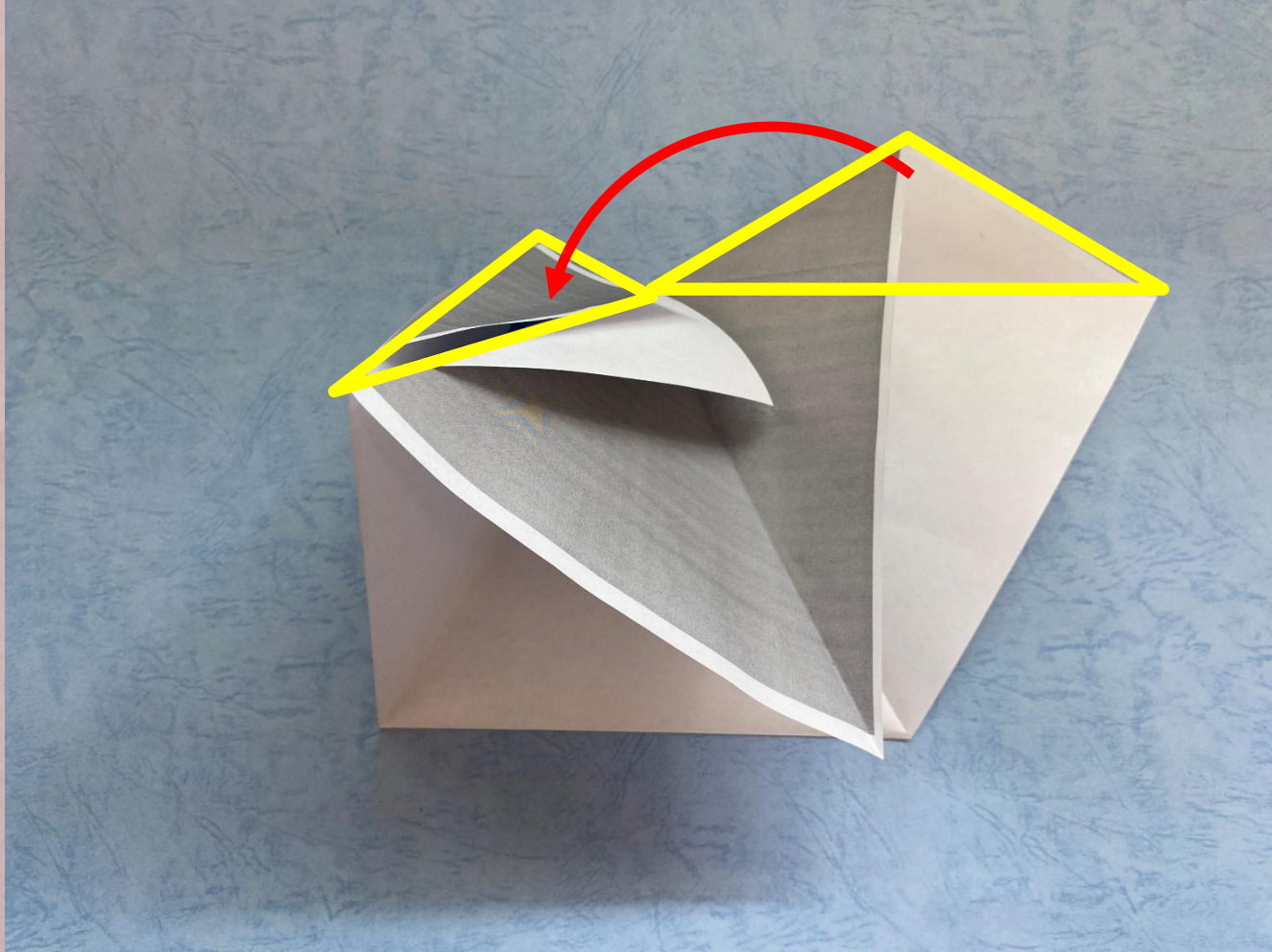
紅線收攏到綠線
黃線塞到後面摺縫中



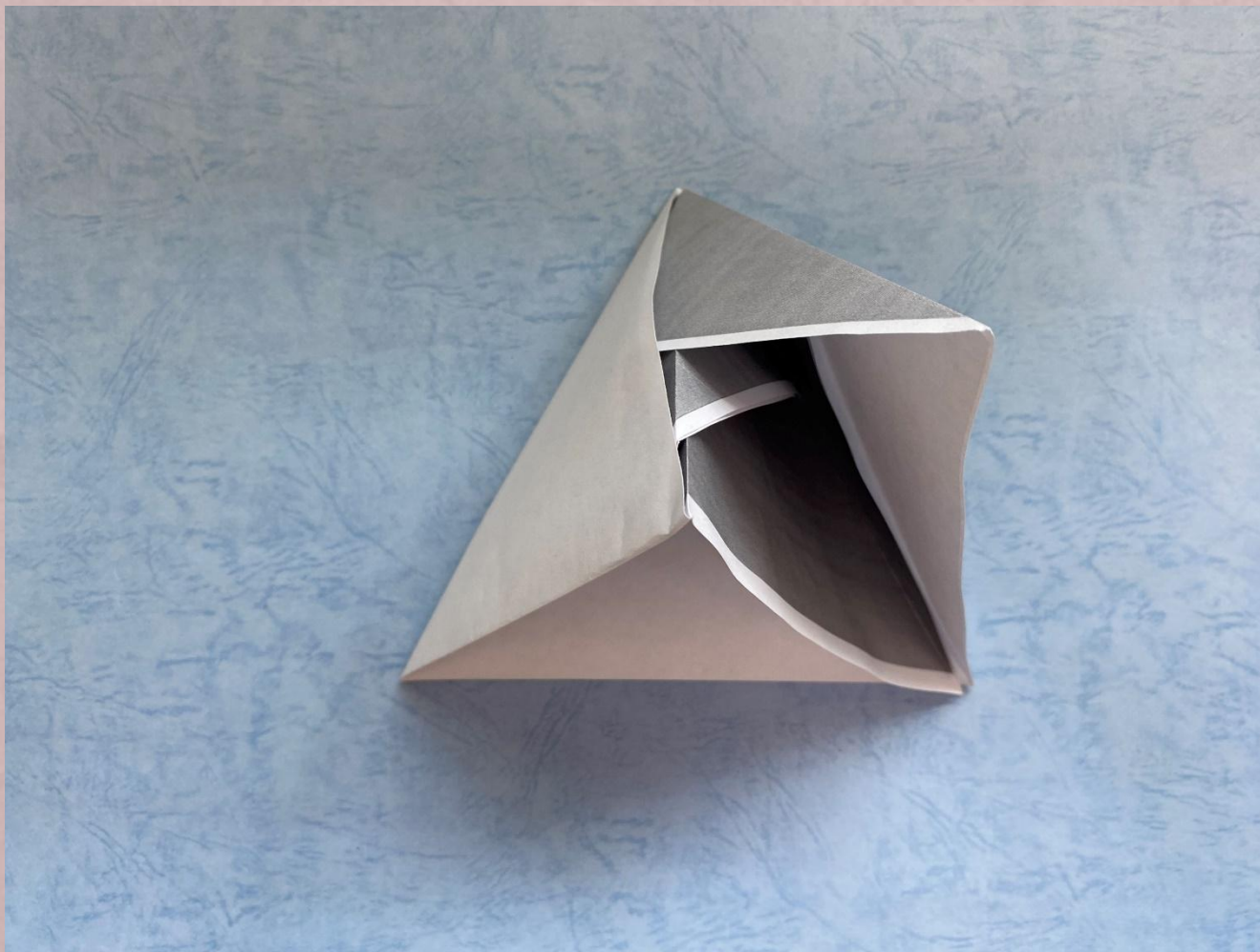
過程示意圖



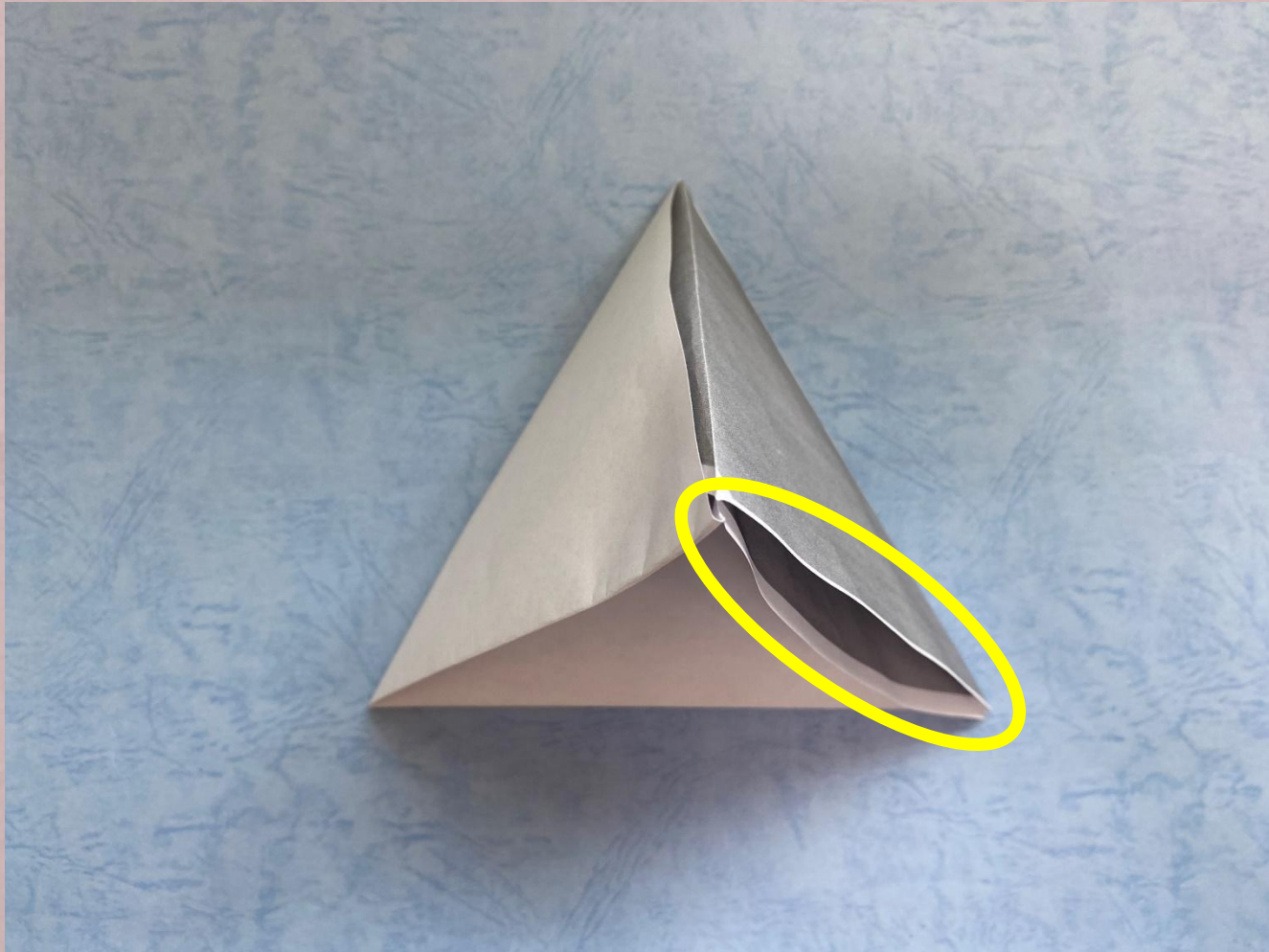
過程示意圖



