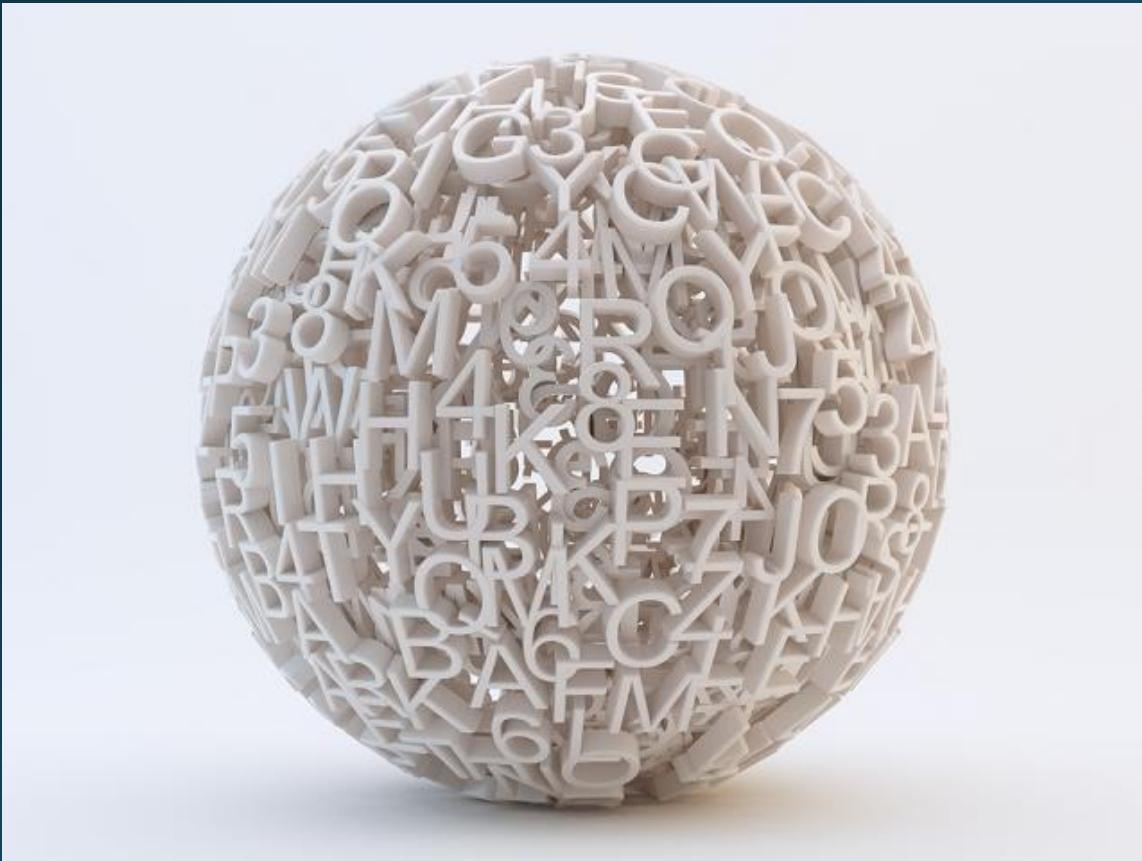




# 3D Printing

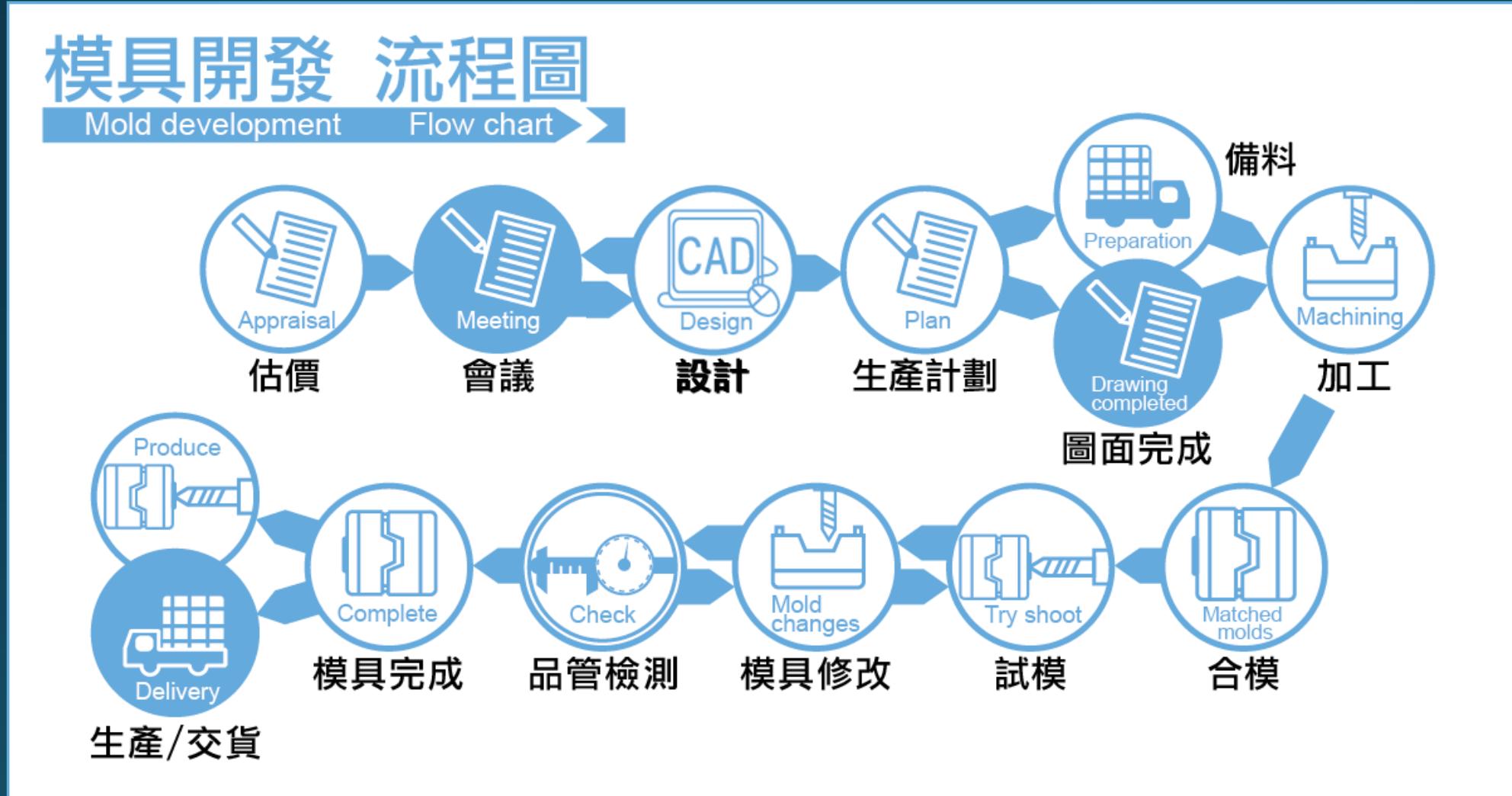


# Why is 3D Printing Going Viral?

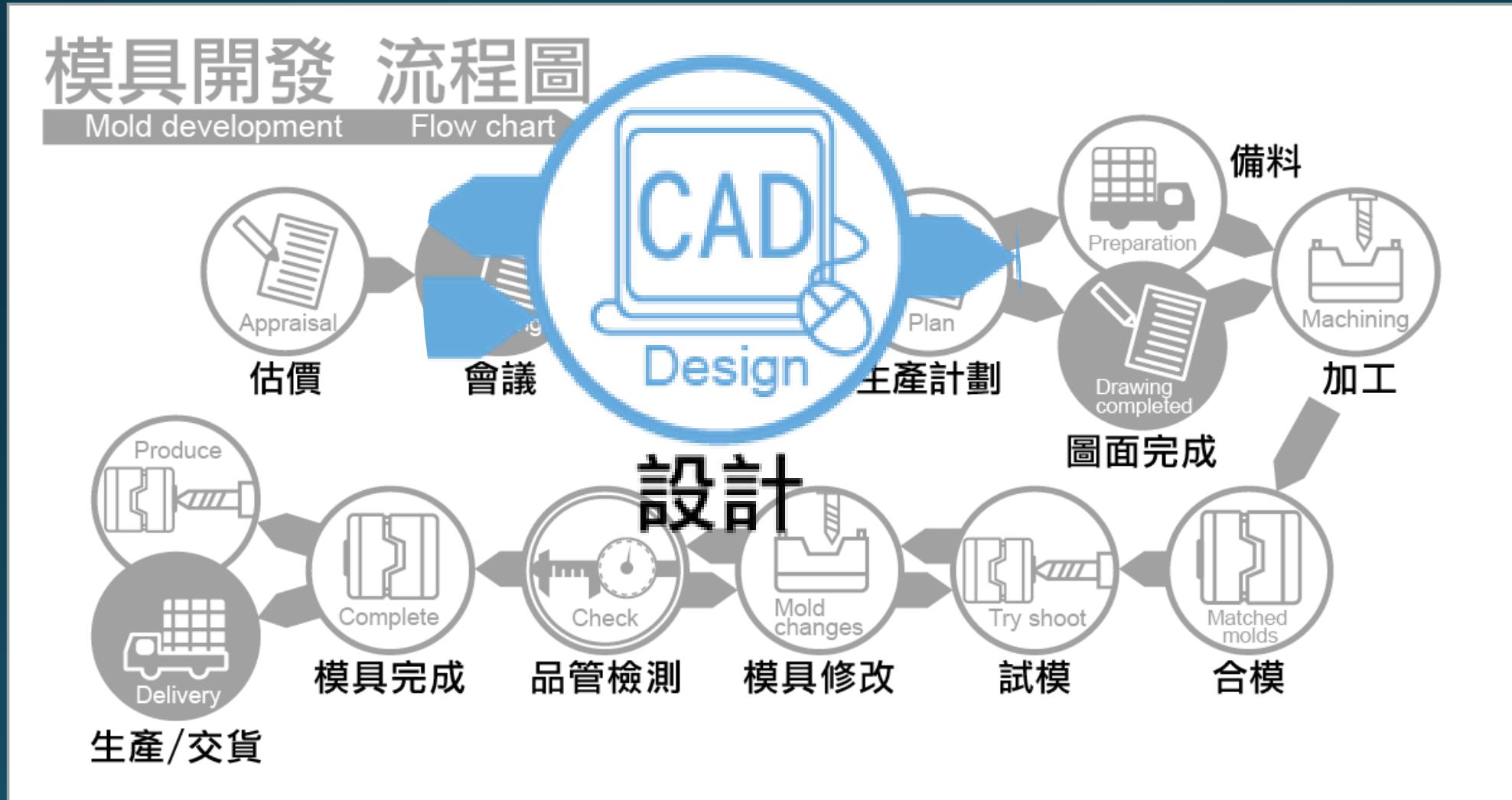
1.不用模具生產



# Why is 3D Printing Going Viral?



# Why is 3D Printing Going Viral?



# Why is 3D Printing Going Viral?

- 1.不用模具生產
- 2.縮短開發週期



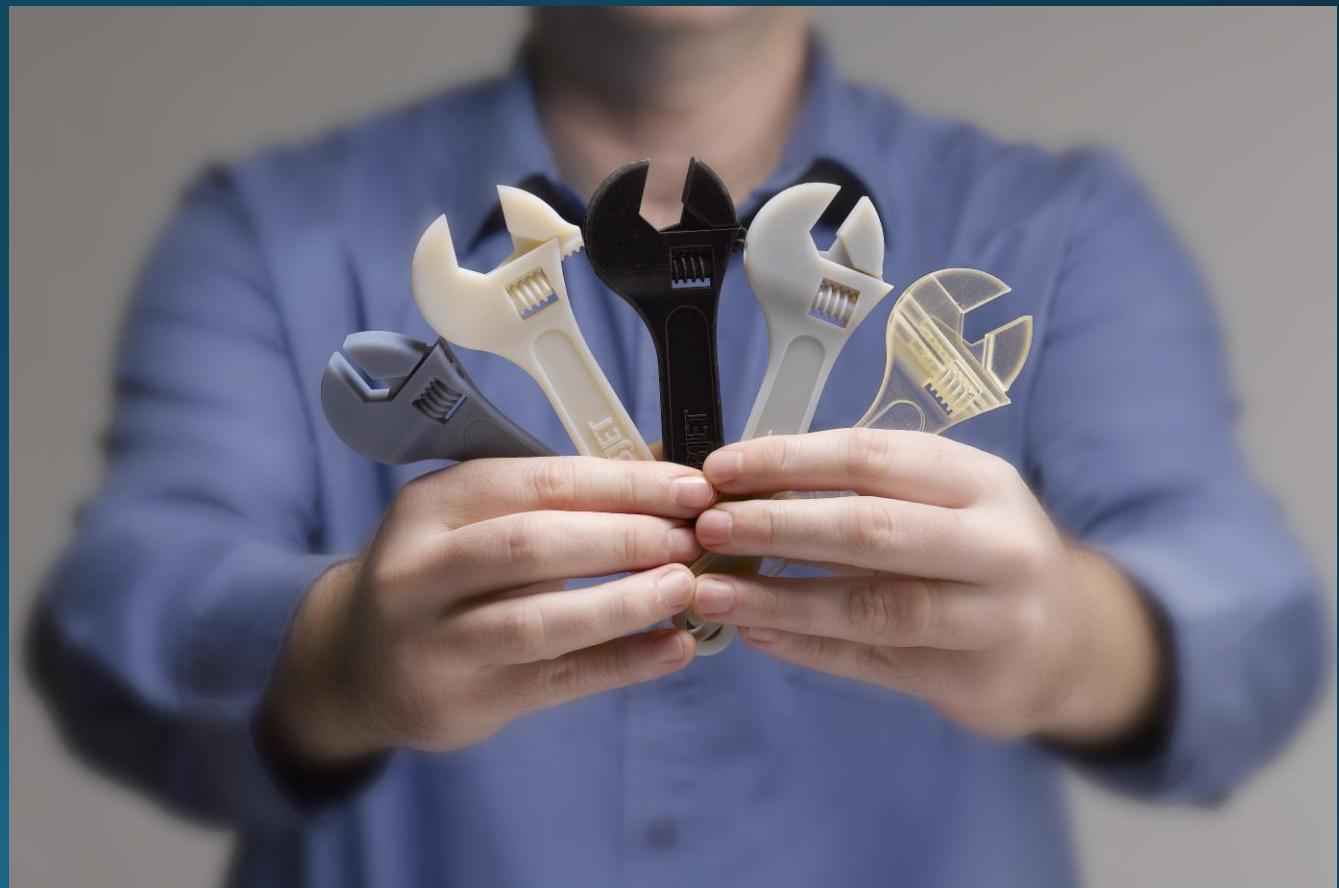
# Why is 3D Printing Going Viral?

- 1.不用模具生產
- 2.縮短開發週期
- 3.個性化客製化



# Why is 3D Printing Going Viral?

- 1.不用模具生產
- 2.縮短開發週期
- 3.個性化客製化



# Why is 3D Printing Going Viral?

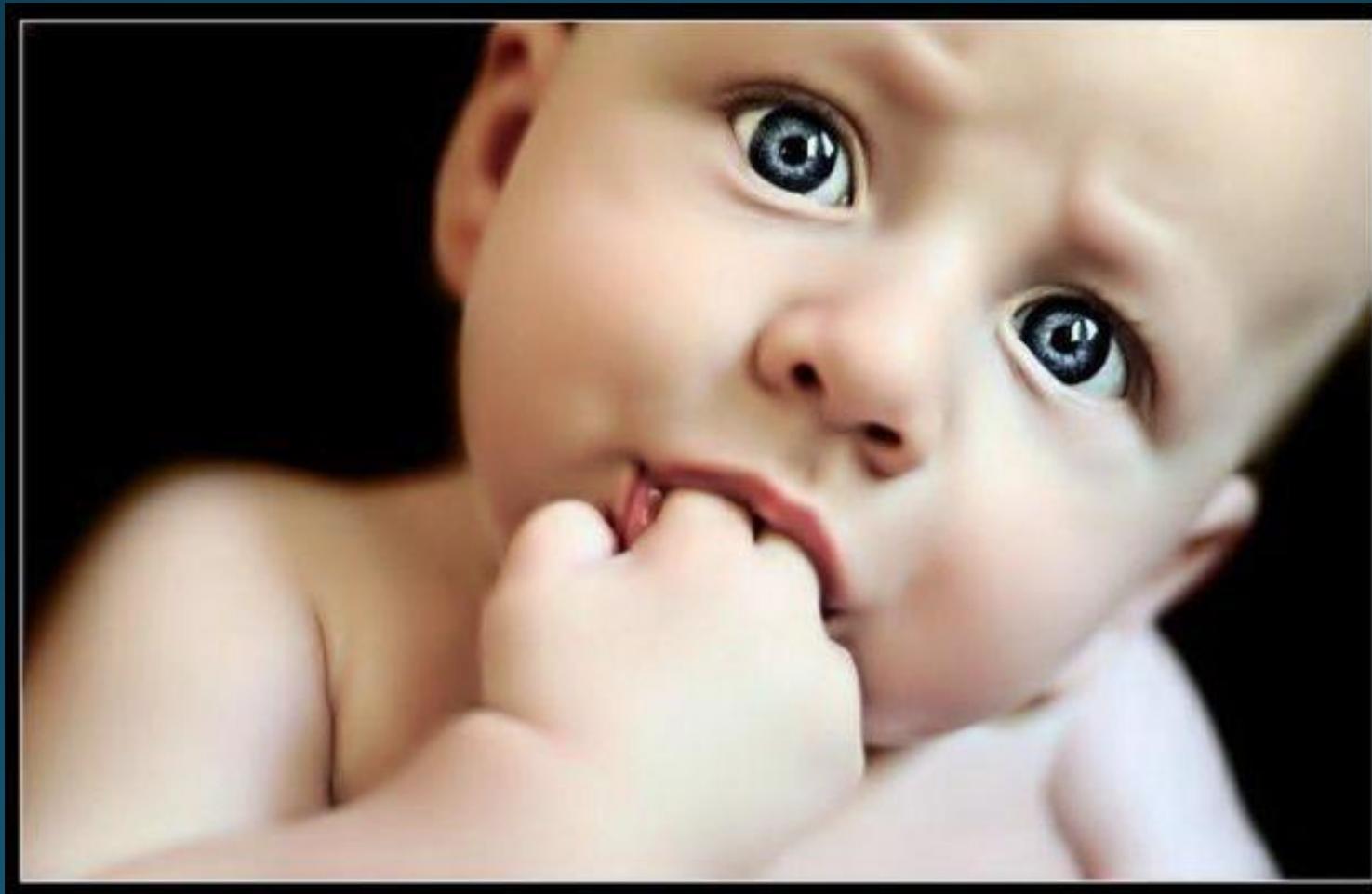
- 1.不用模具生產**
- 2.縮短開發週期**
- 3.個性化客製化**
- 4.用於醫療用途**