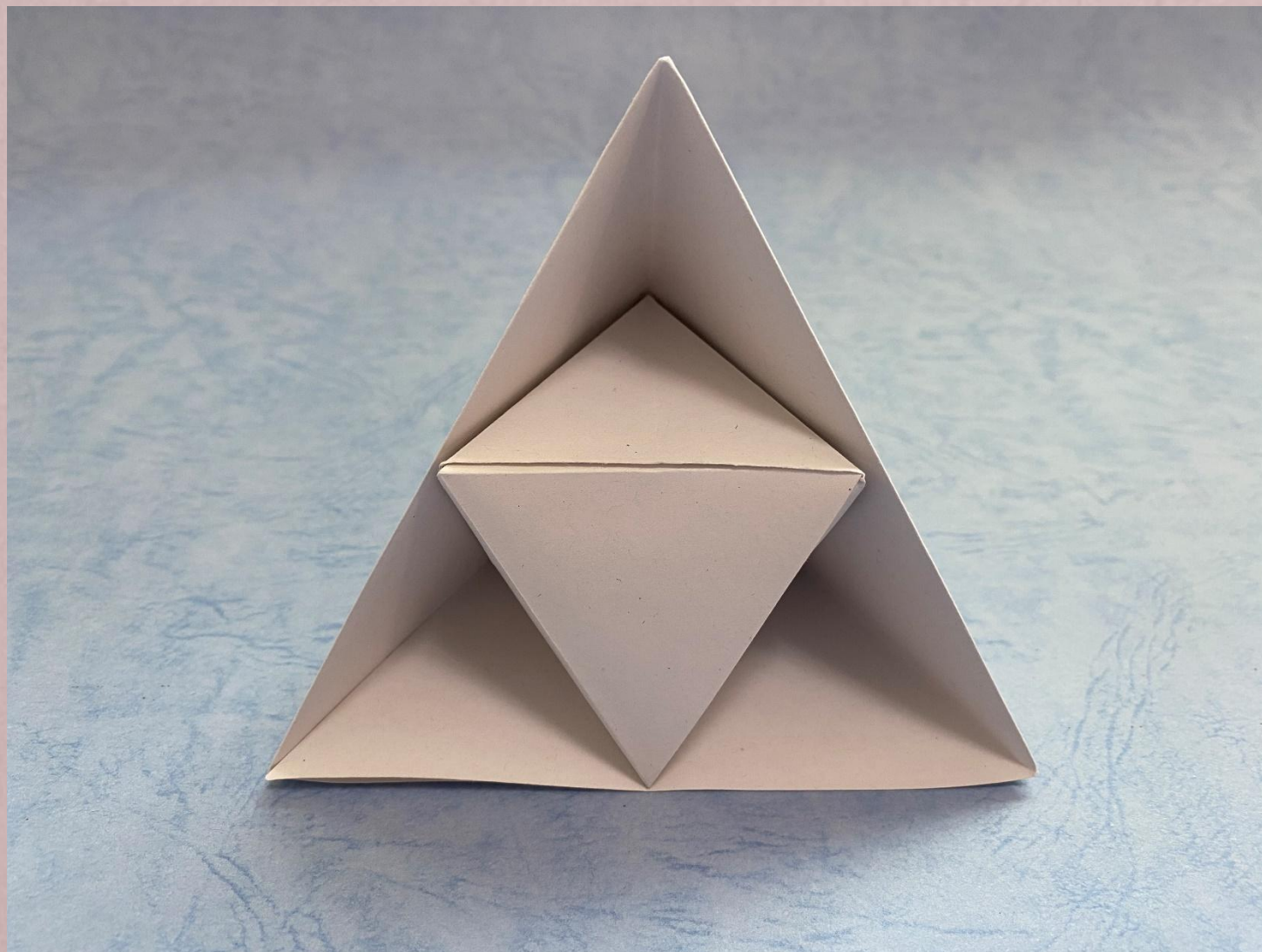
過程示意圖



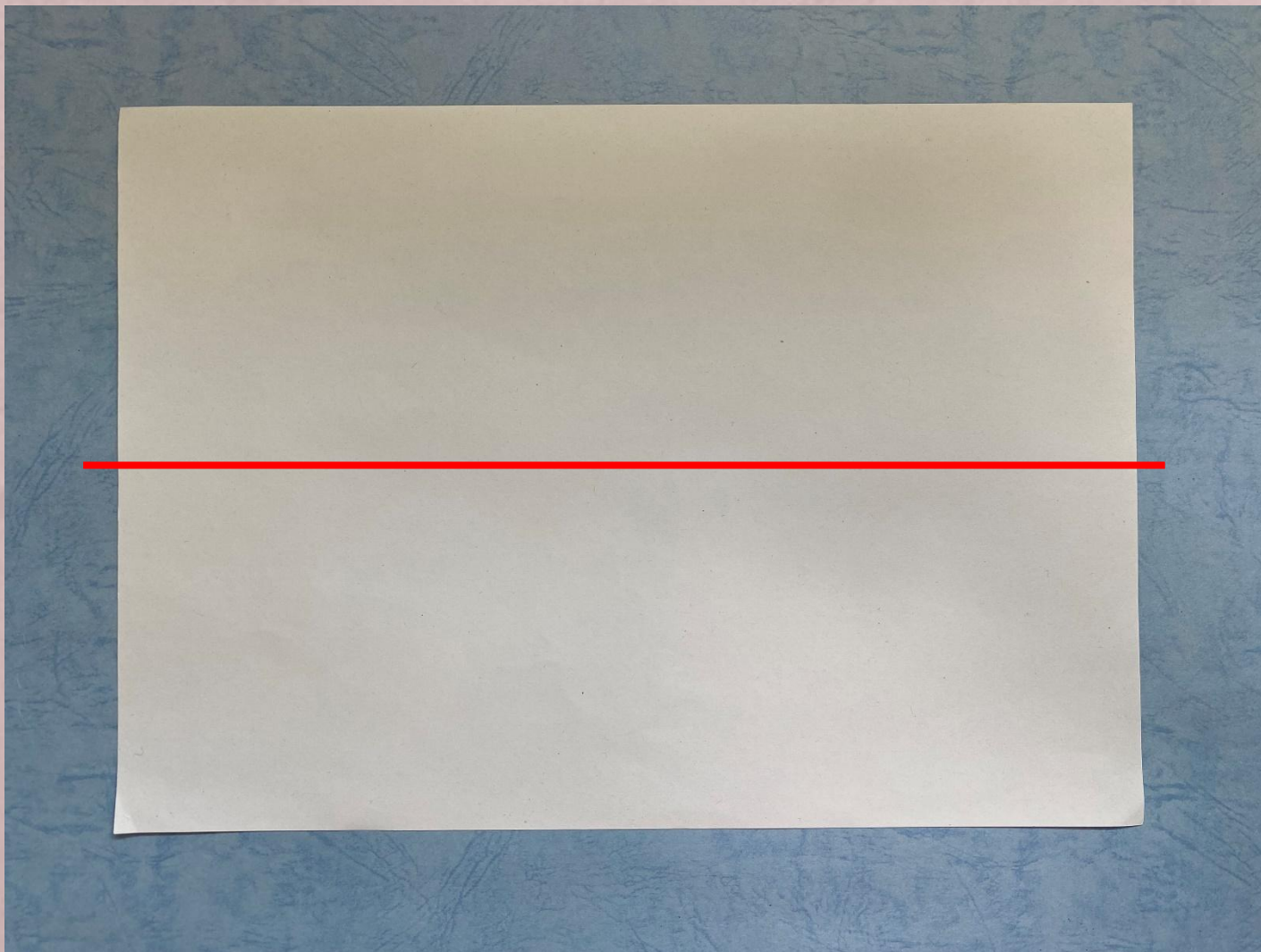
完成正四面體外套
圈起來部分可上膠水固定平整



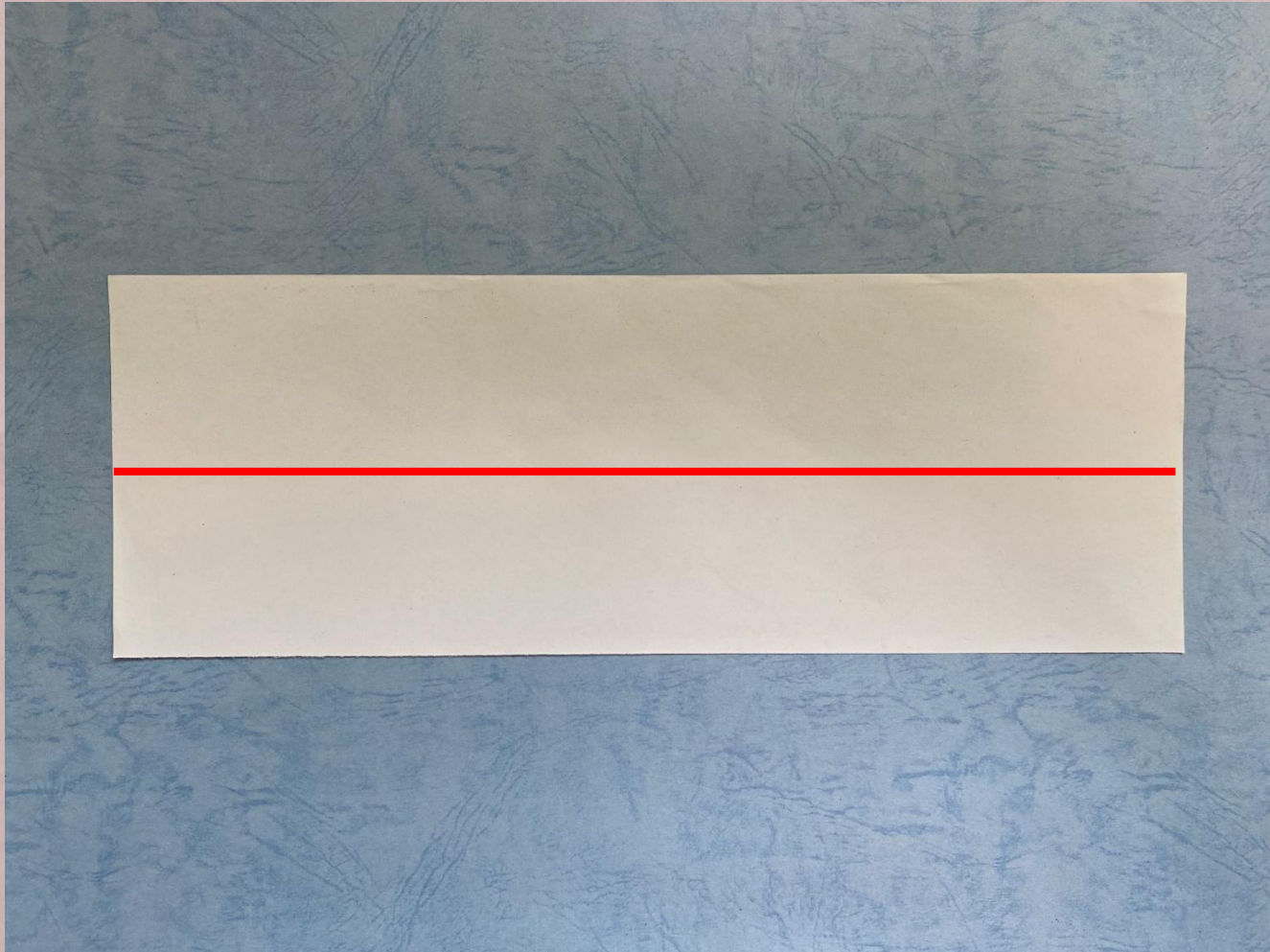
正八面體



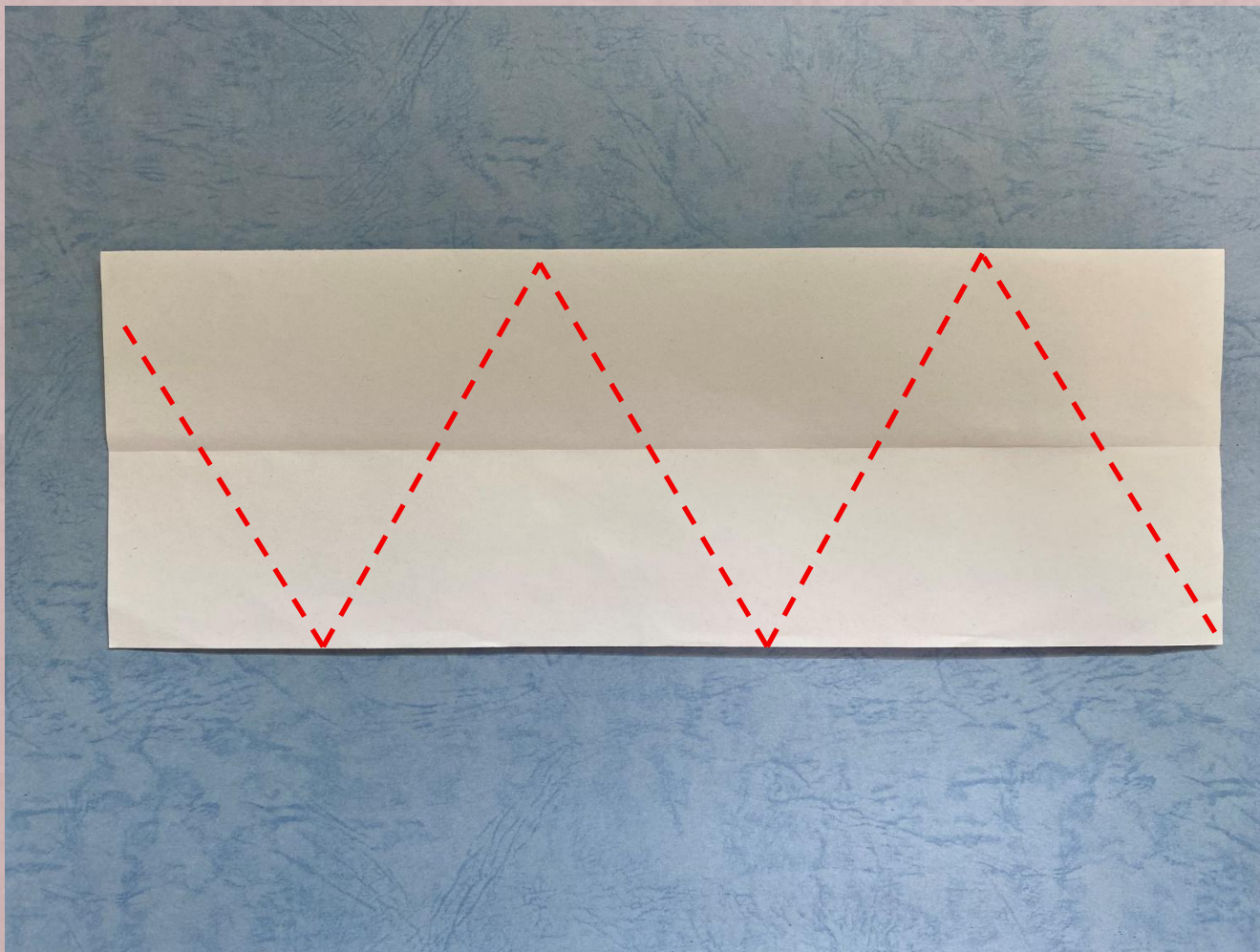
A3從中間對裁



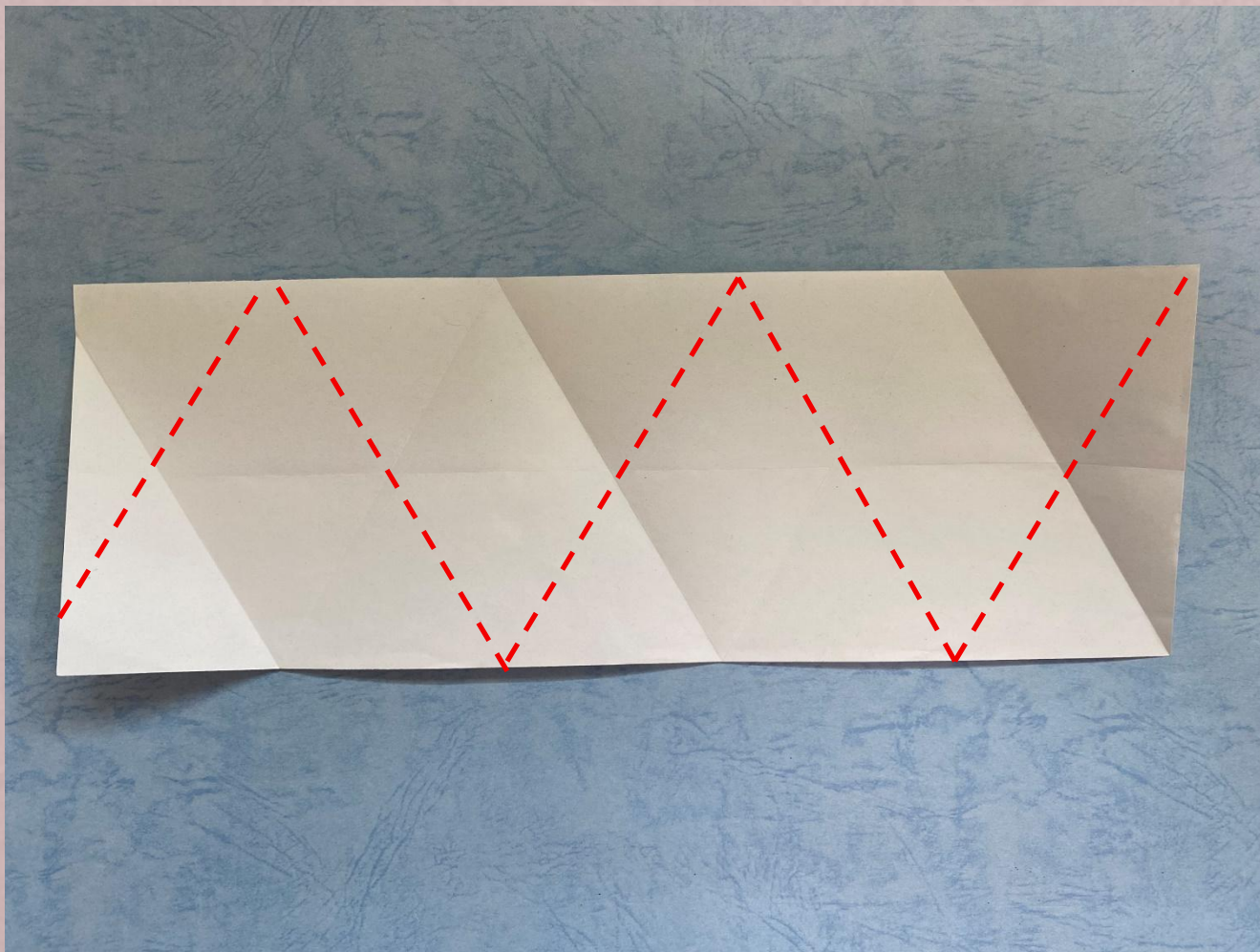
中間對摺再打開



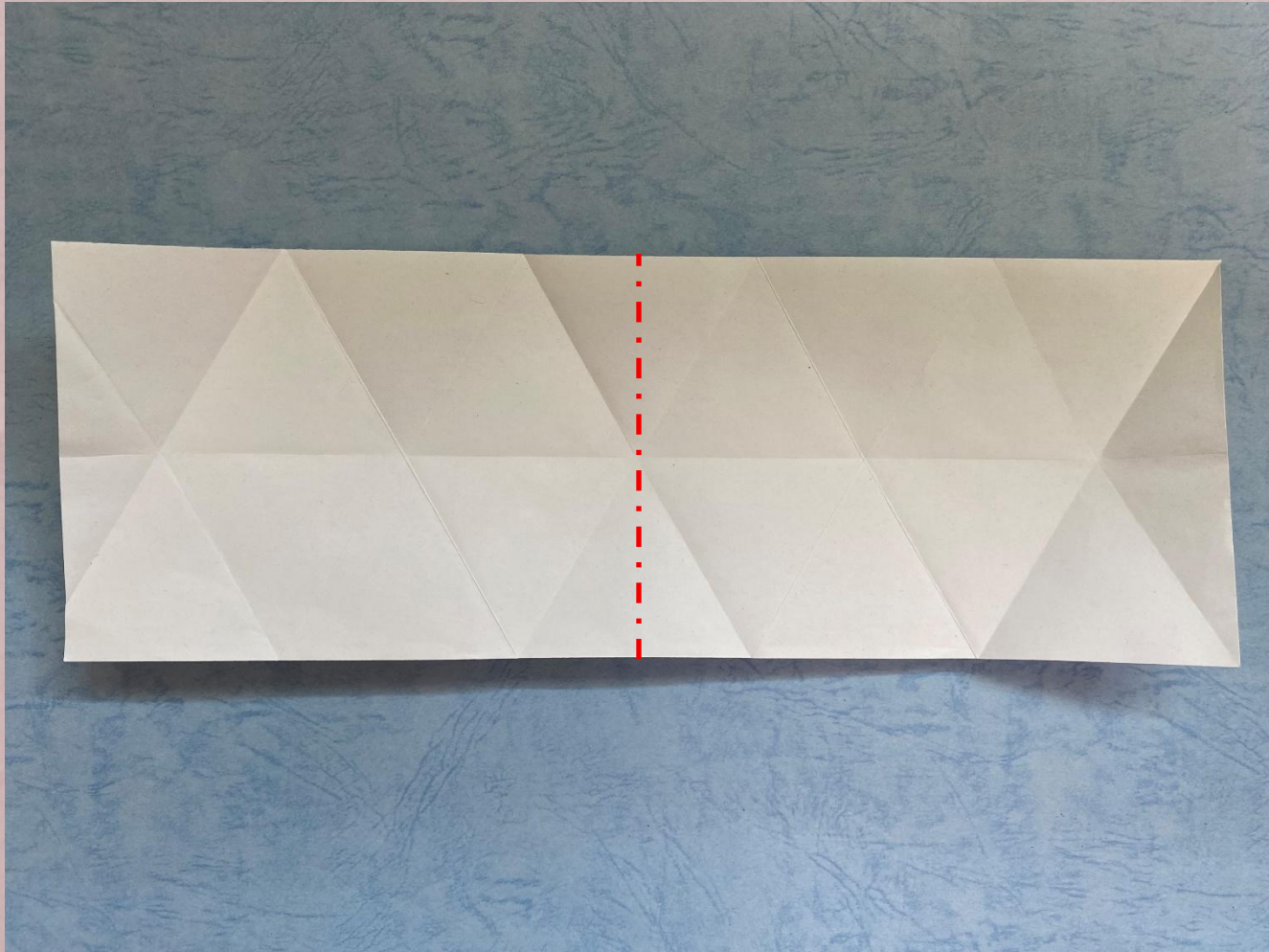
摺出30-60的摺線



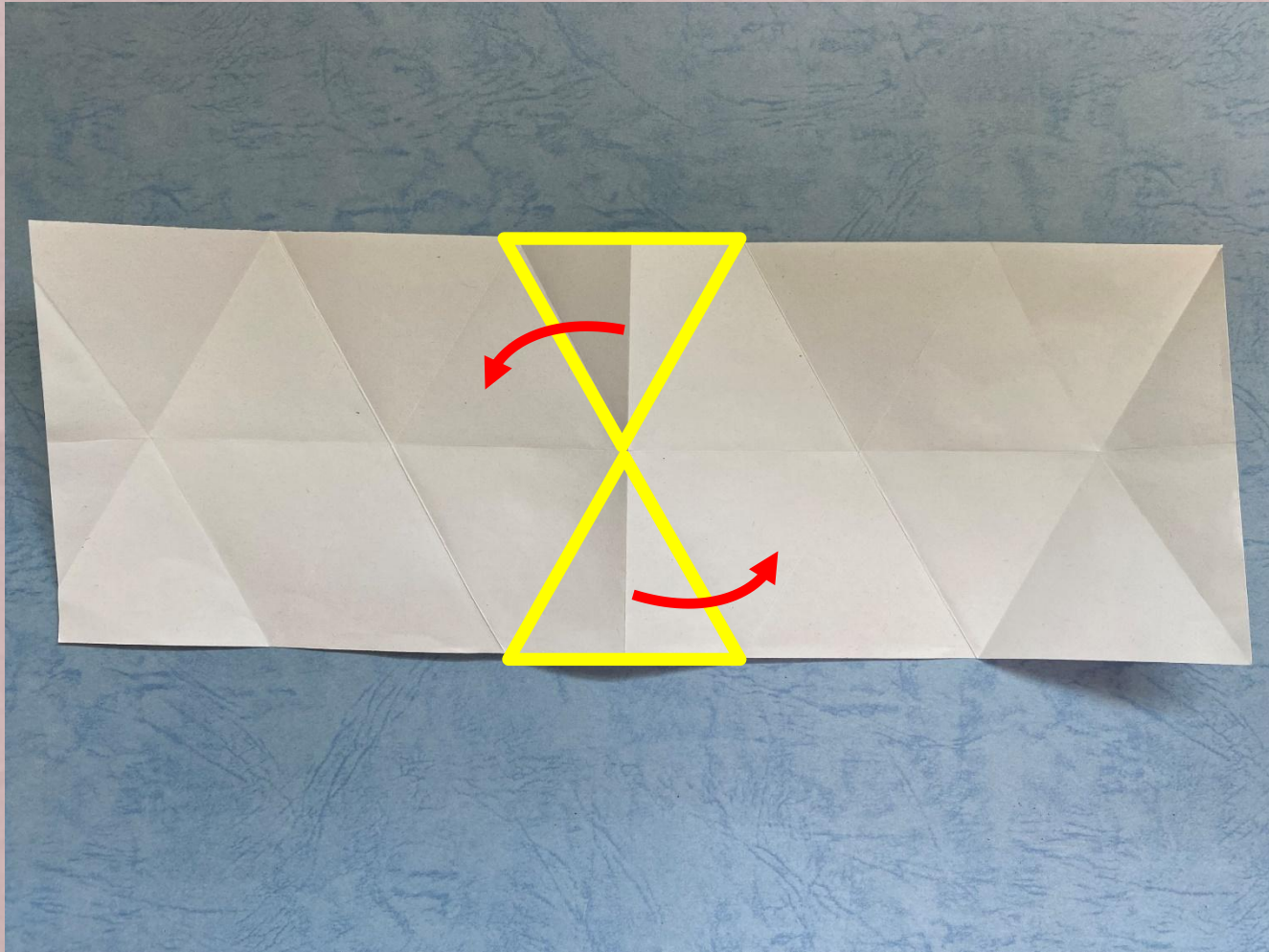