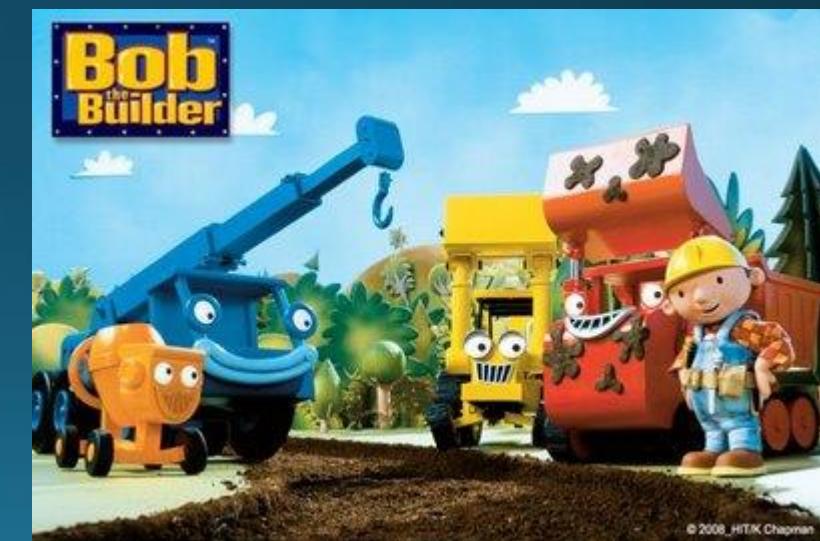


# Why is 3D Printing Going Viral?



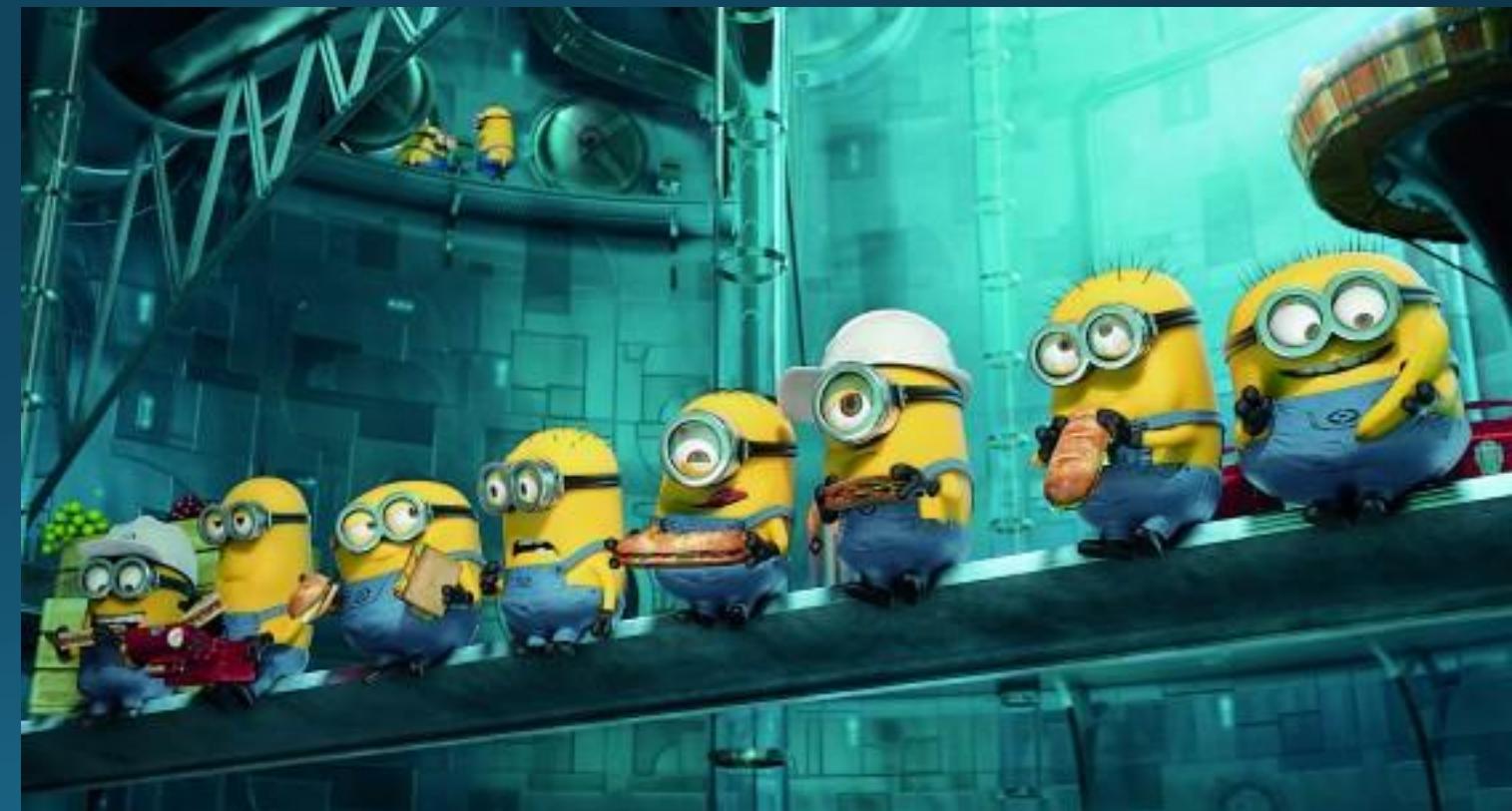
# What is SketchUp?



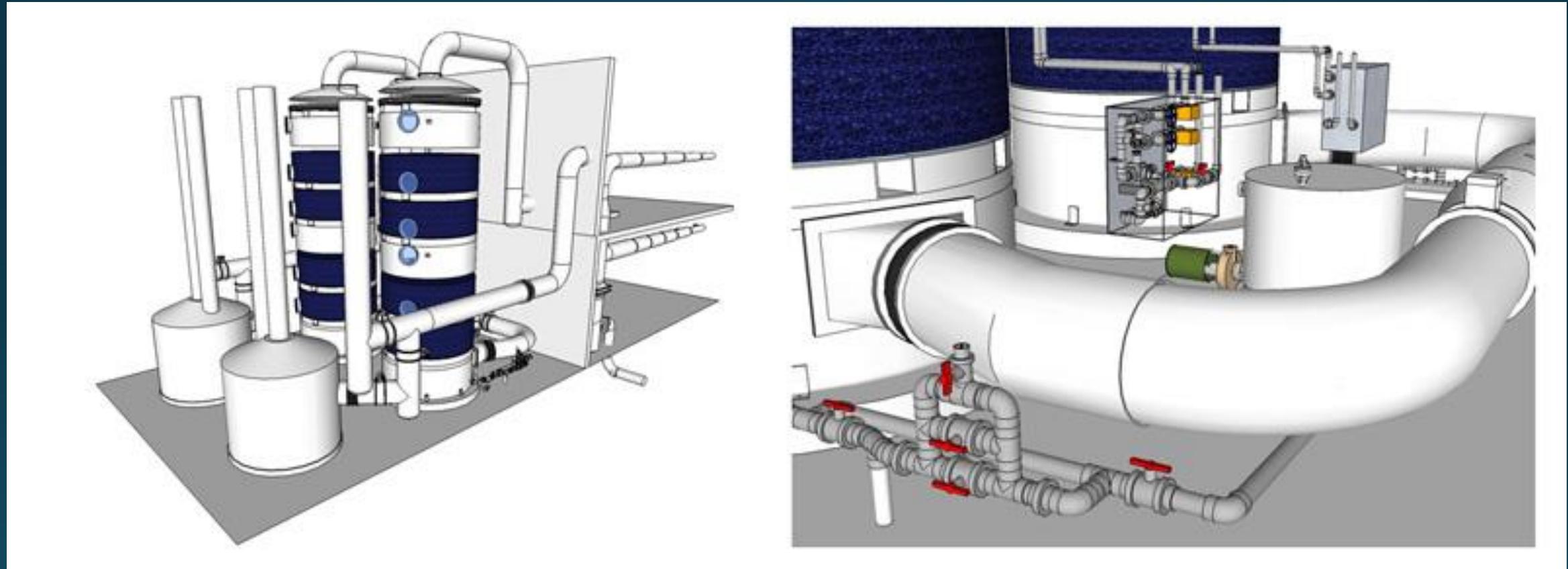
© 2008 HITK Chapman

# What is SketchUp?



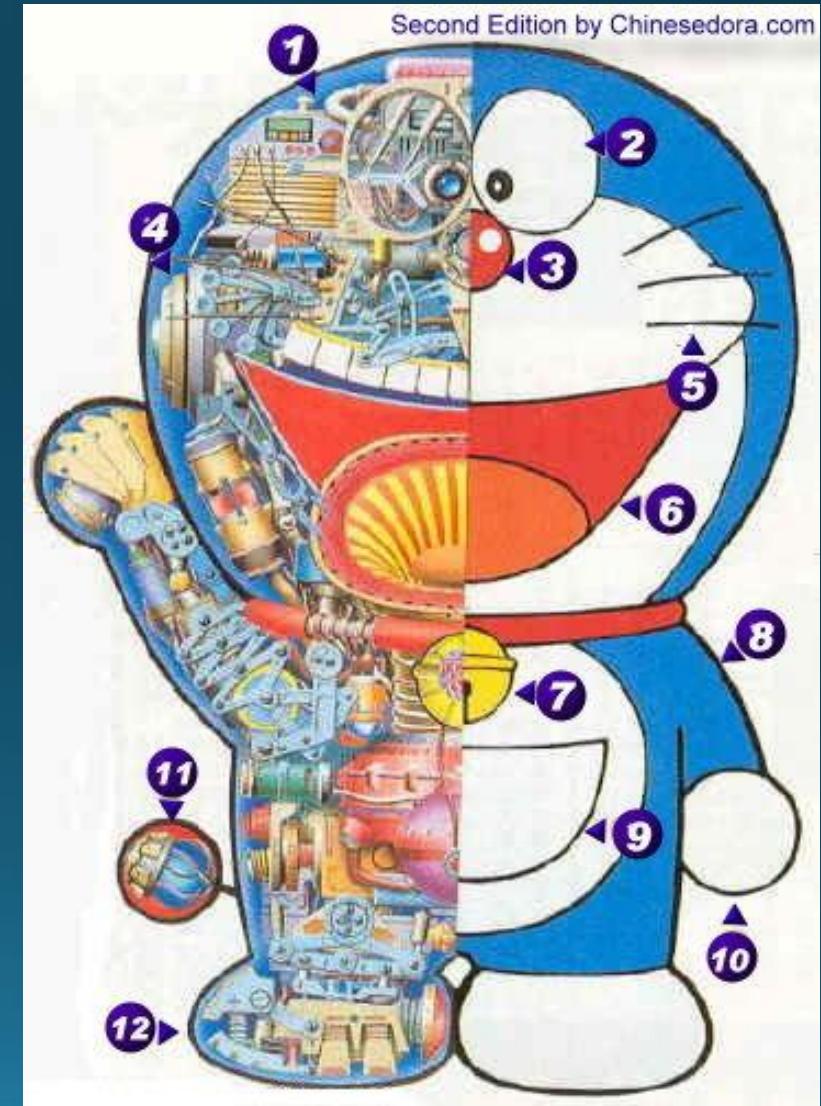
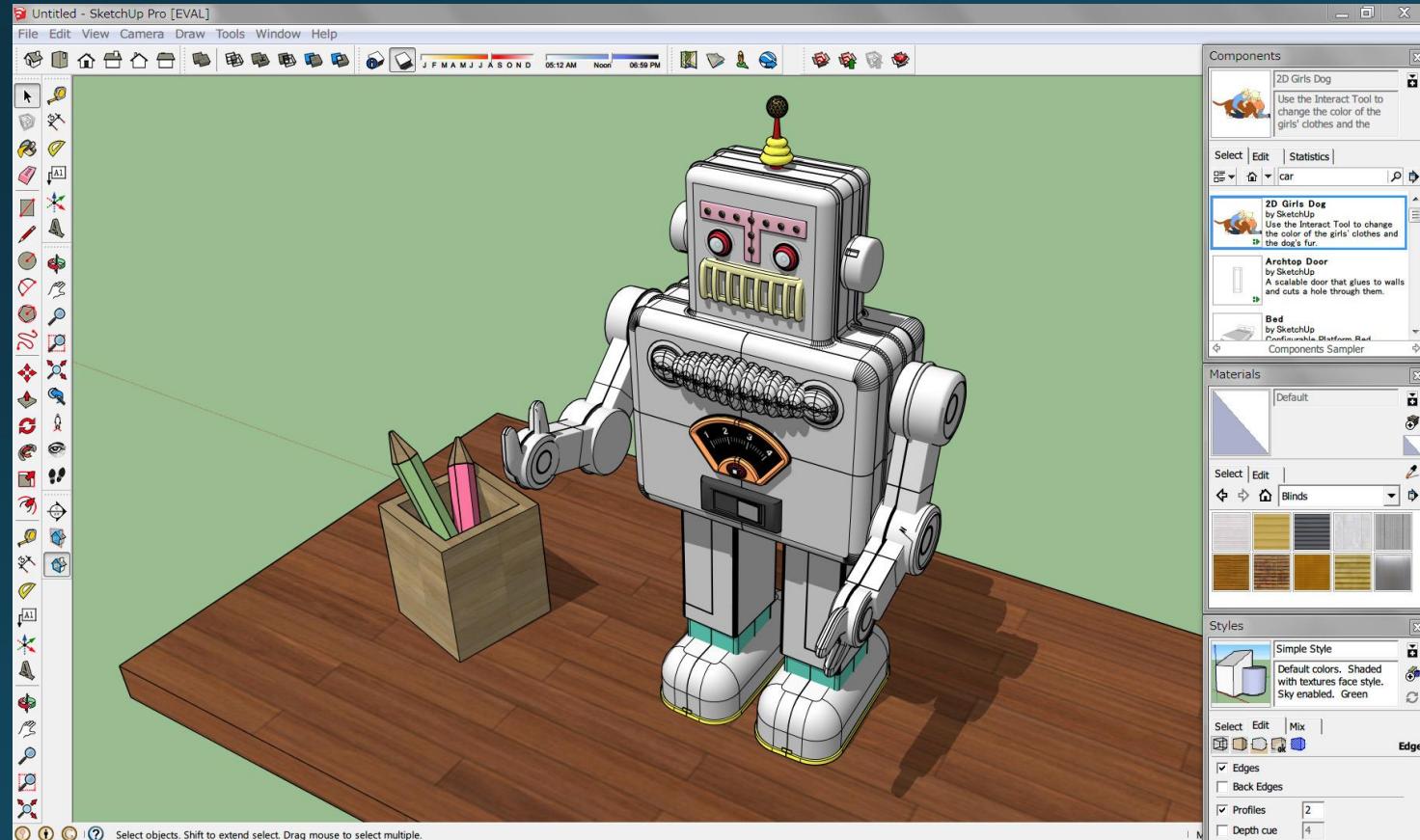


# What is SketchUp?





# What is SketchUp?

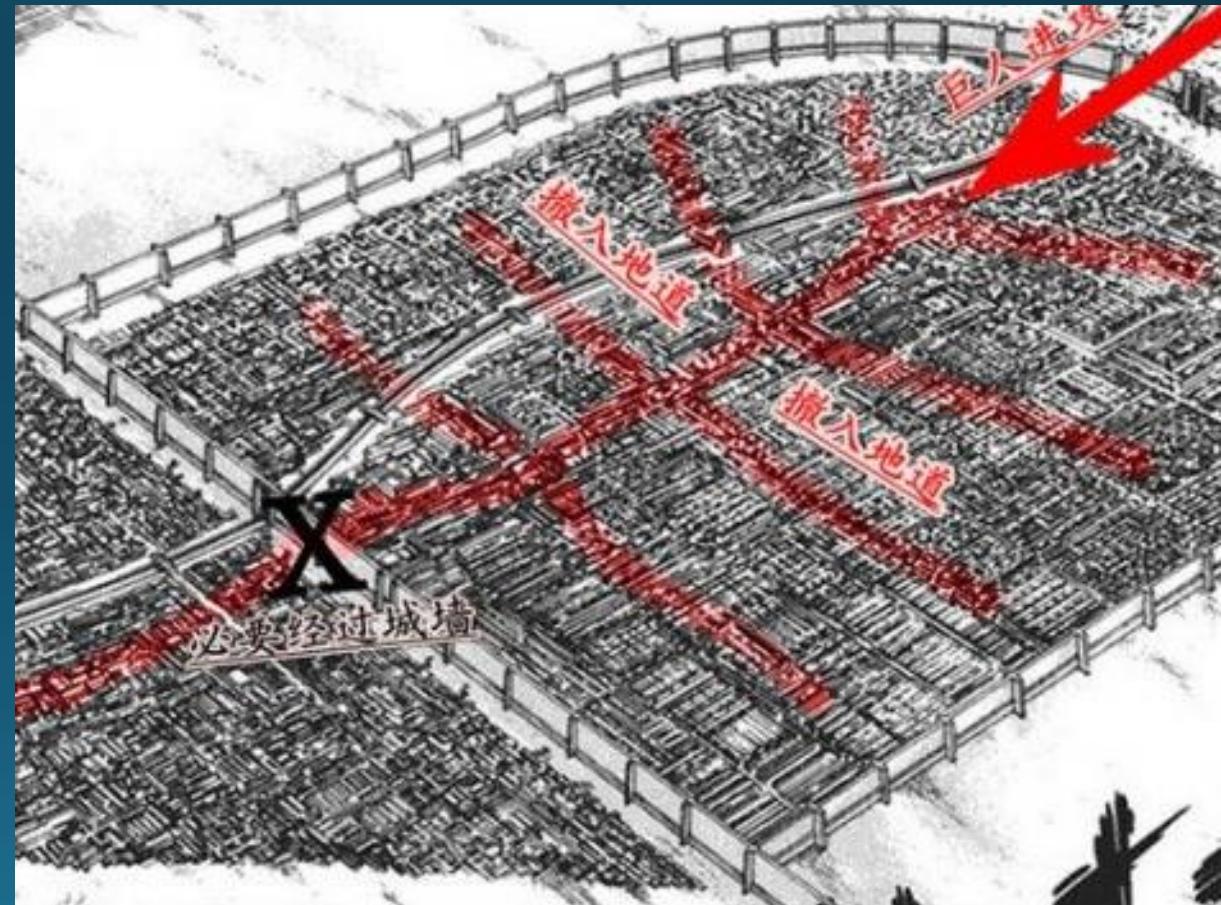
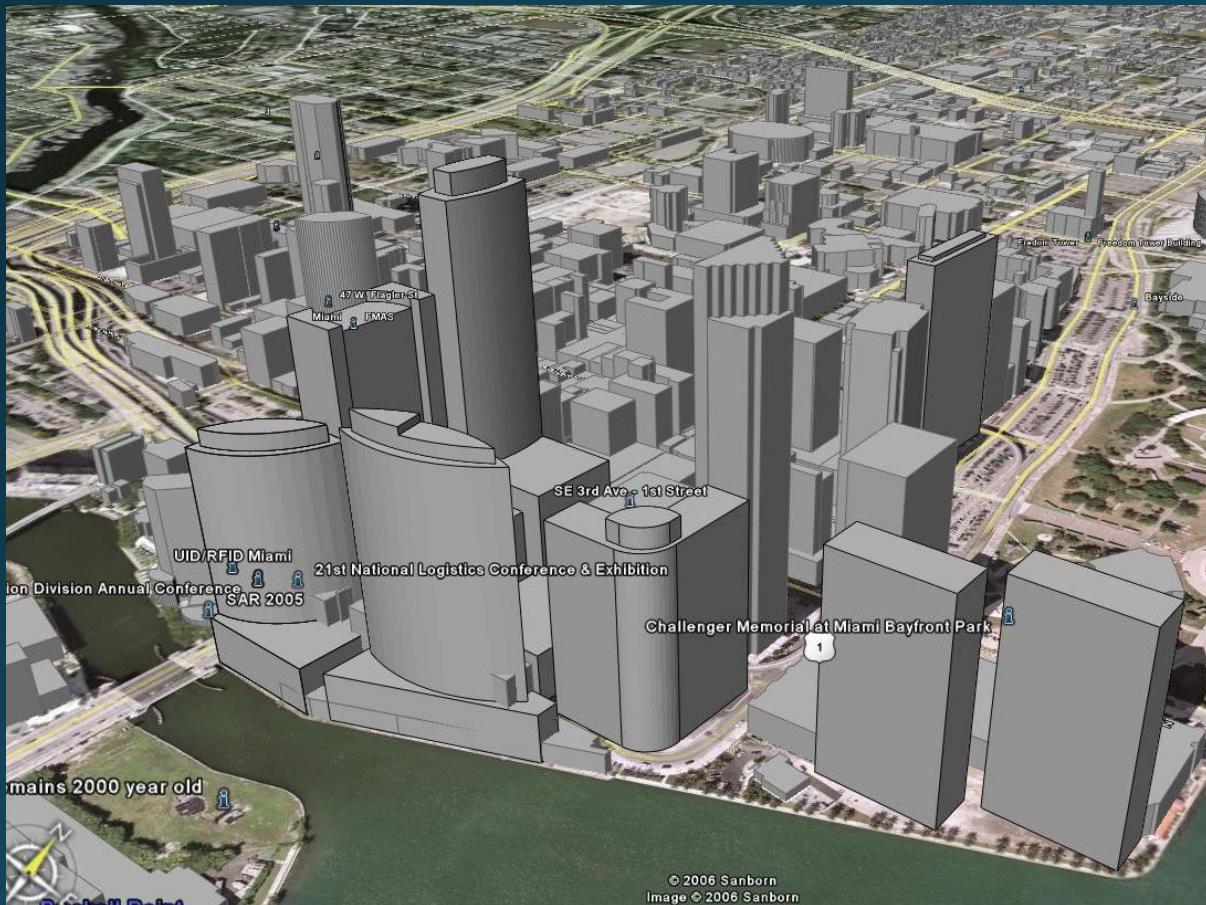


# What is SketchUp?

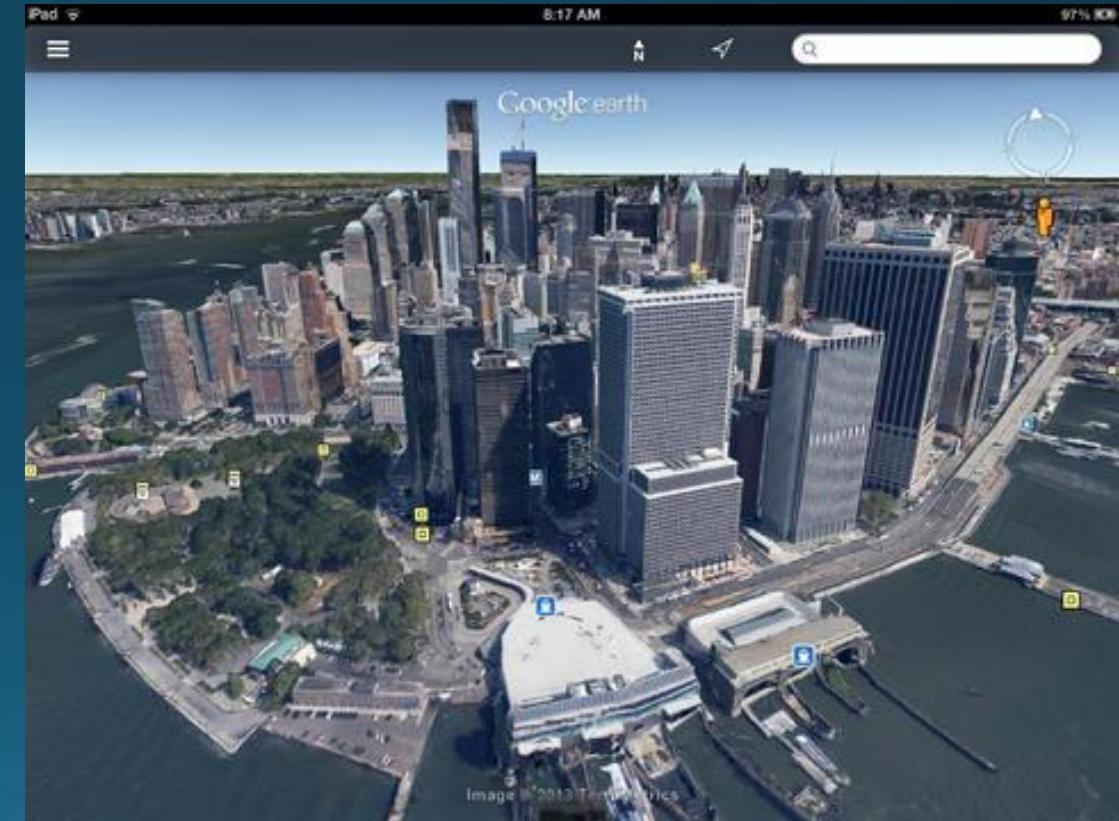
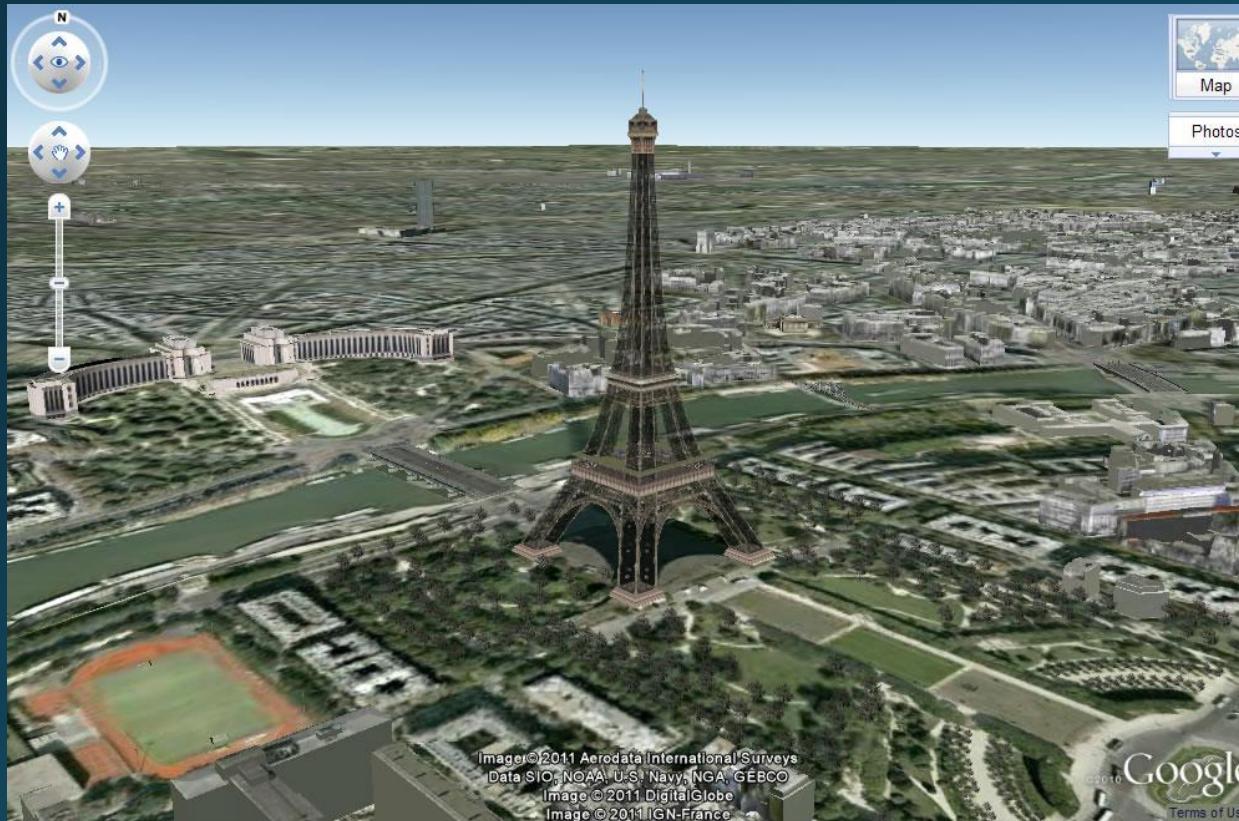




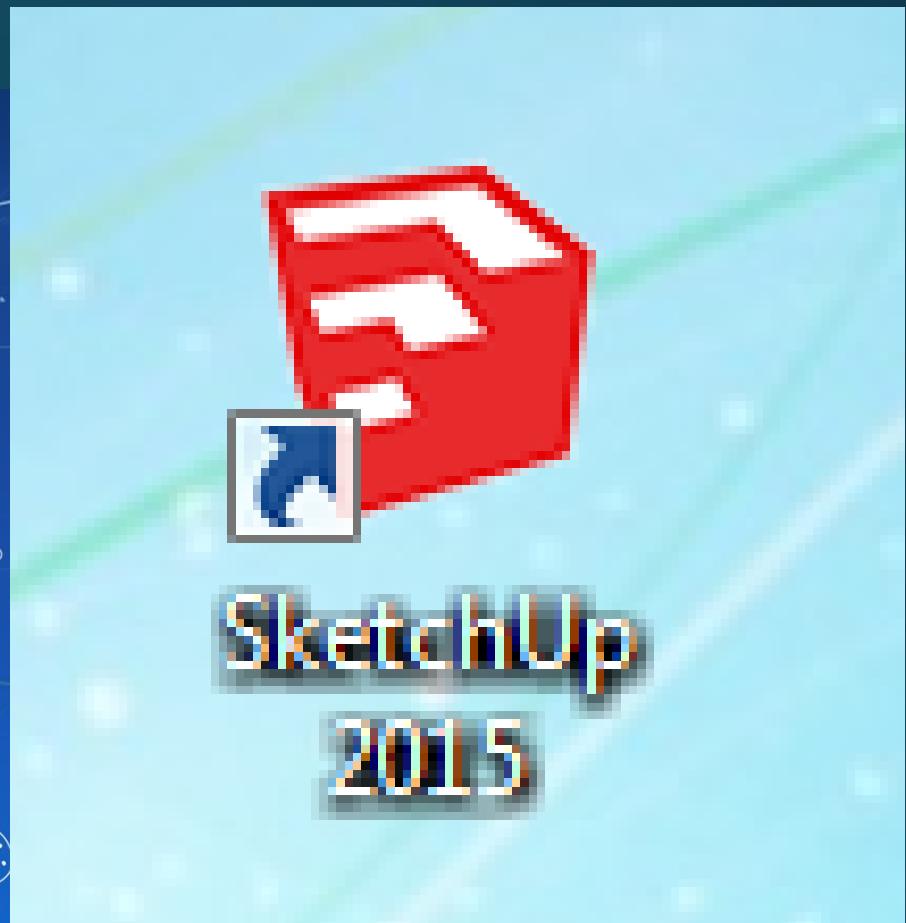
# What is SketchUp?