摺出30-60的摺線



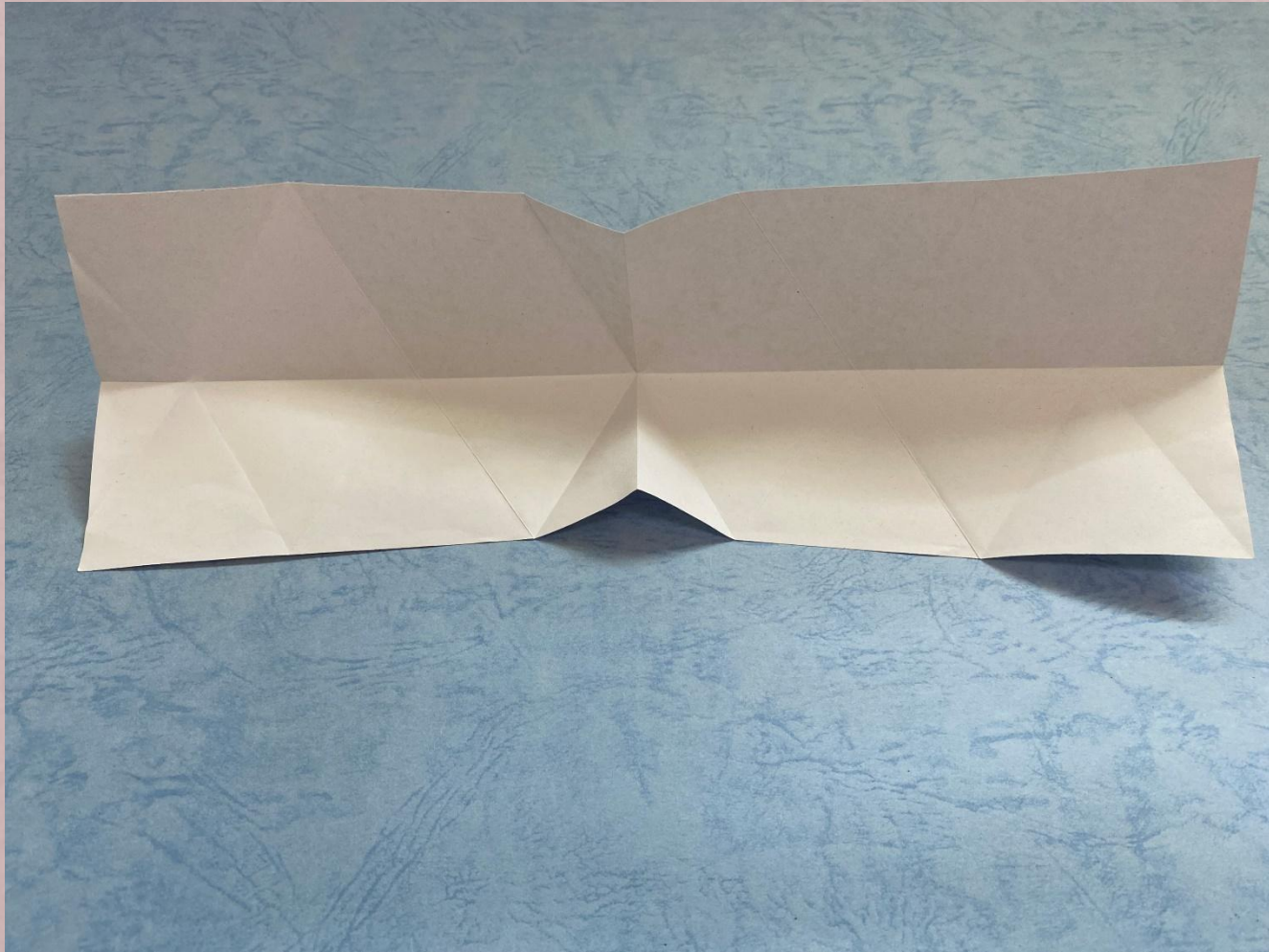
中間三角形摺出對稱線



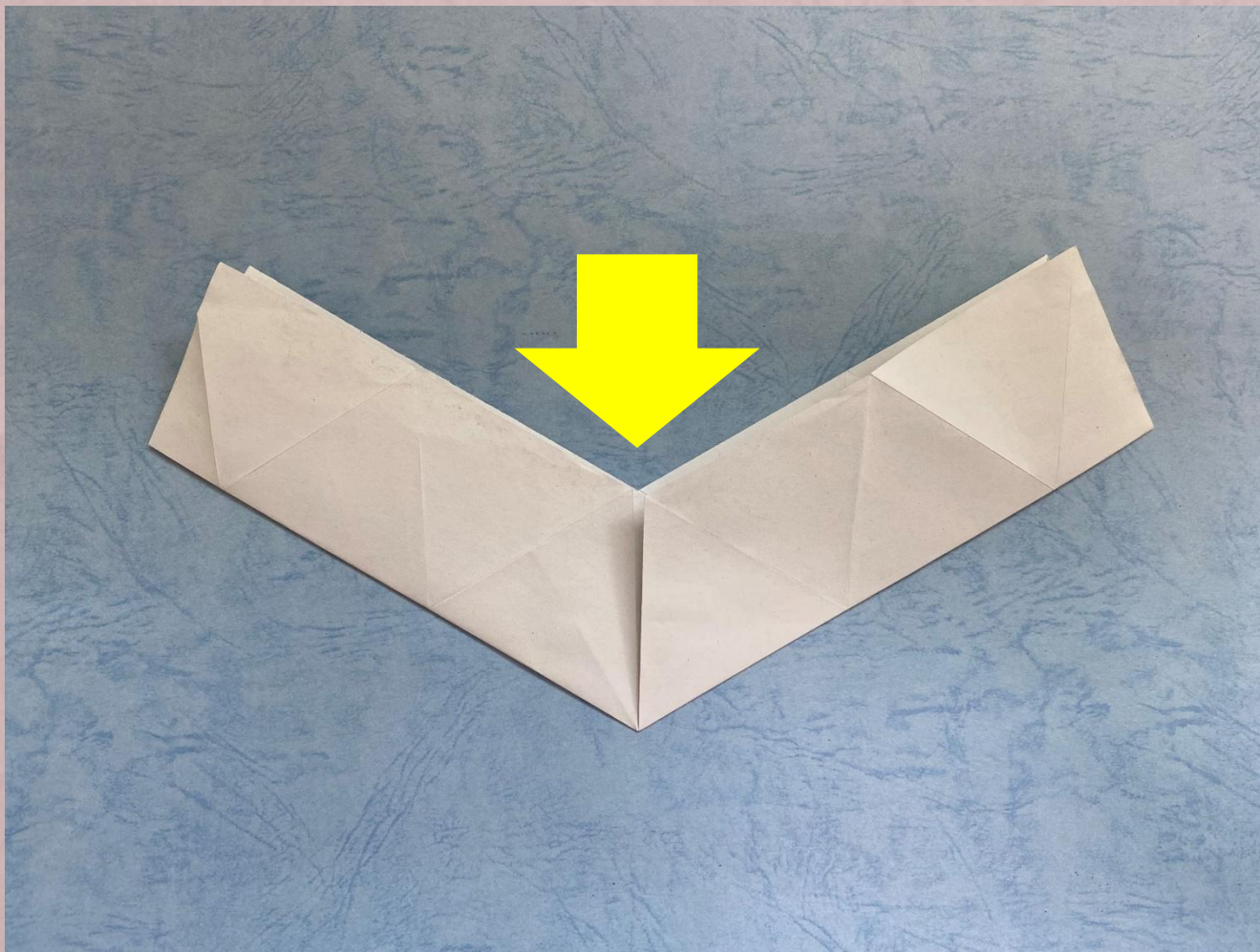
上方三角形捏往左方
下方三角形捏往右方



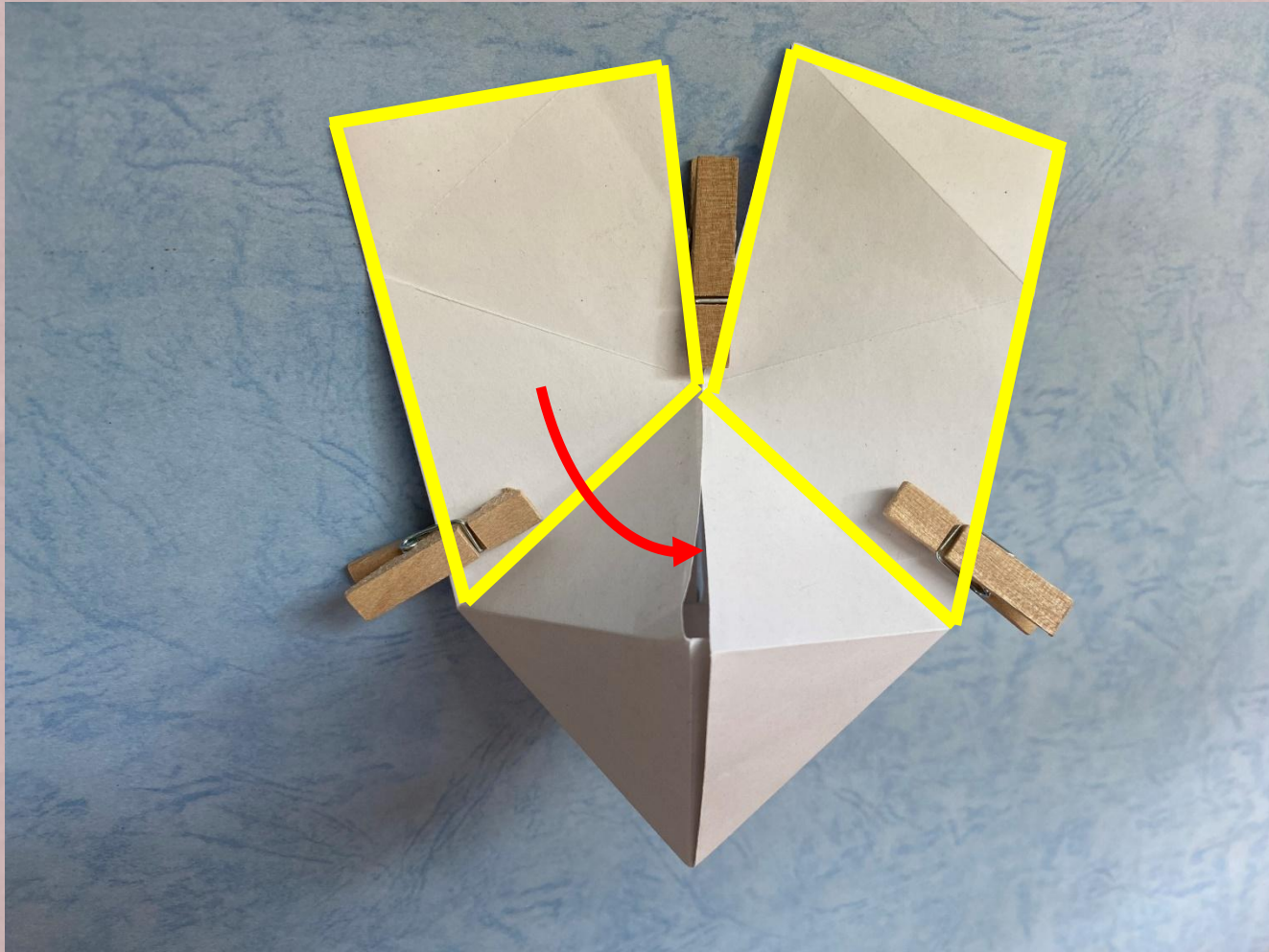