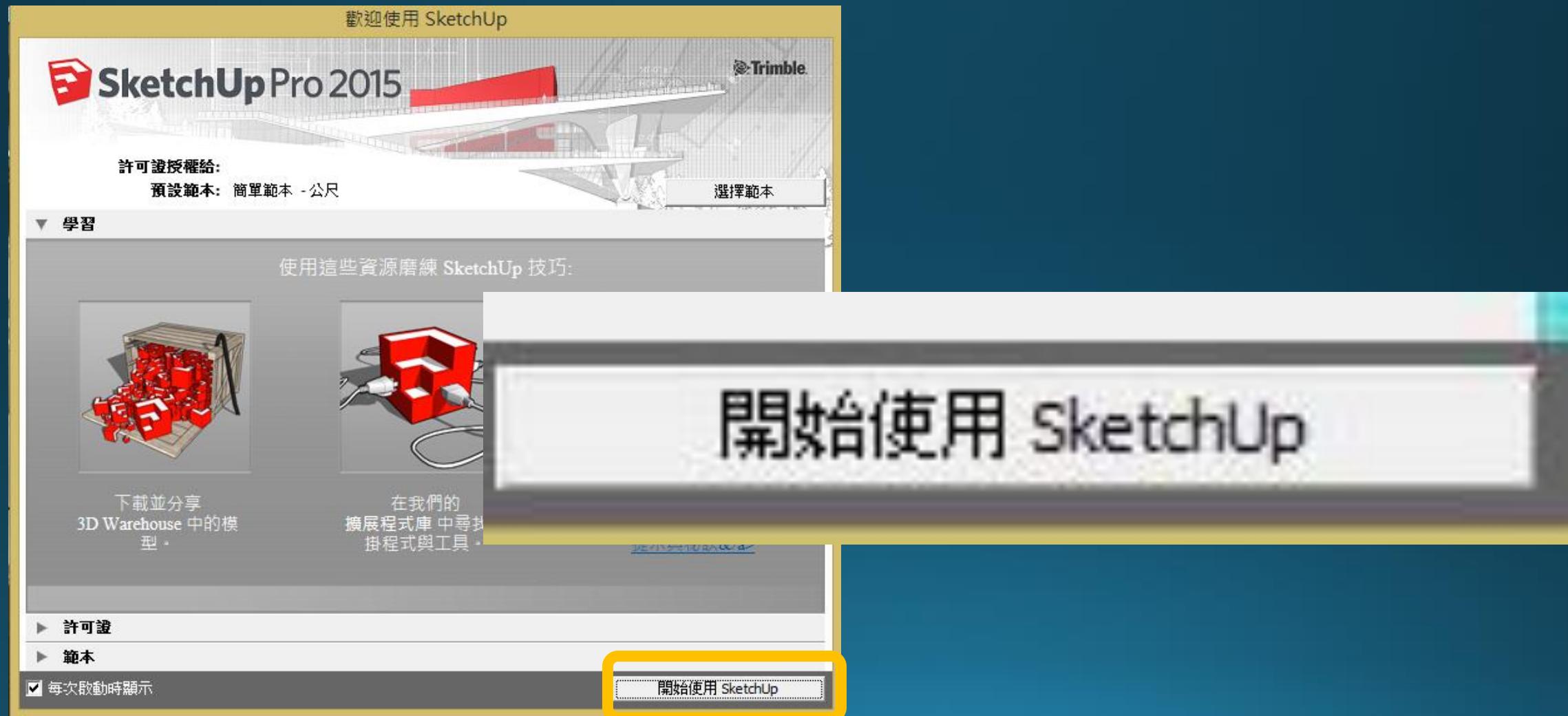
# SketchUp and Google Earth



# 開啟SketchUp

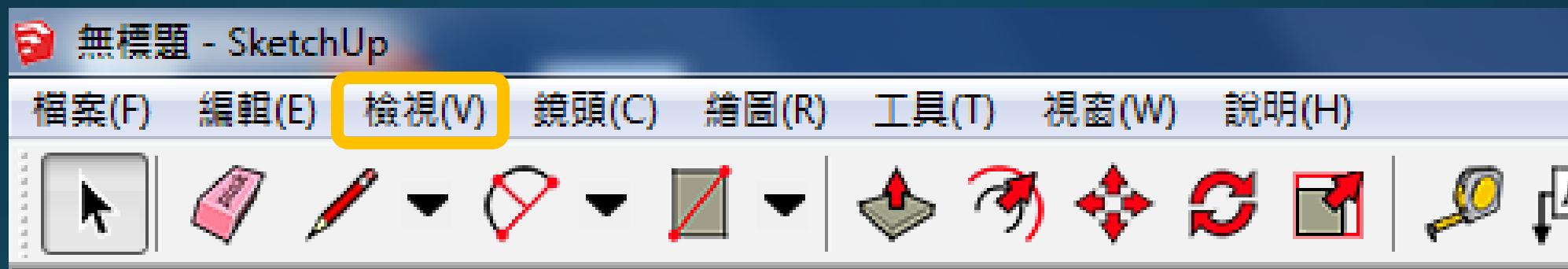


# 開啟SketchUp



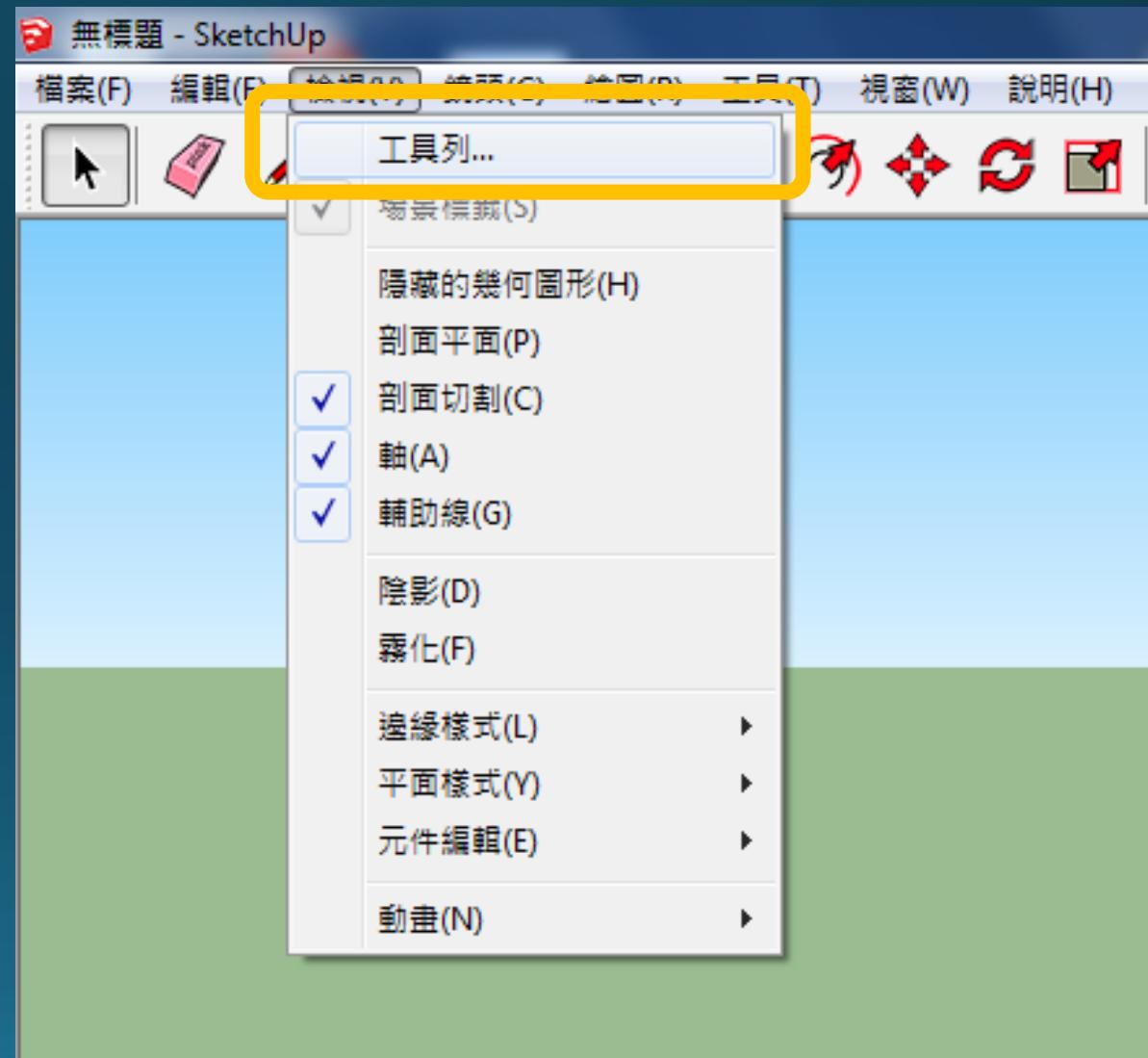
# 調整工具列

## 檢視



# 調整工具列

檢視->工具列



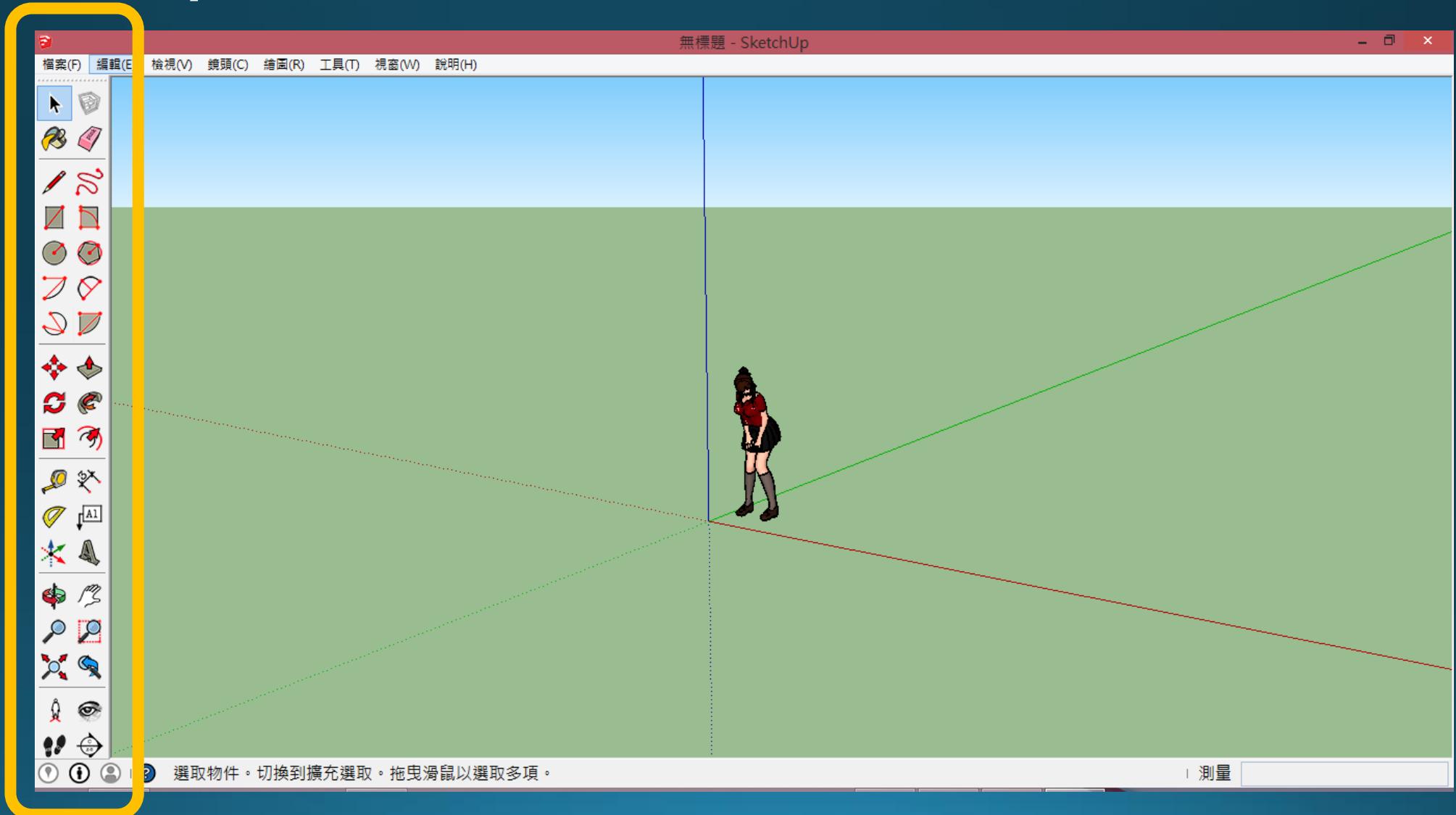
# 調整工具列

檢視->工具列->大工具集(打勾)



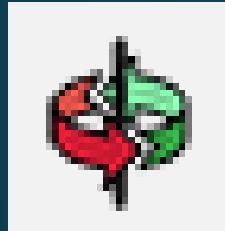
# SketchUp 介面

## 工具列





# SketchUp基本操作



環繞

= 下壓滑鼠滾輪

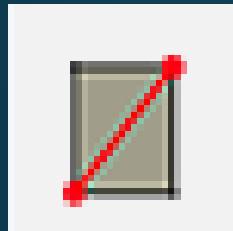


平移

= **shift** + 下壓滑鼠滾輪

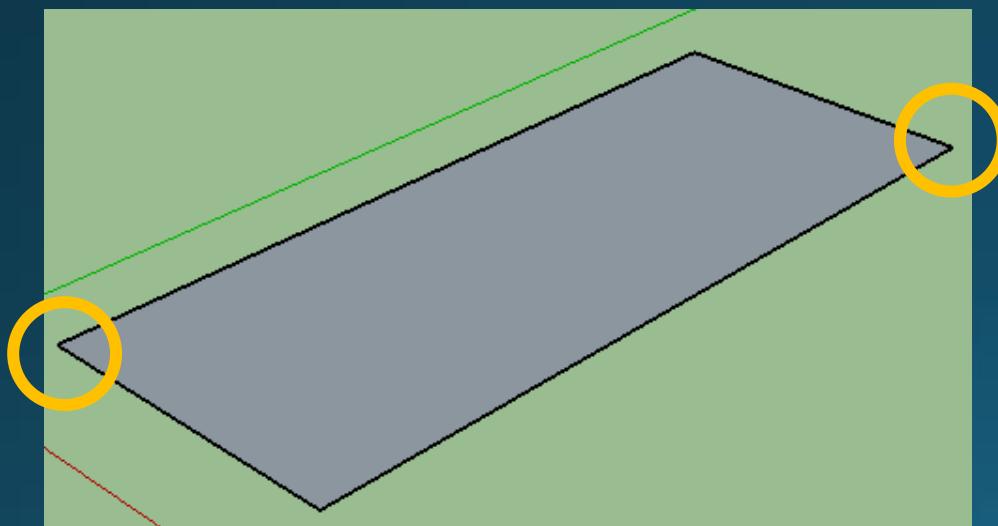


# SketchUp基本操作



矩形

End

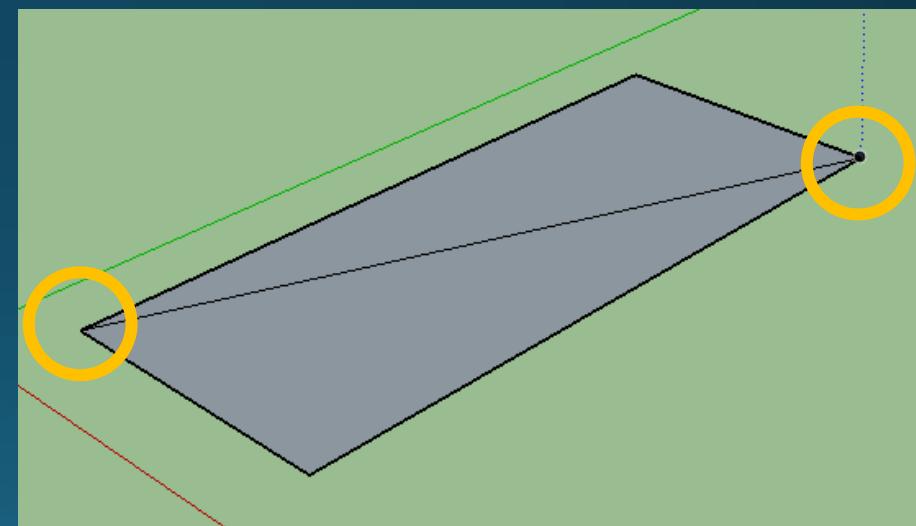


Start



直線

End



Start

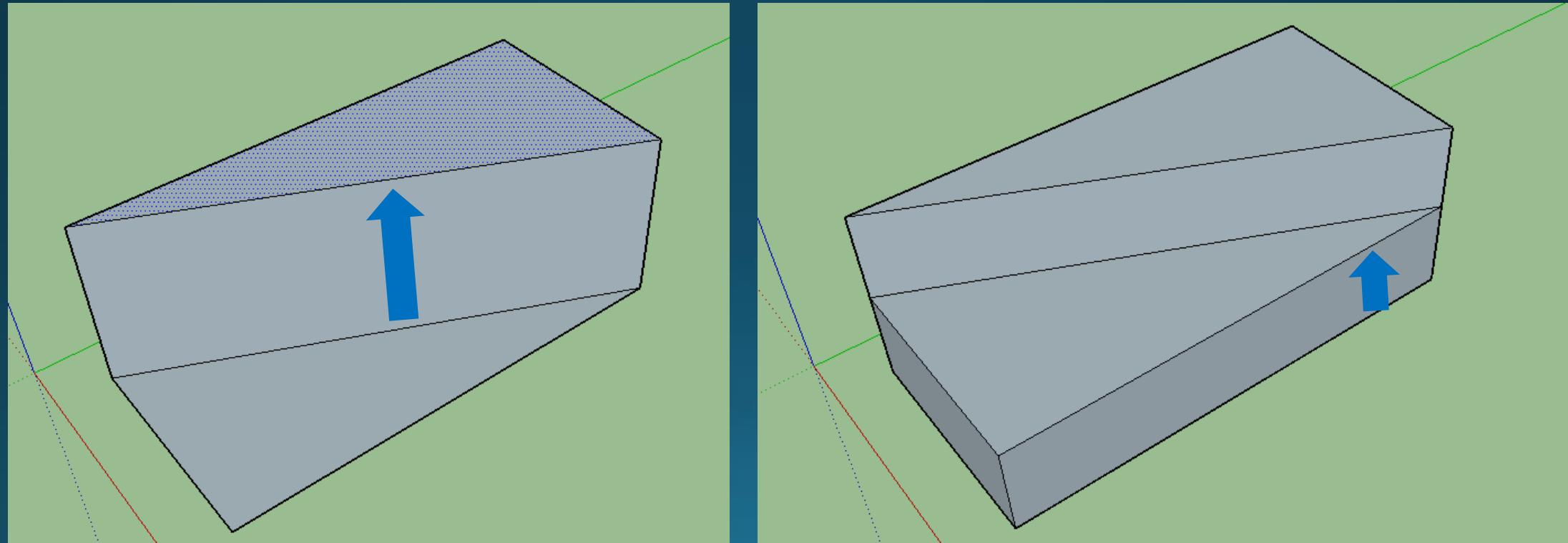
Hint:點一下左鍵開始，再點一次結束，不須長按



# SketchUp基本操作

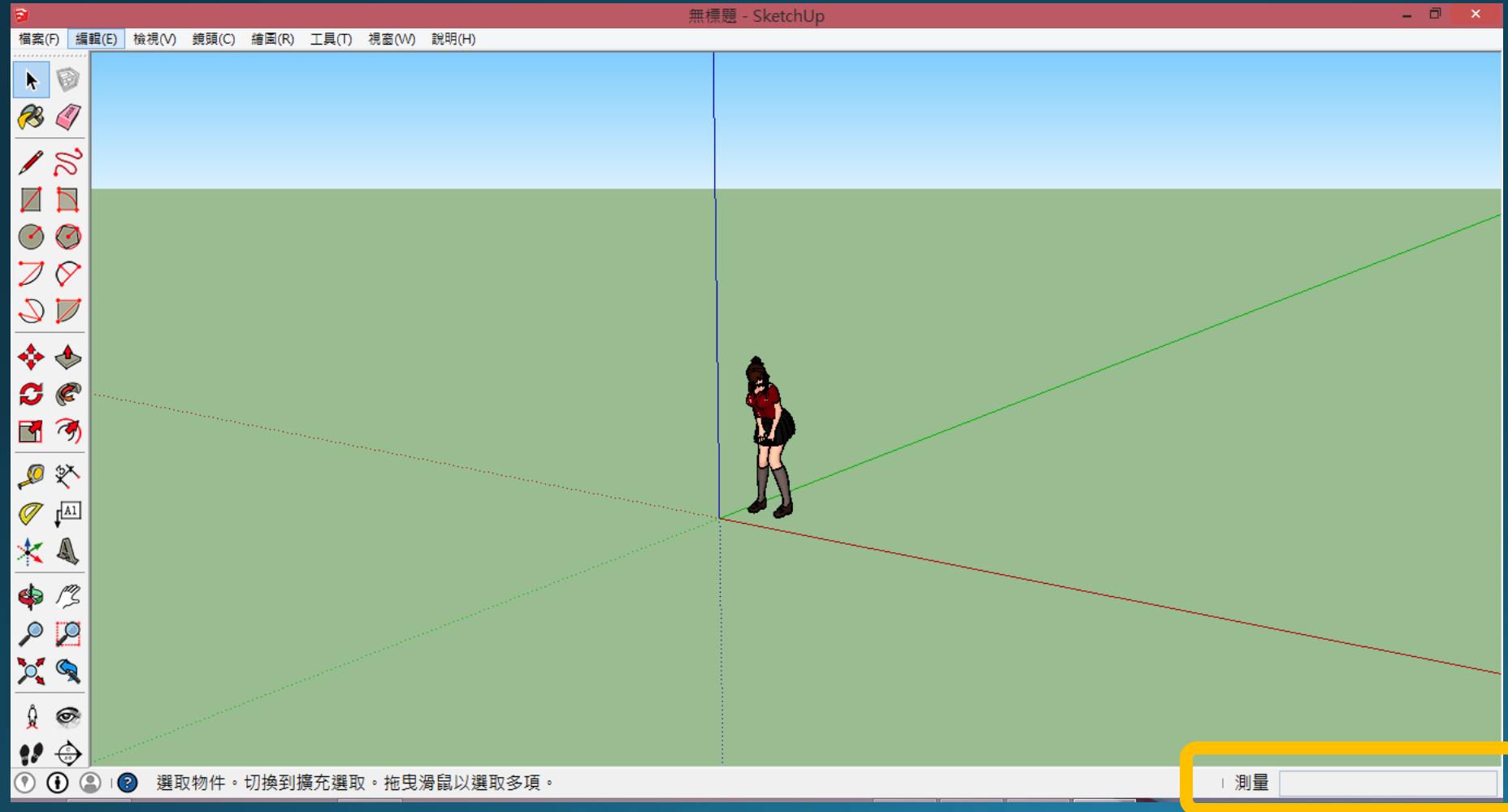


推/拉



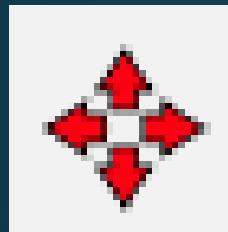
Hint:點一下選推/拉的平面 > 移動 > 點一下左鍵

# SketchUp基本操作

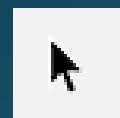
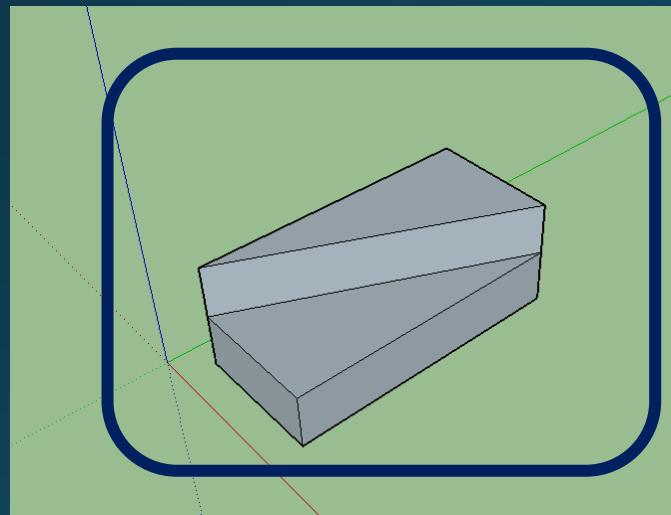




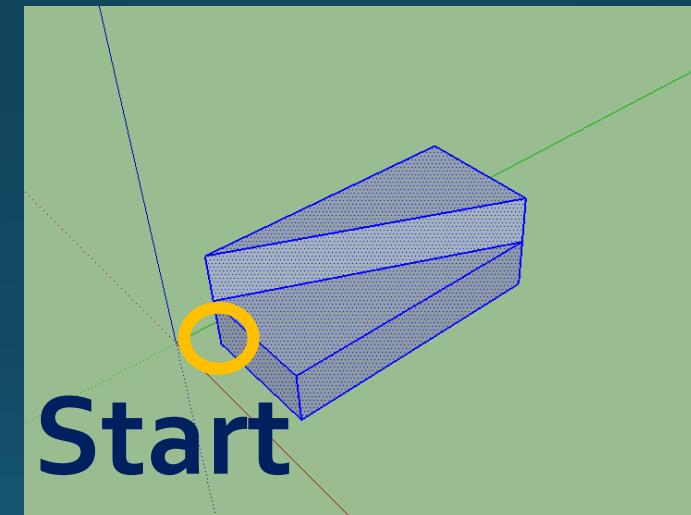
# SketchUp基本操作



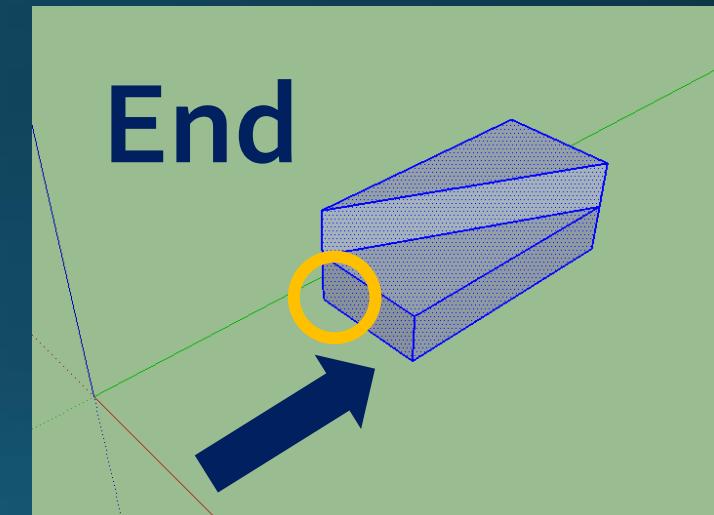
移動



選取物件



Start



End



隨意點選一個位置作為起點，點選另一個位置作為終點，物件會隨著路徑相對移動

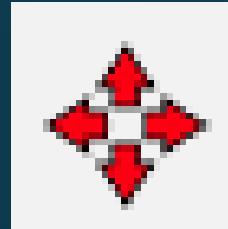
Hint:先用



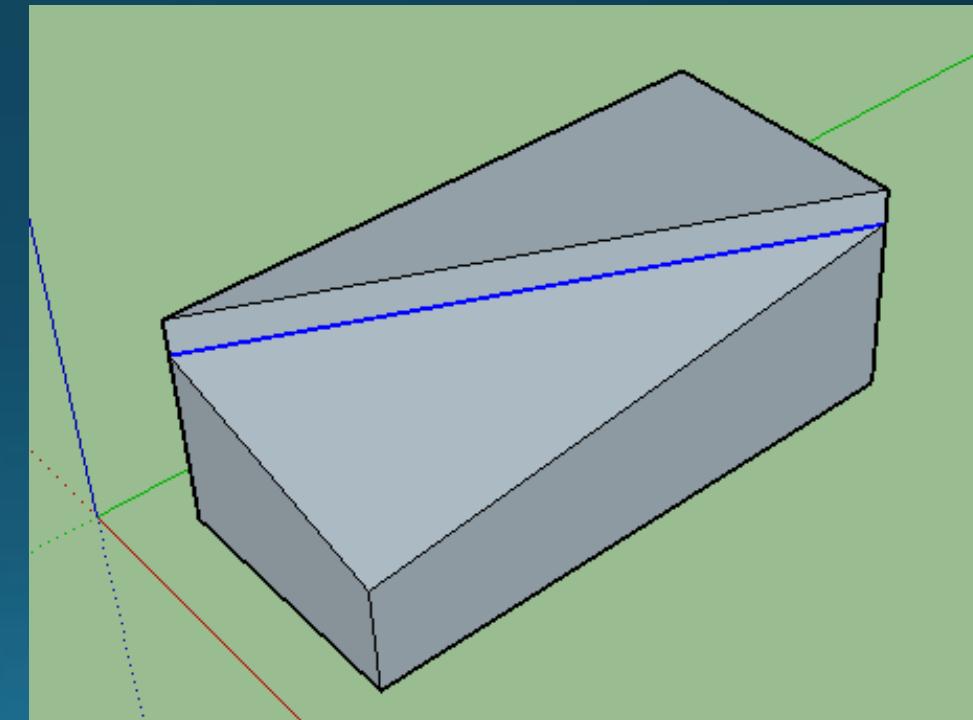
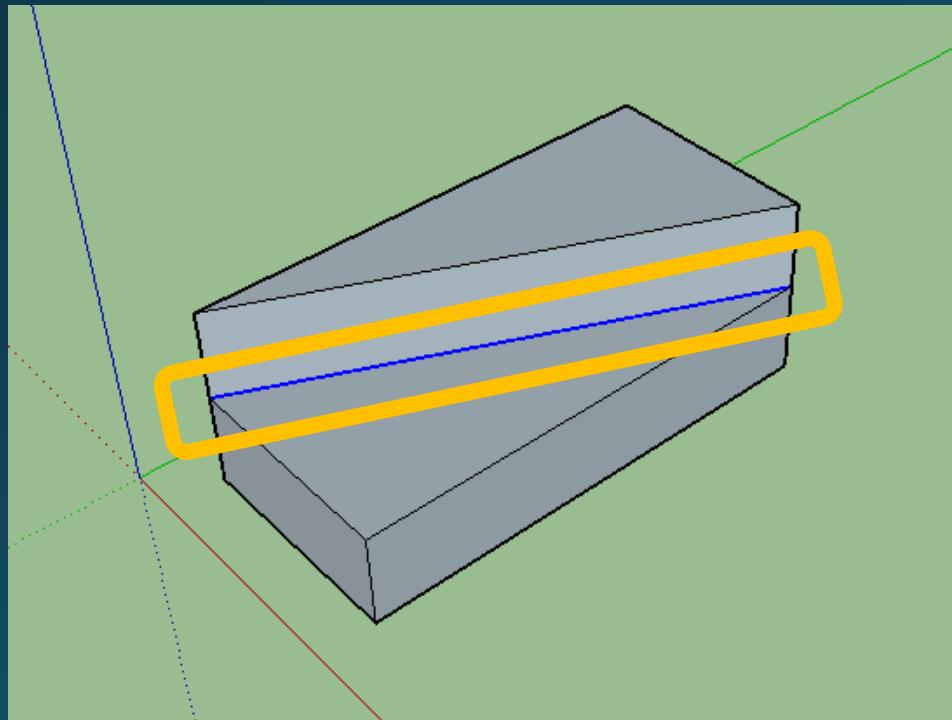
選取要移動的物件



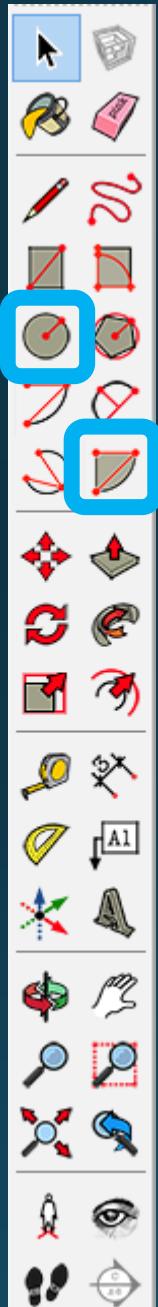
# SketchUp基本操作



移動



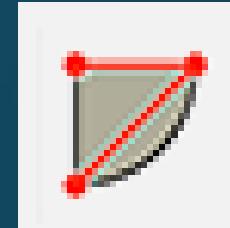
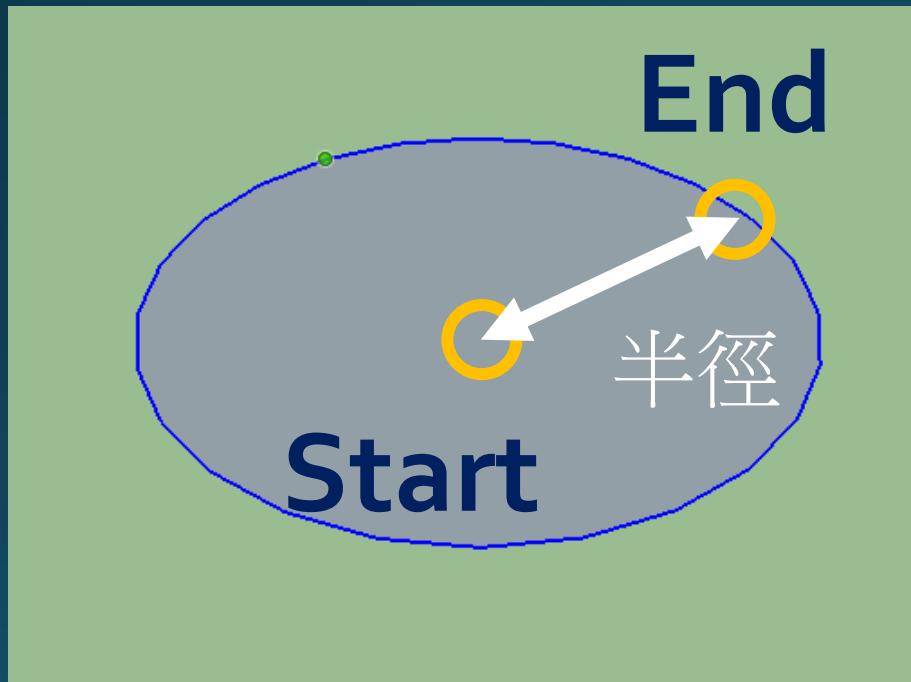
Hint:先用 選取部分線/面，可使變形



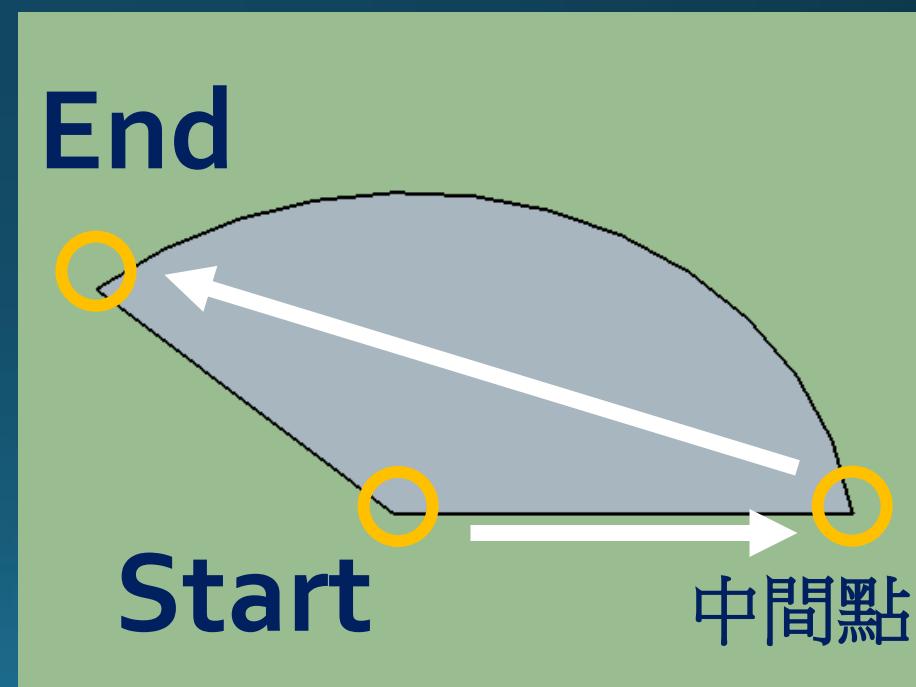
# SketchUp基本操作



圓形



圓形圖



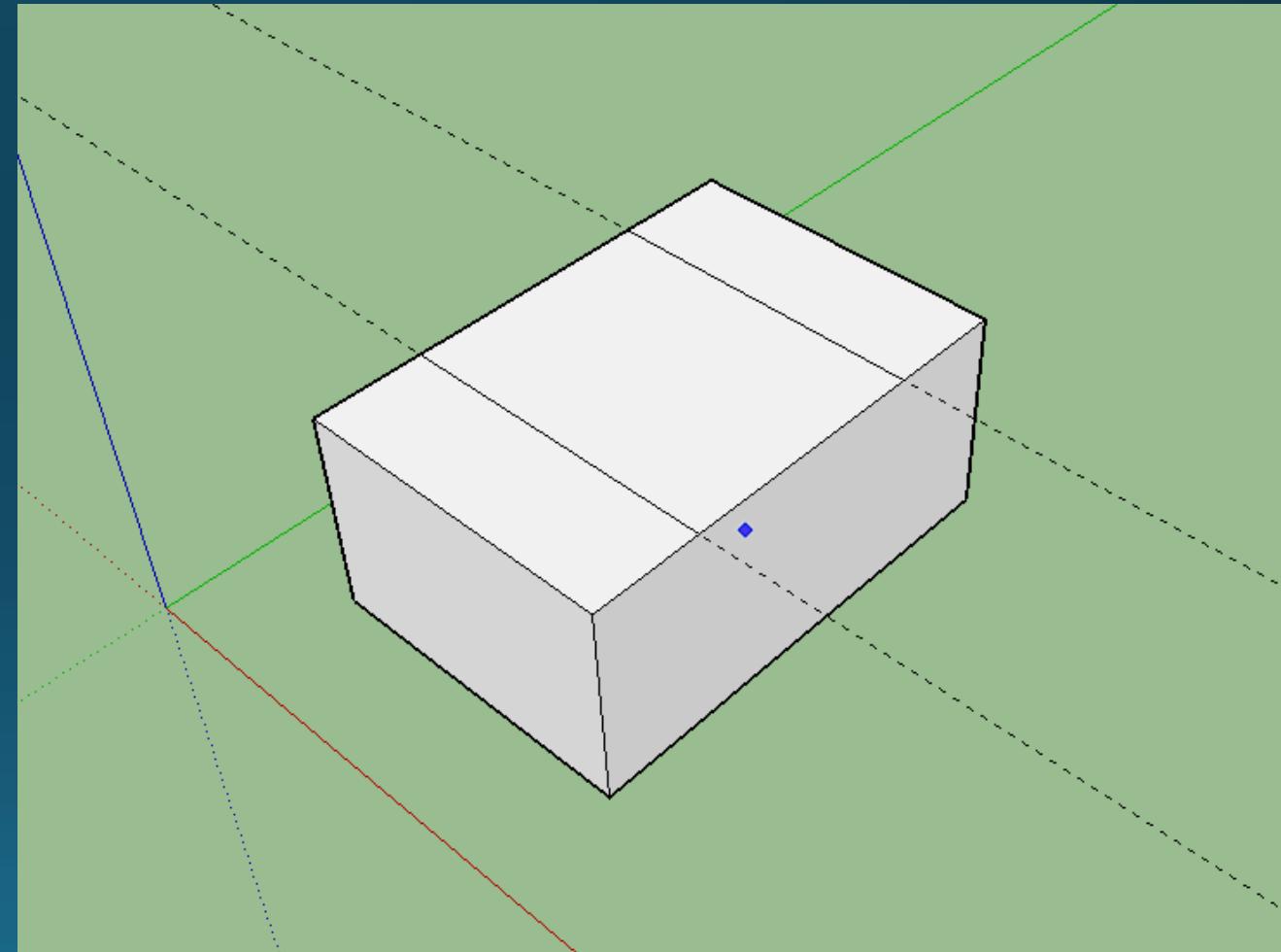
Hint:點左鍵開始，點選中間點(決定半徑)，點左鍵結束



# SketchUp基本操作



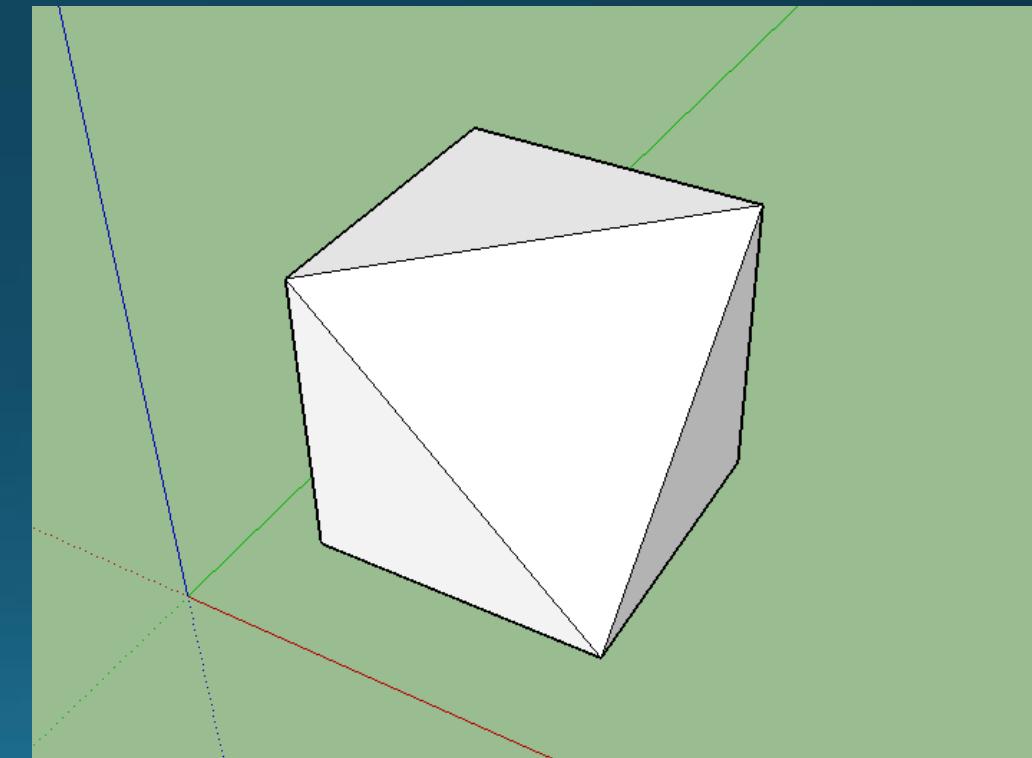
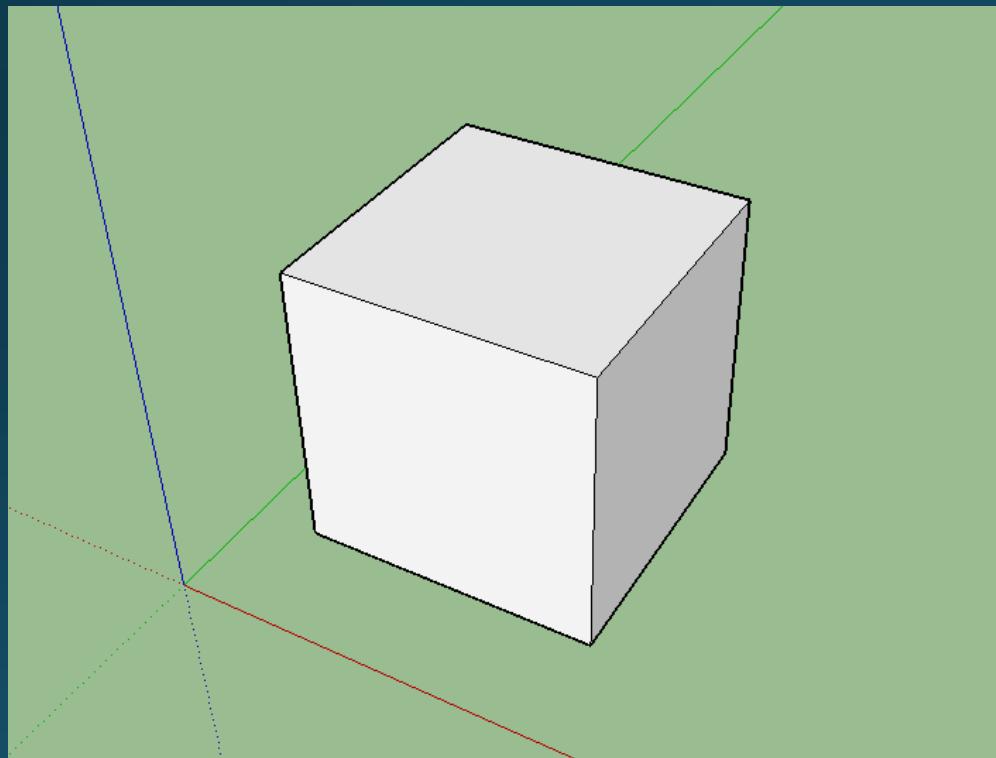
捲尺工具