過程示意圖



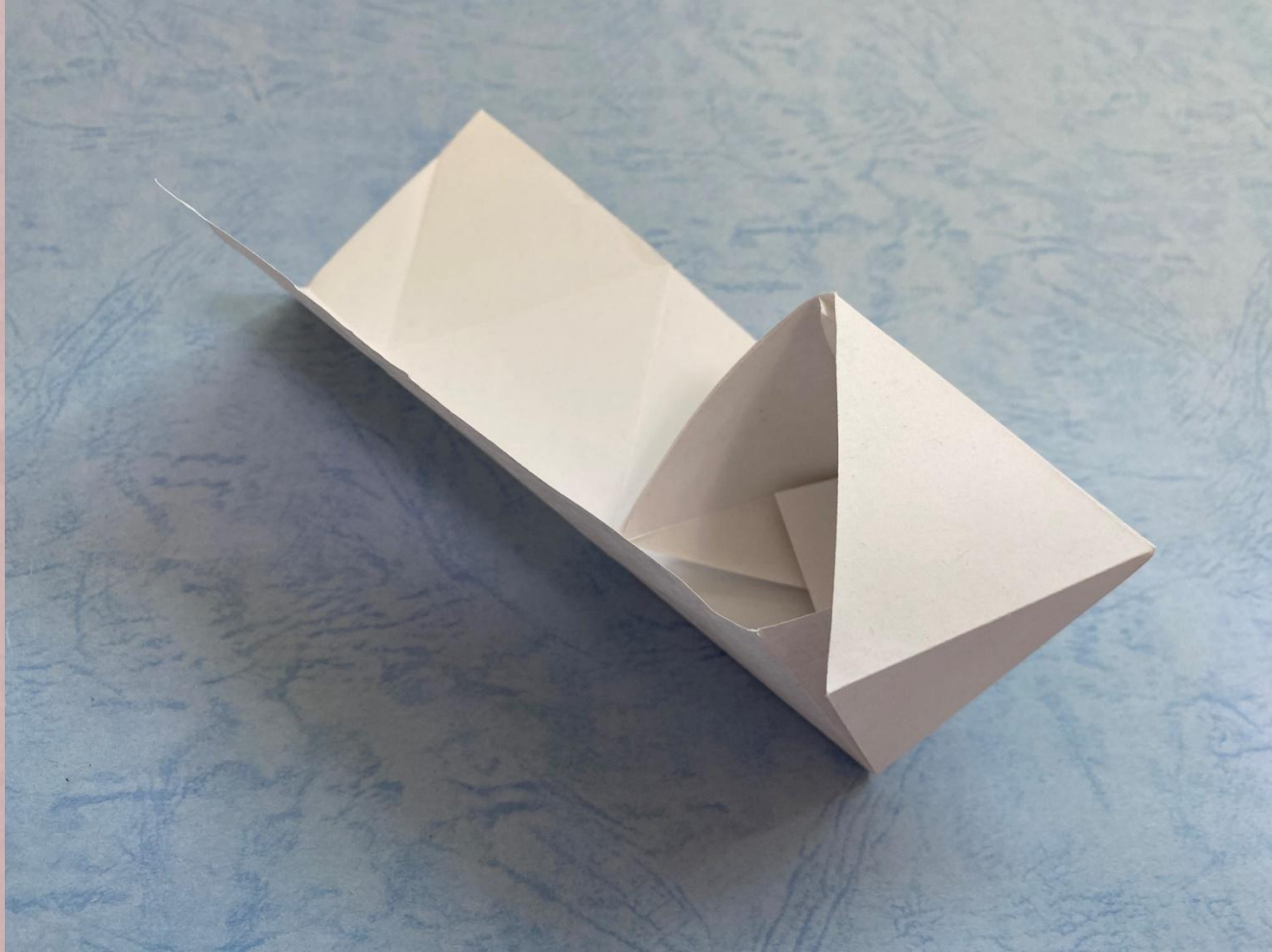
從箭頭處打開
將紙張鼓起形成正八面體



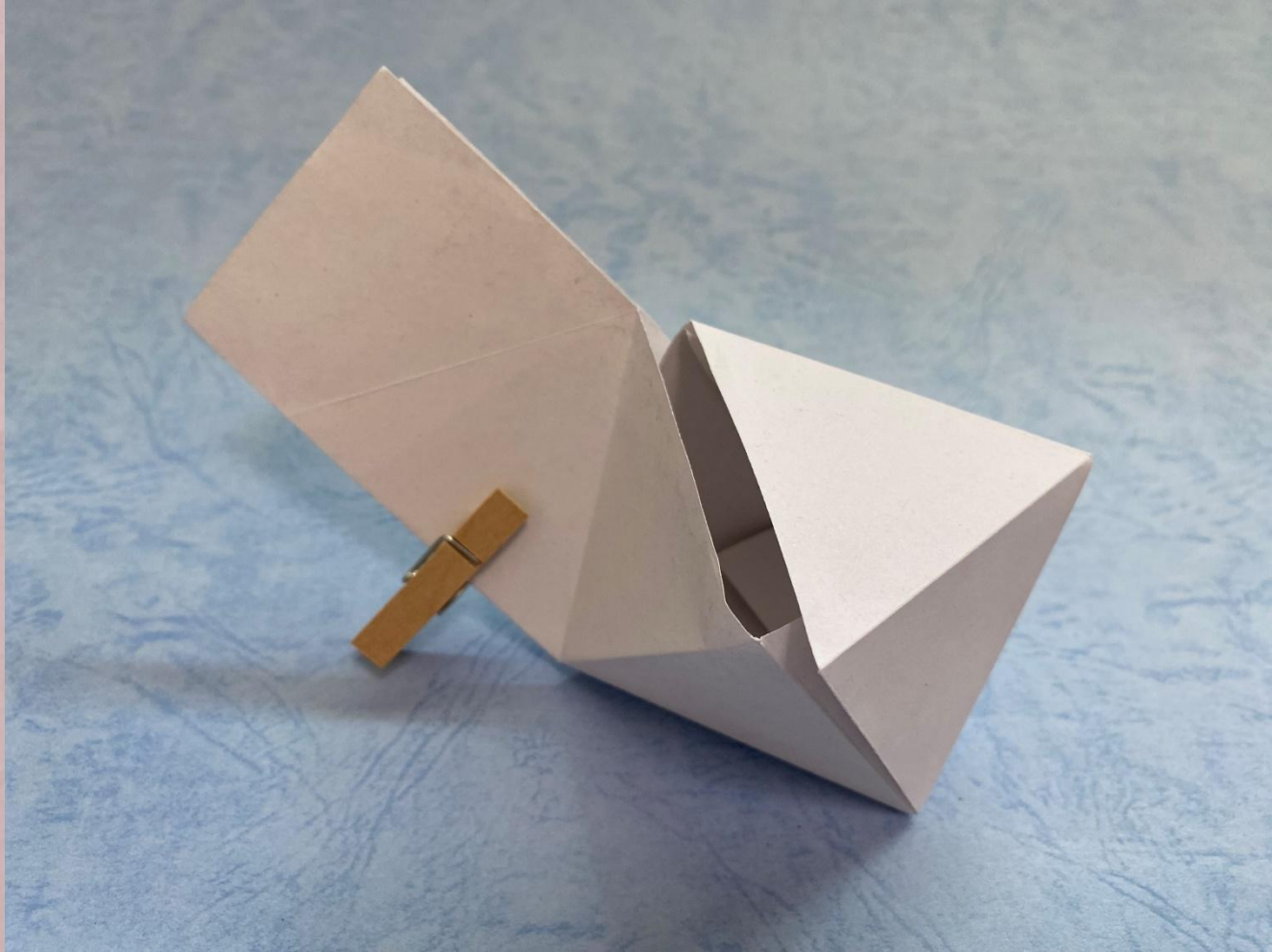
將左側塞入前方右側縫中
將右側塞入後方左側縫中



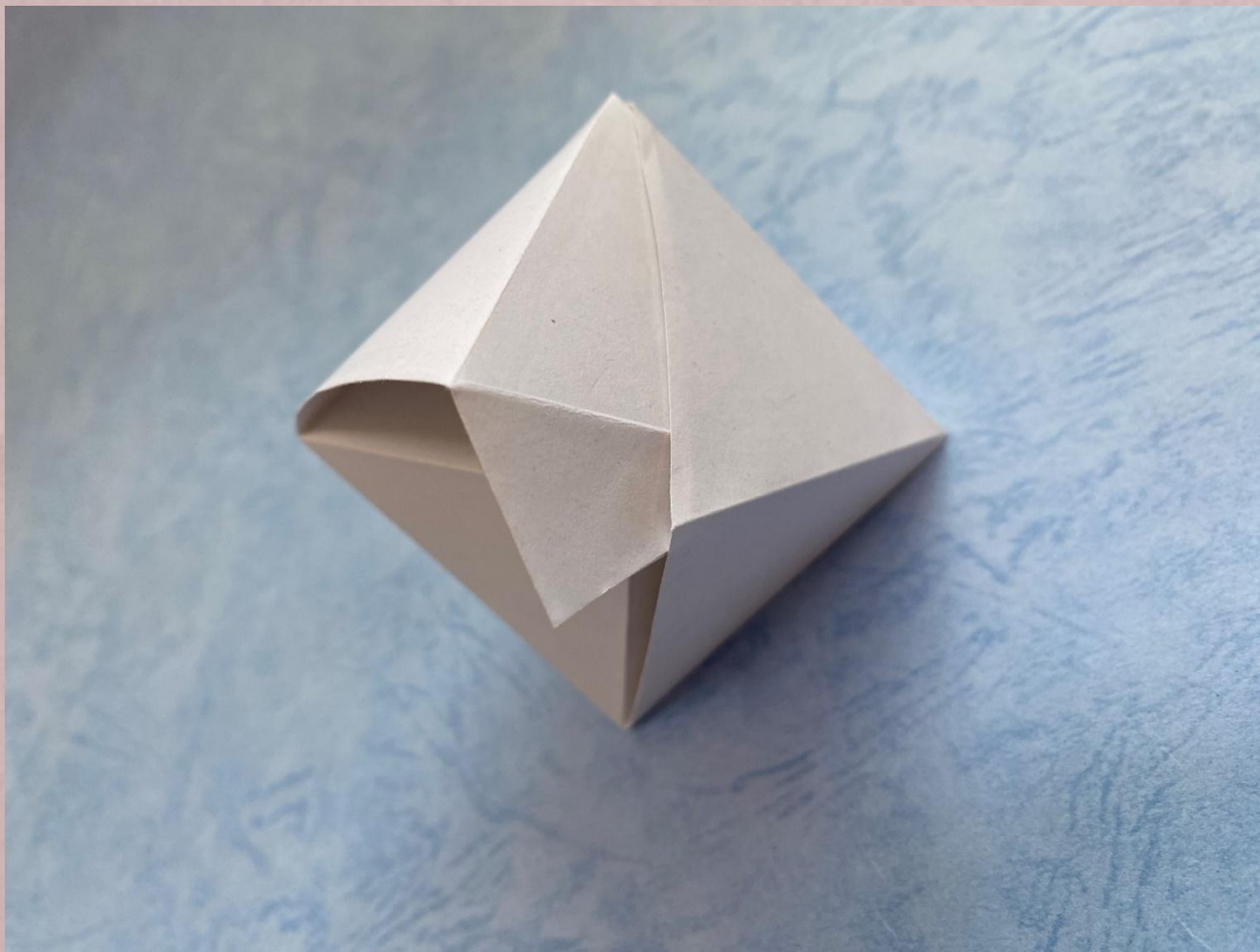