小挑戰 小挑戰 小挑戰

# 小挑戰 小挑戰!!

你要**HOW TO**用這些工具，畫出一個被切角的正方形？

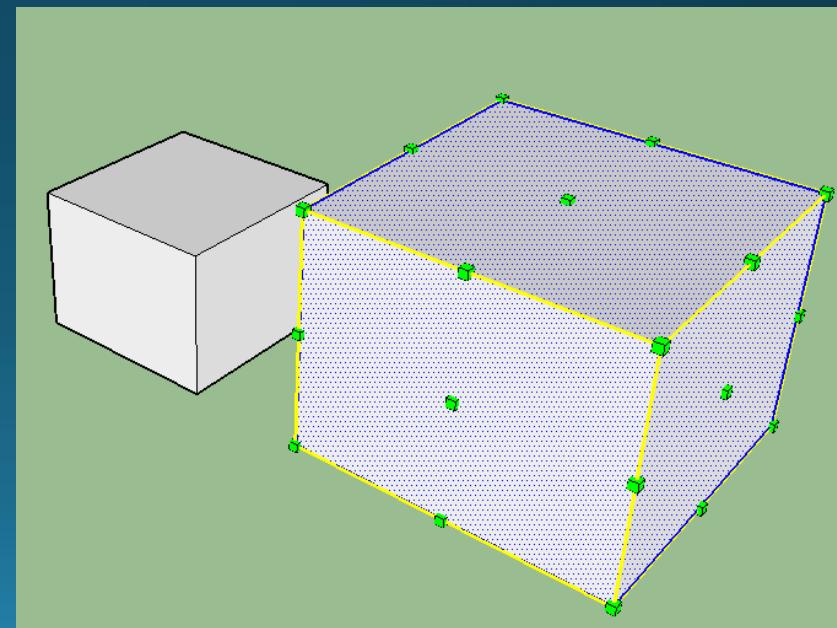
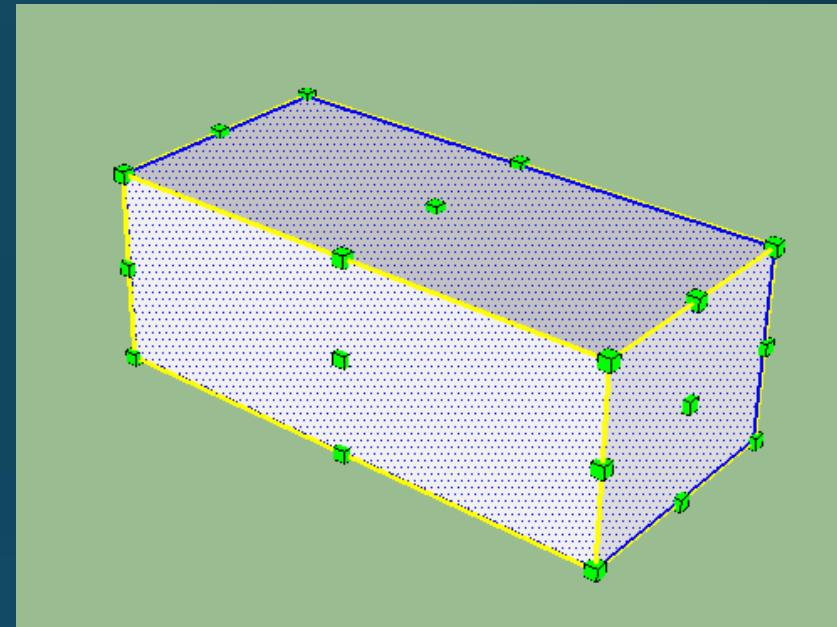
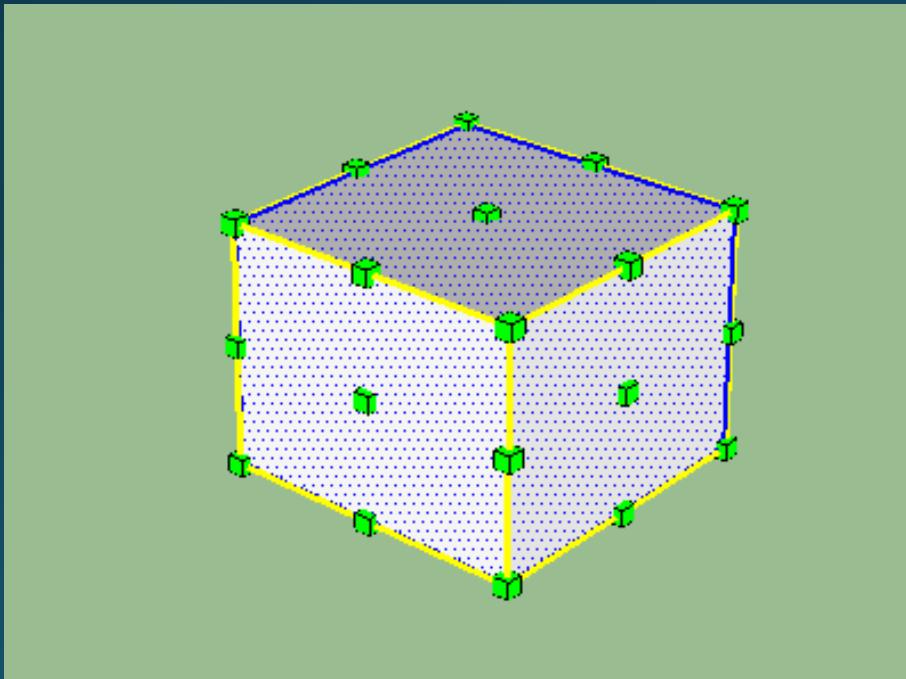




# SketchUp基本操作

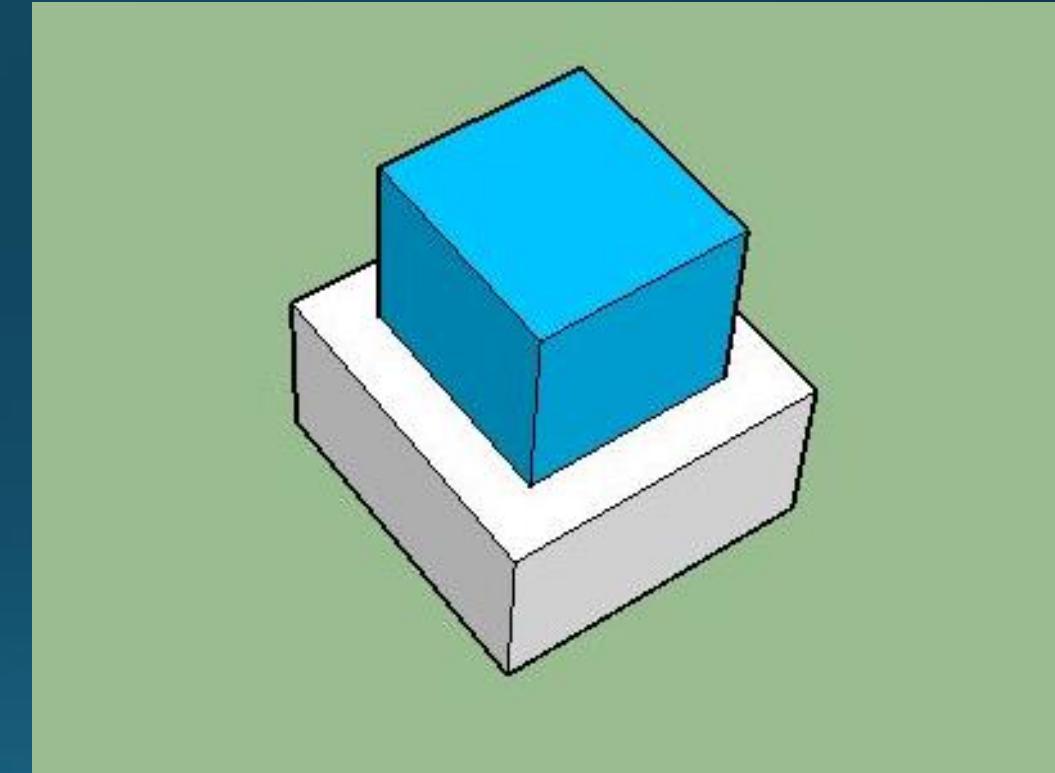
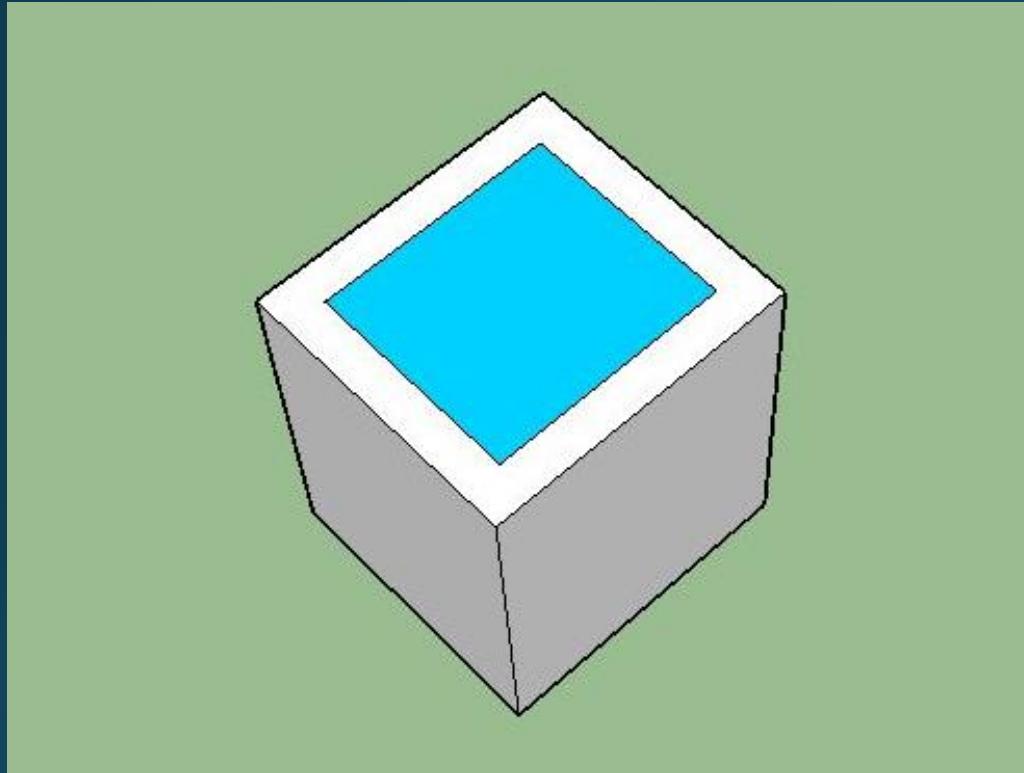


比例





# SketchUp基本操作

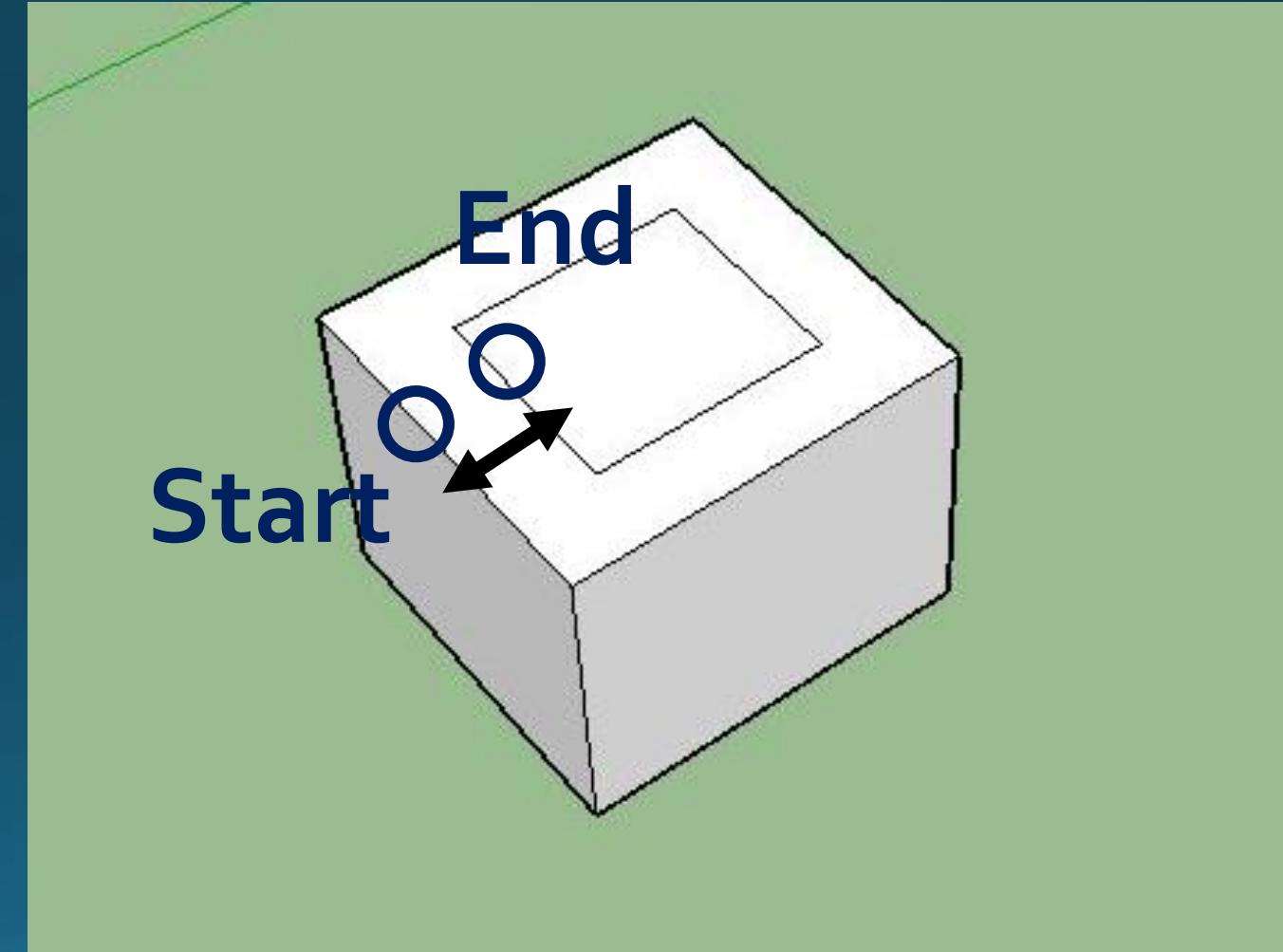


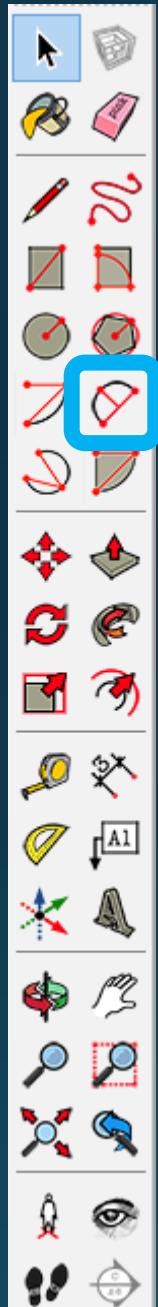


# SketchUp基本操作



偏移

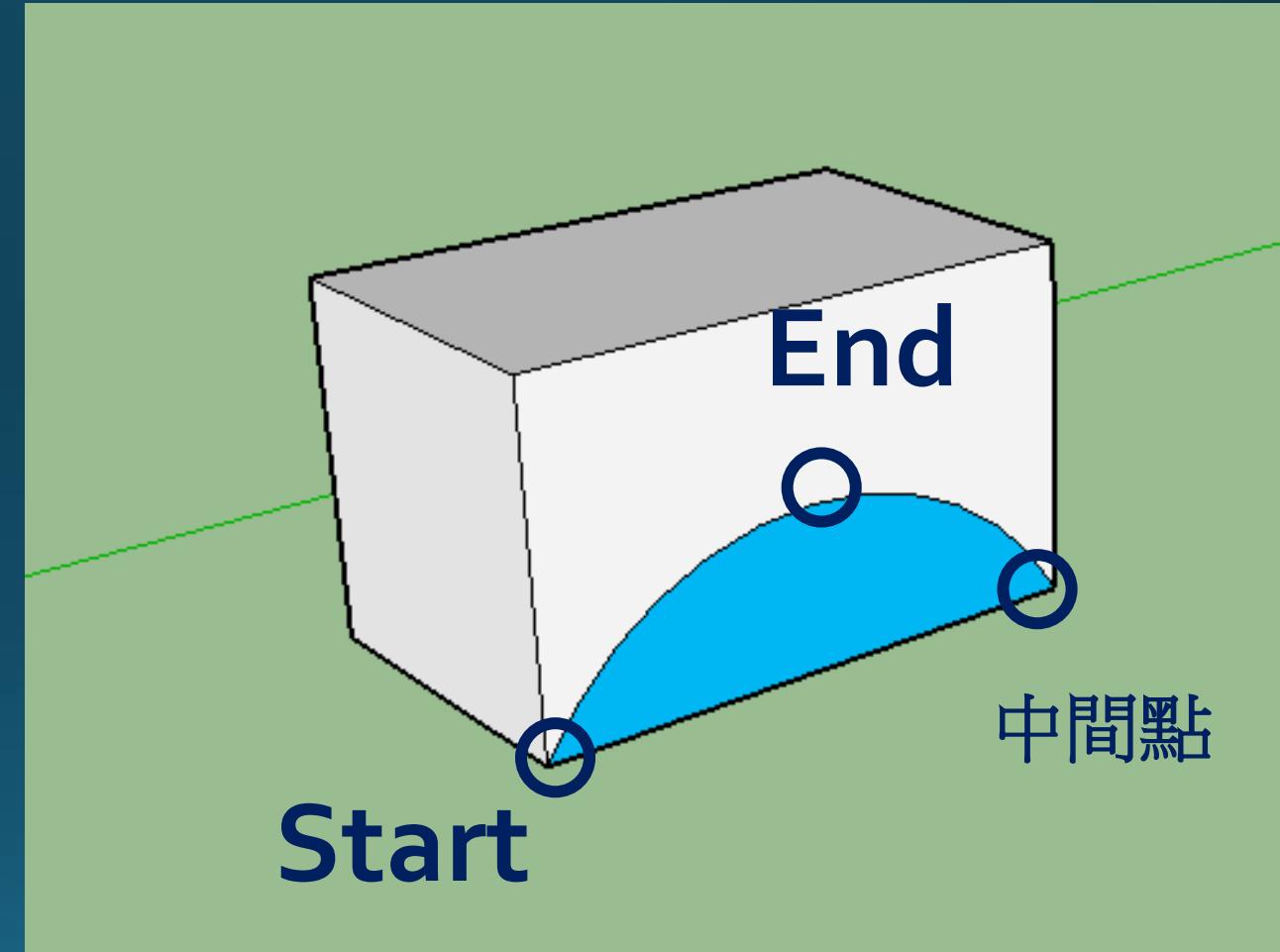




# SketchUp基本操作



兩點圓弧



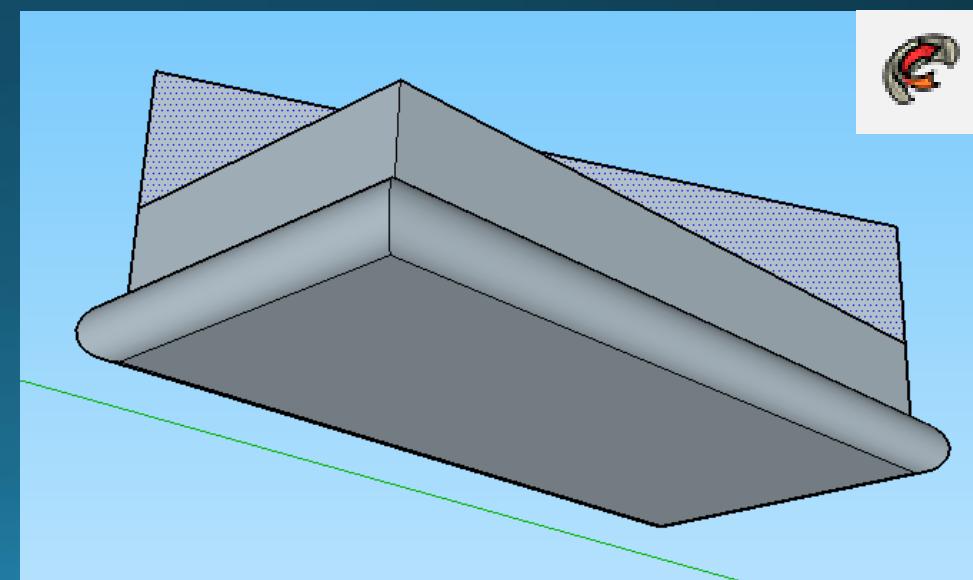
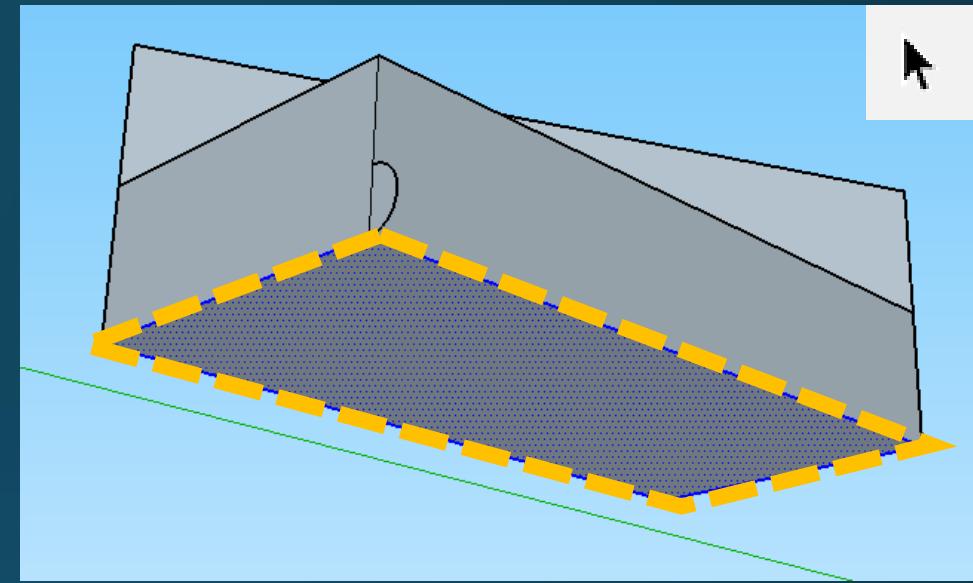
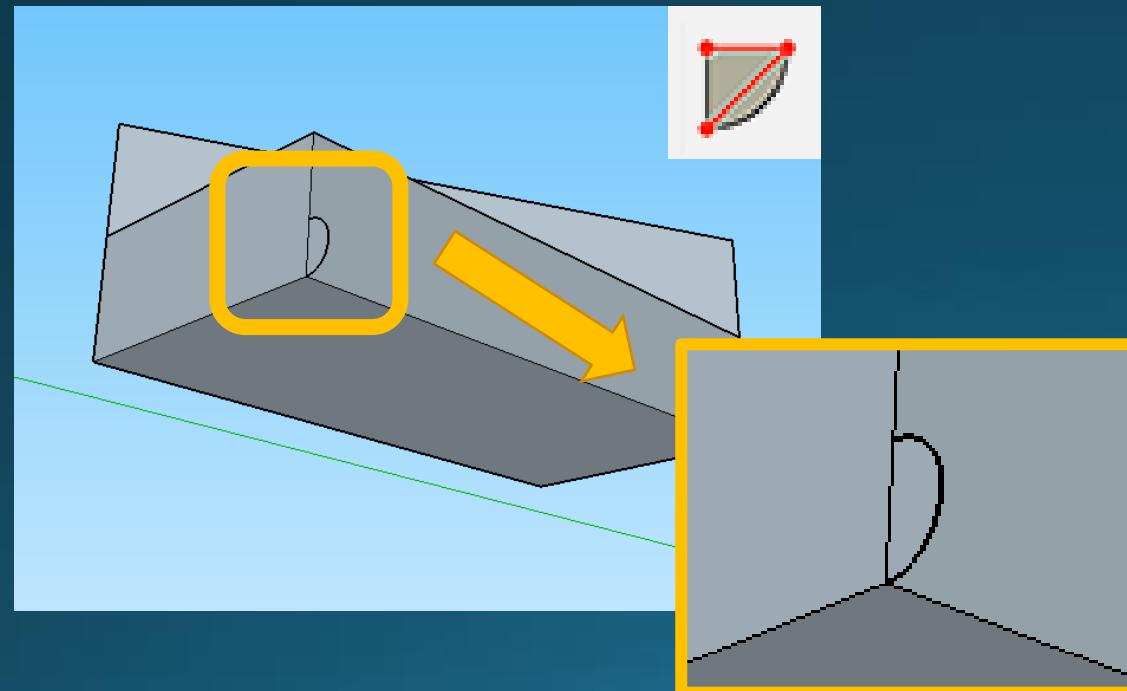
Hint:點左鍵開始，點選中間點(寬度)，點左鍵結束(高度)



# SketchUp基本操作



路徑跟隨





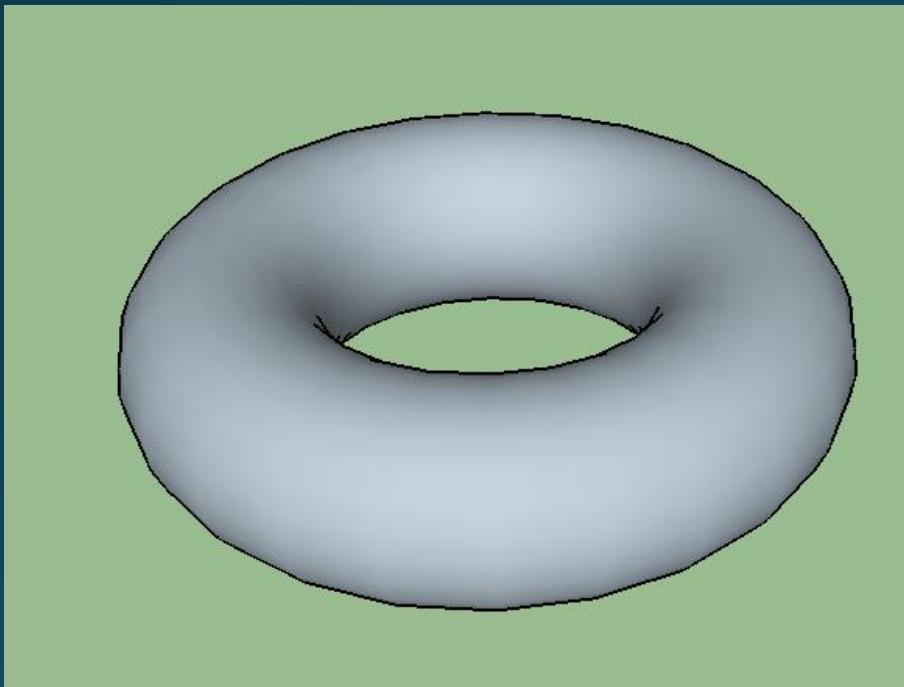
唉叻 不錯 這個屌

小挑戰

小挑戰

# 小挑戰 小挑戰!!

你要**HOW TO**用這些工具，畫出一個？



Hint:

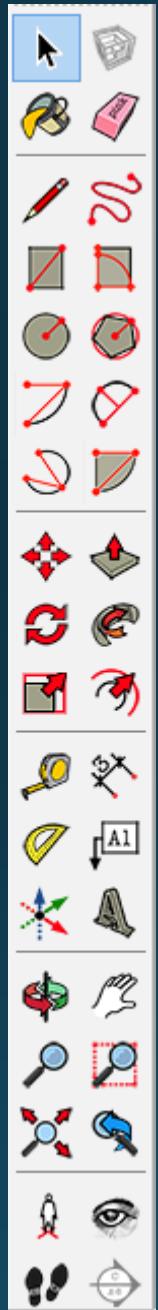
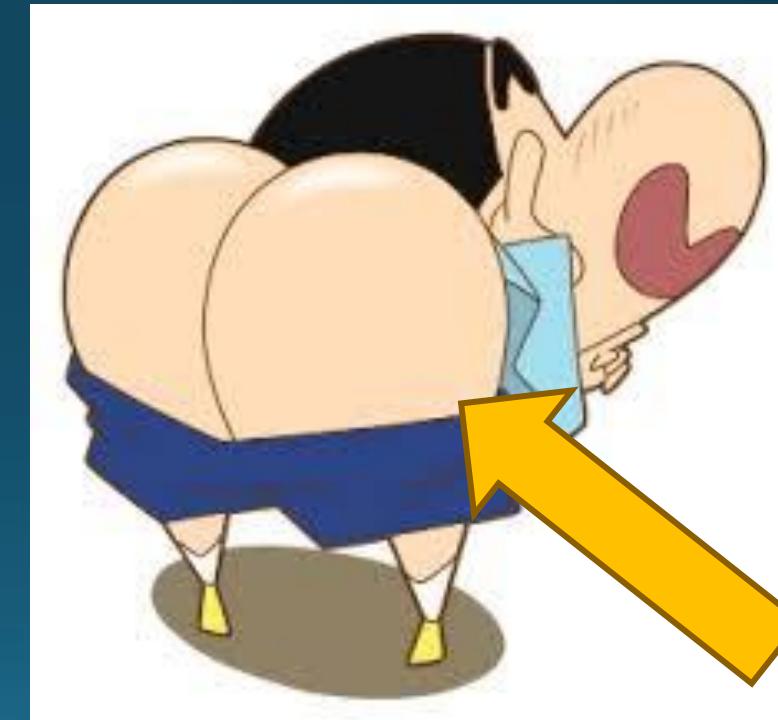
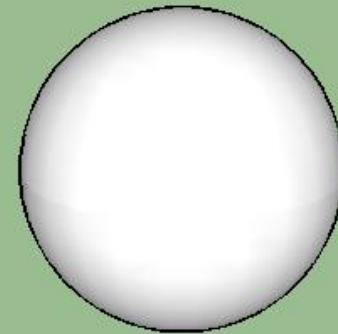




小挑戰 小挑戰 小挑戰

# 小挑戰 小挑戰!!

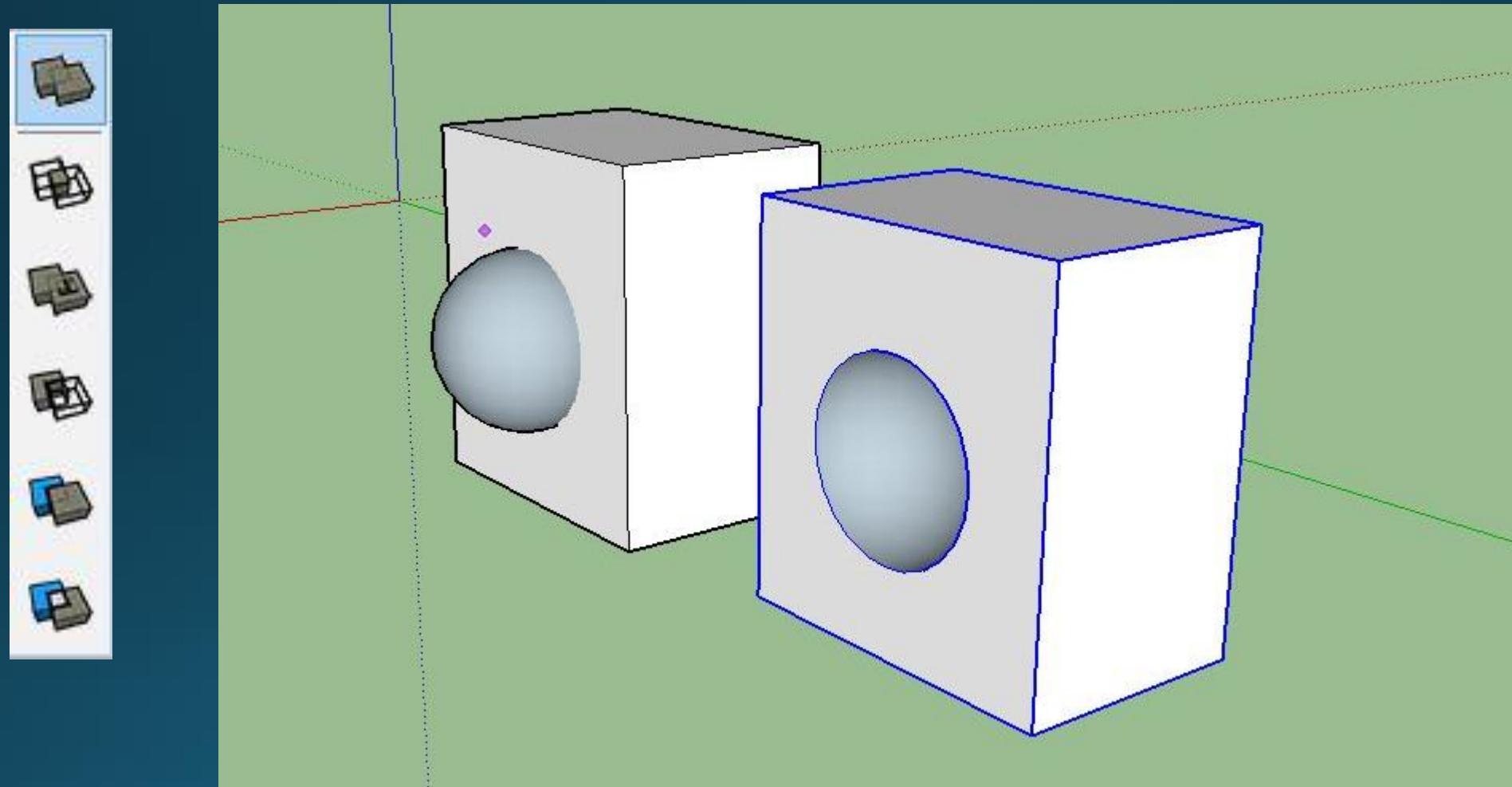
你要**HOW TO**用這些工具，畫出一顆球？



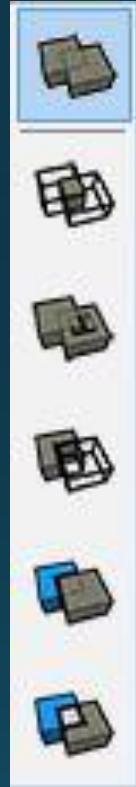


厲害!  
Terrific!