過程示意圖



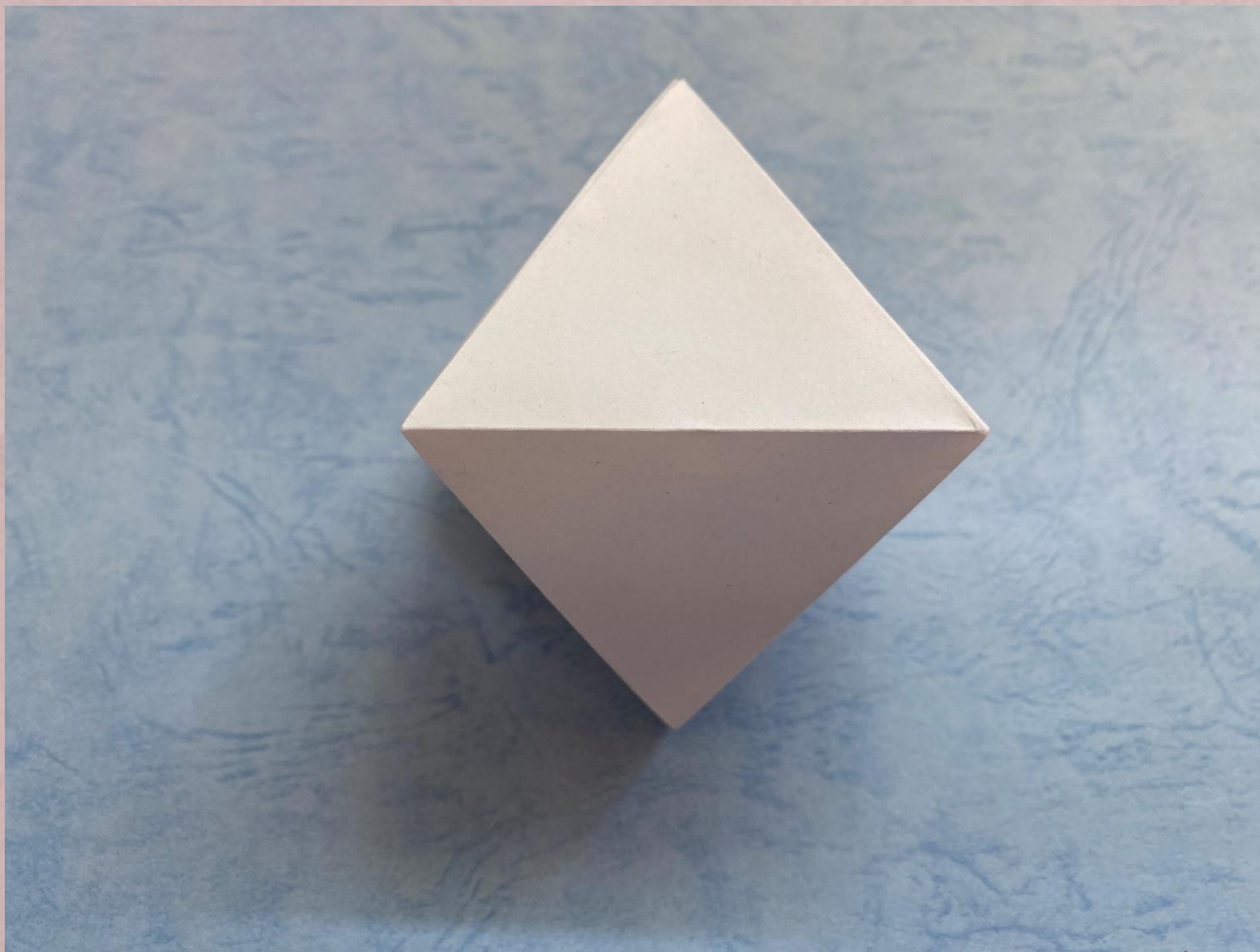
過程示意圖



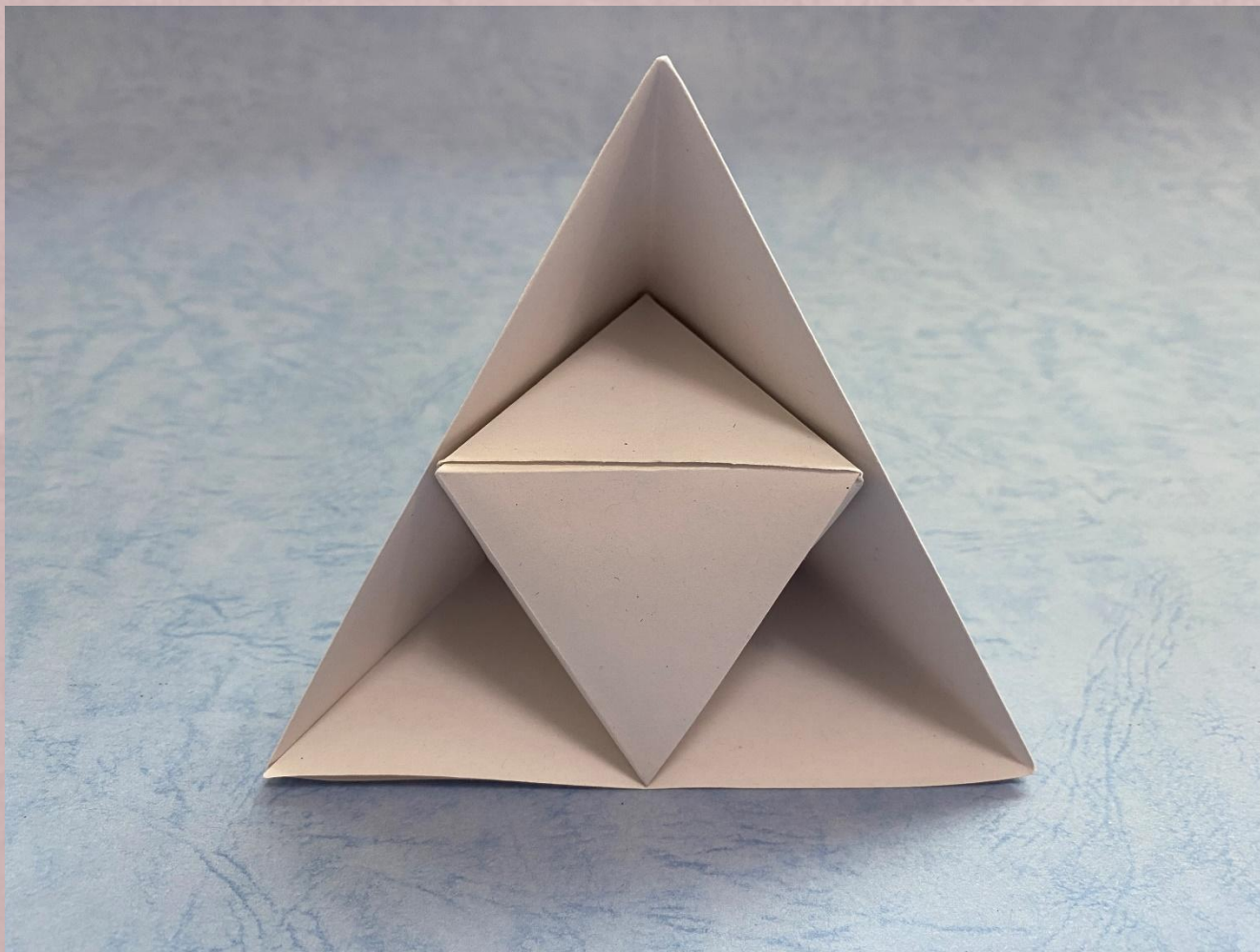
過程示意圖



完成正八面體



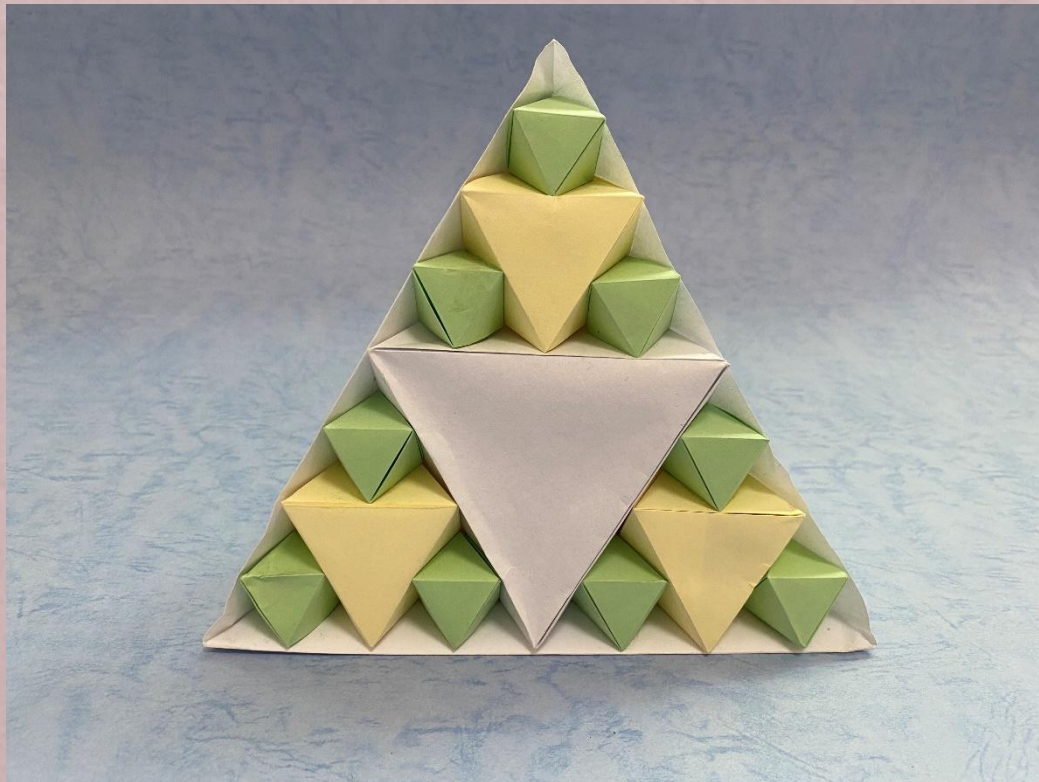
趕快試試正八面體
能否放入正四面體中吧!



提問時間

1. 如果四面體外套是用A3，且可放入第一層正八面體(白色)是用A3橫裁，則第二層正八面體(黃色)是要用A?的紙張橫裁呢？為什麼？

A5



提問時間

2. 完成該作品，單一色的話，需要幾張A3呢？
如果不同階層正八面體用不同色的話，紙張要如何準備呢？

1 張A3 = 4 張A5 = 16 張A7

1 張A4 = 2 張A5 = 8 張A7

	A3	A4	A5	A7
一階正八面體	2	0	0	0
二階正八面體	8	4	2	0
三階正八面體	32	16	8	2

好康分享：



社群QR



YouTubeQR

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