# SketchUp基本操作—實心工具



# SketchUp基本操作-實心工具



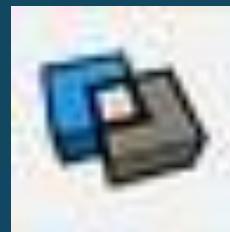
外層



交集



相減



分割



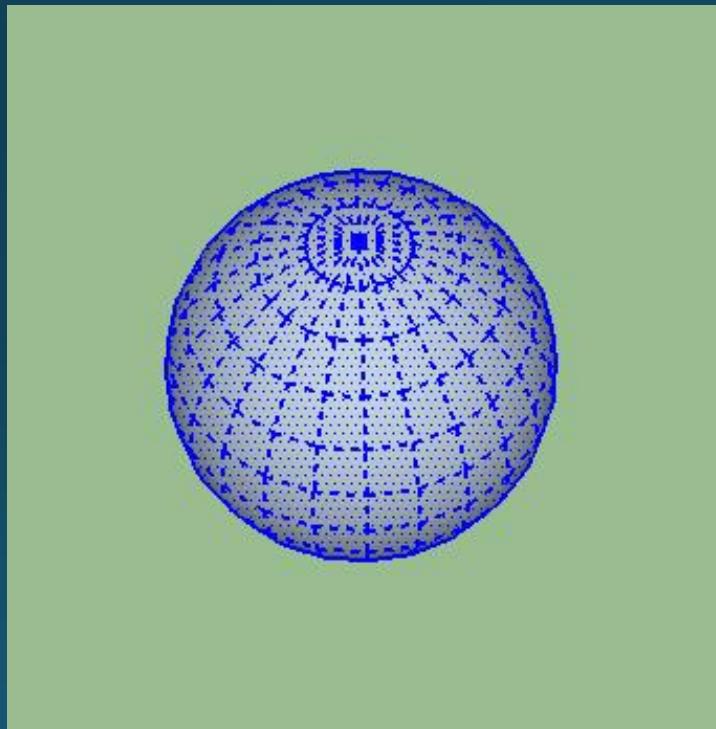
聯合



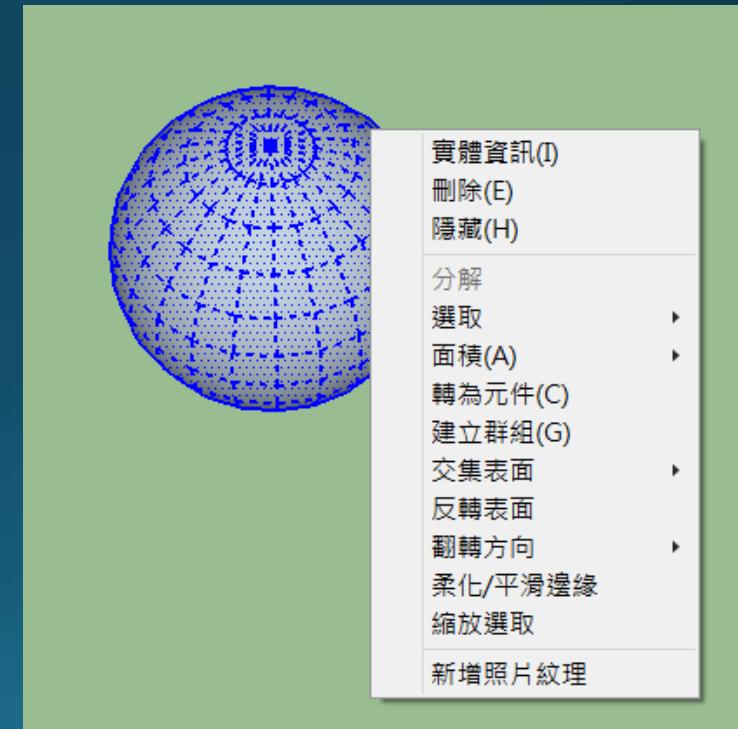
修剪

# SketchUp基本操作—實心工具

1. 先將其轉為群組



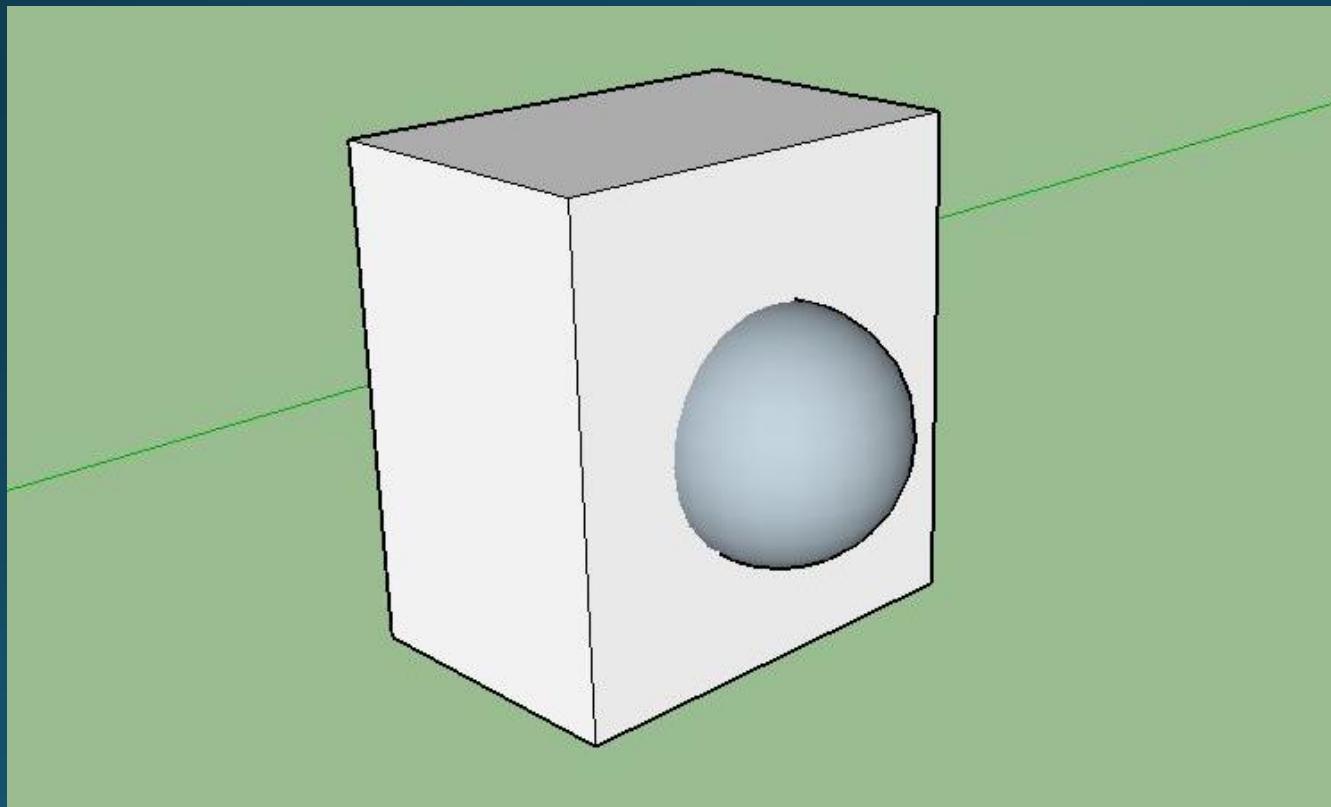
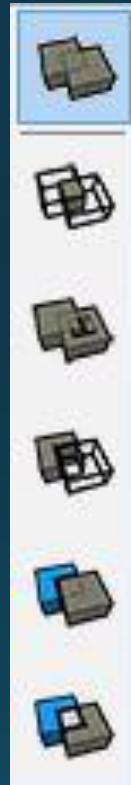
用 半點3下



右鍵 → 建立群組

# SketchUp基本操作-實心工具

- 1.先將其轉為群組 => 2.排列



# SketchUp基本操作—實心工具

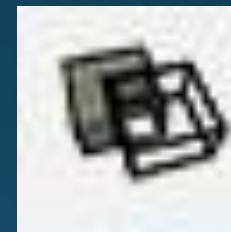
1.先將其轉為群組 → 2.排列 → 3.選取實心工具



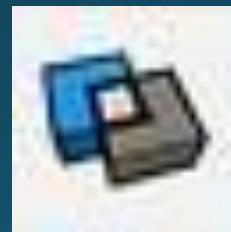
外層



交集



相減



分割



聯合

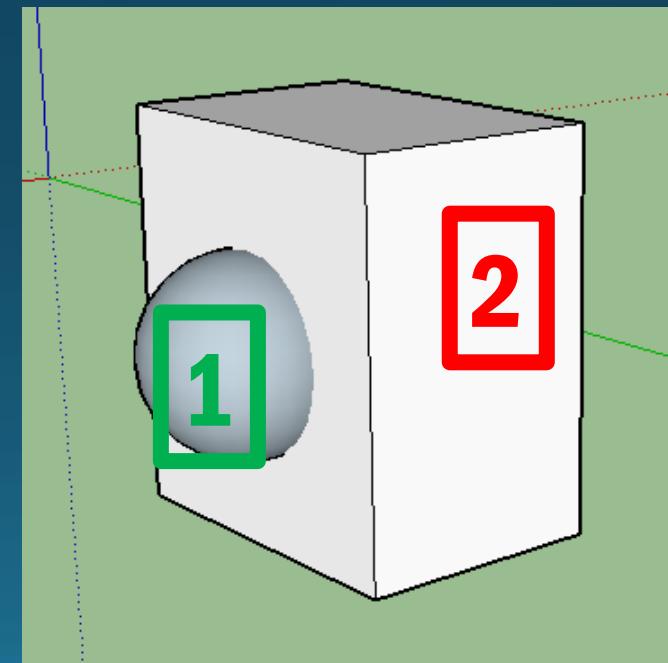
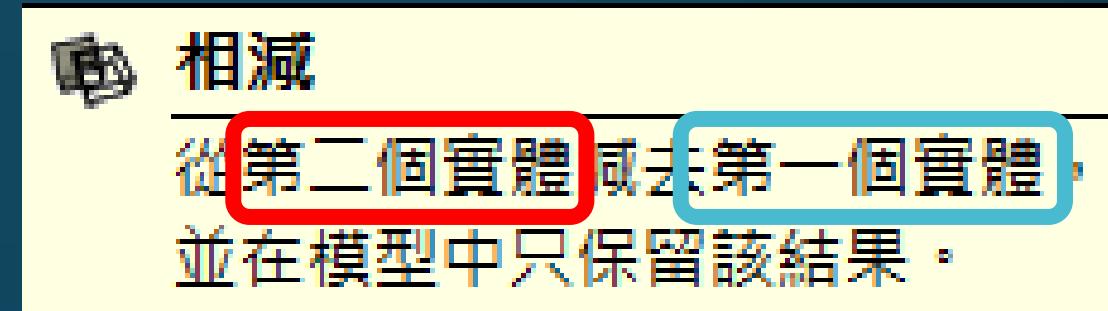
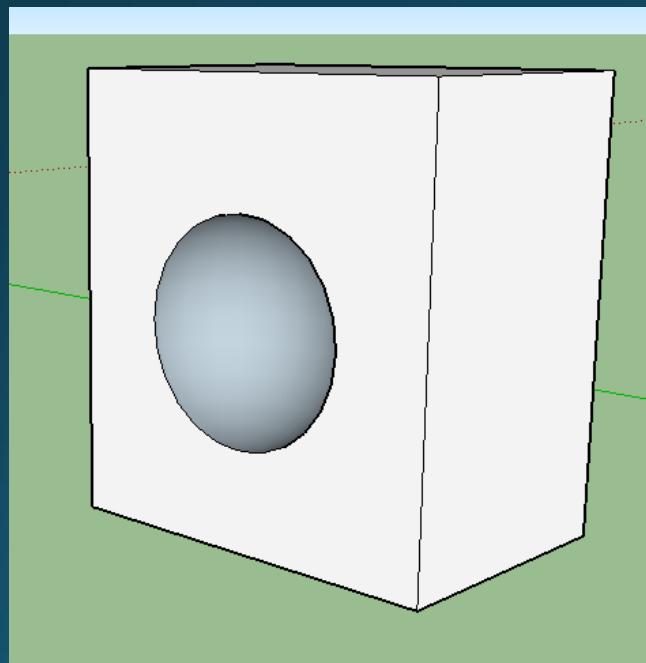


修剪

# SketchUp基本操作-實心工具



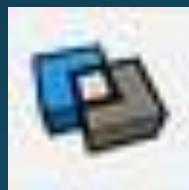
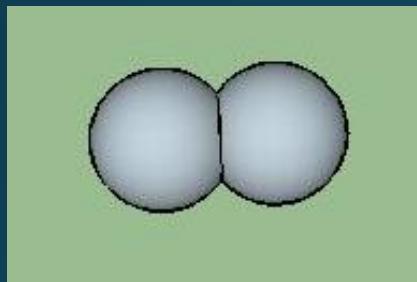
相減



# SketchUp基本操作—實心工具



外層



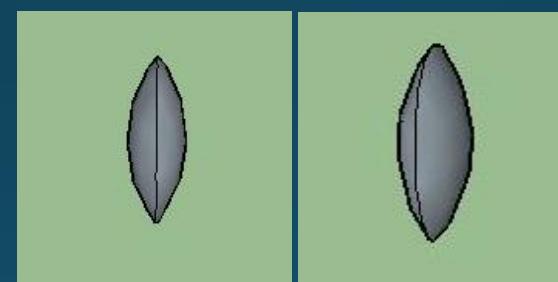
交集



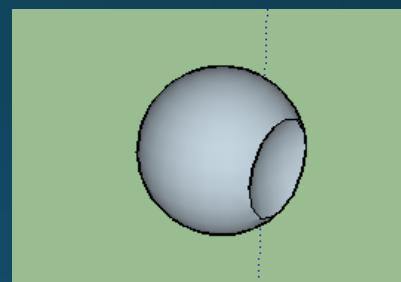
相減



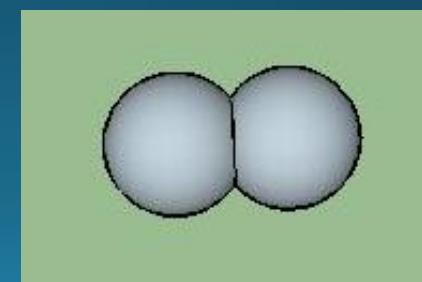
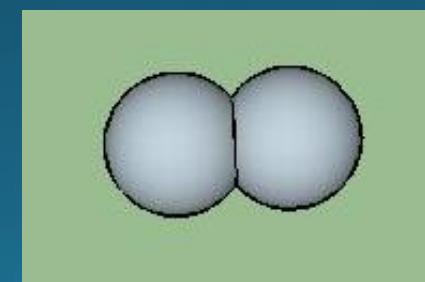
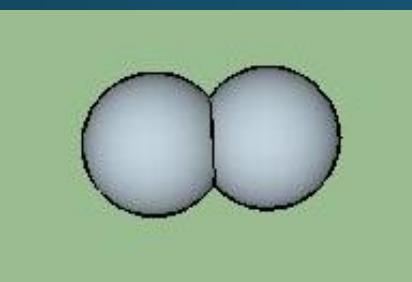
分割



聯合



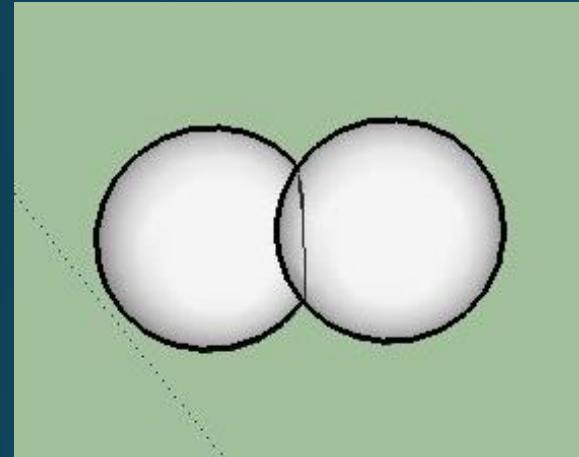
修剪



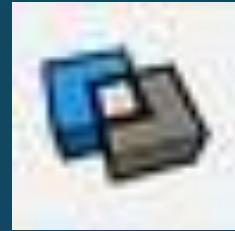
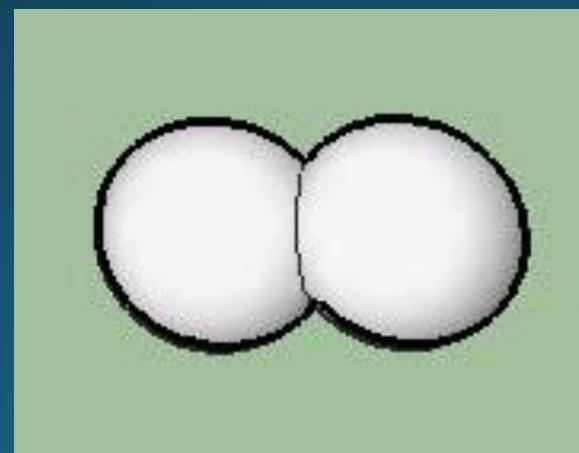
# SketchUp基本操作—實心工具



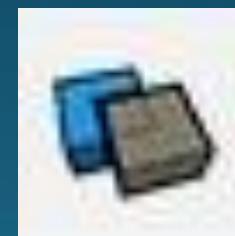
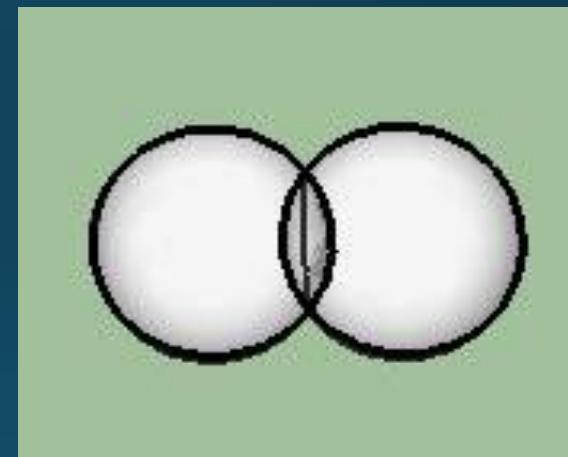
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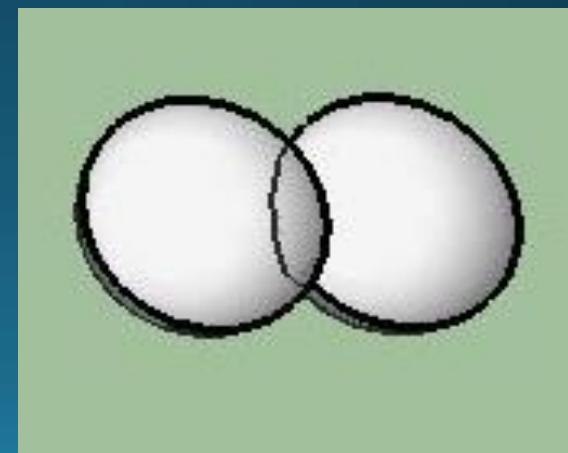
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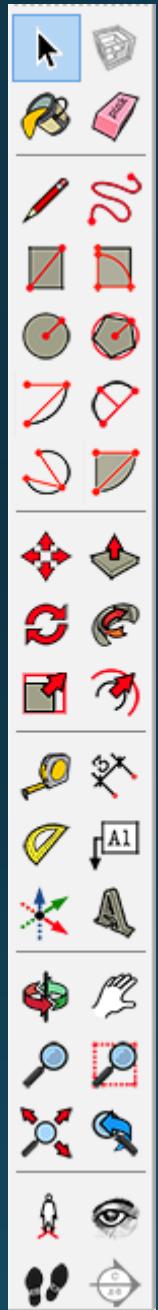


分割



修剪





# SketchUp基本操作



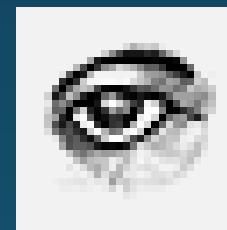
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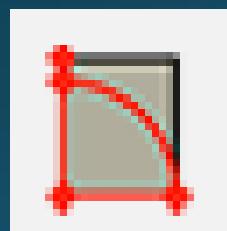
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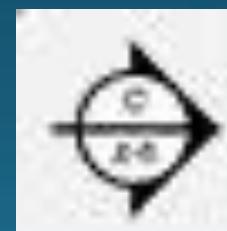
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環顧



選轉矩形

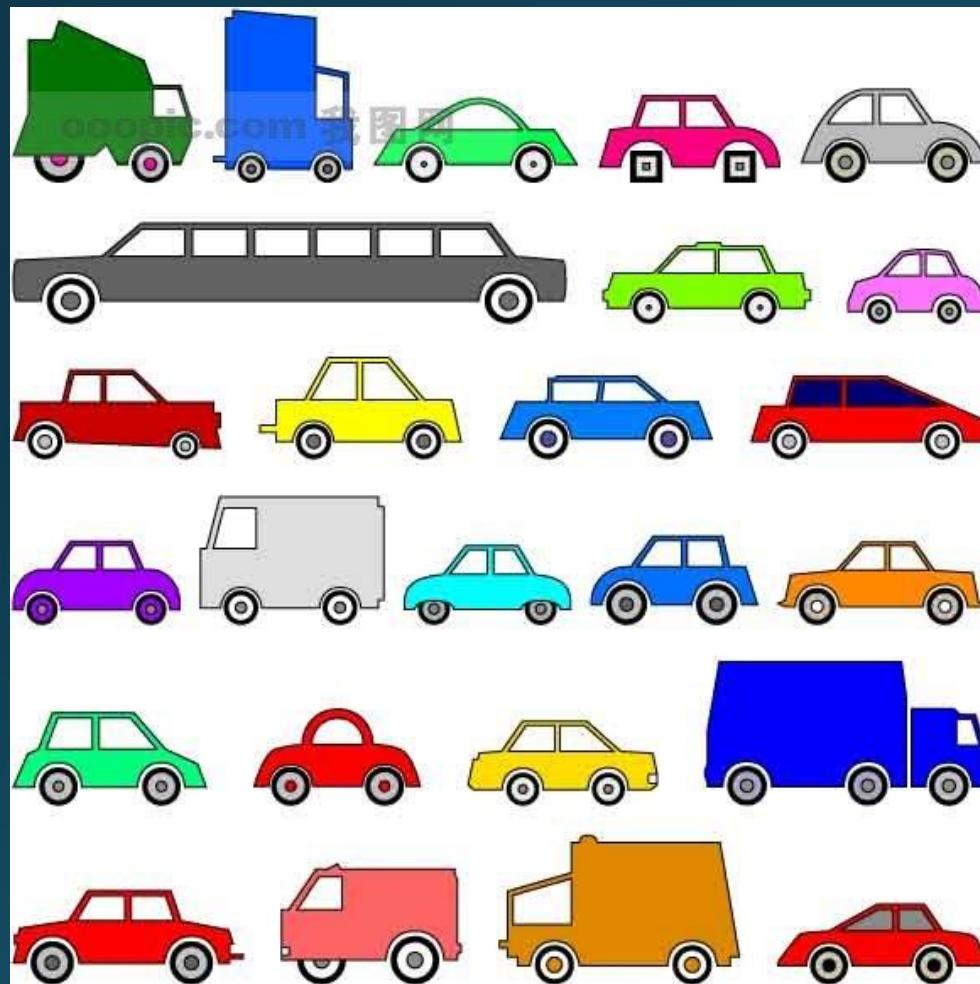


剖面平面

It's Time for... Little Project!!



# Little Project



# Little Project

