

# 設計寓學習於遊戲 的全方位學習體驗 - 關心和愛護環境 -

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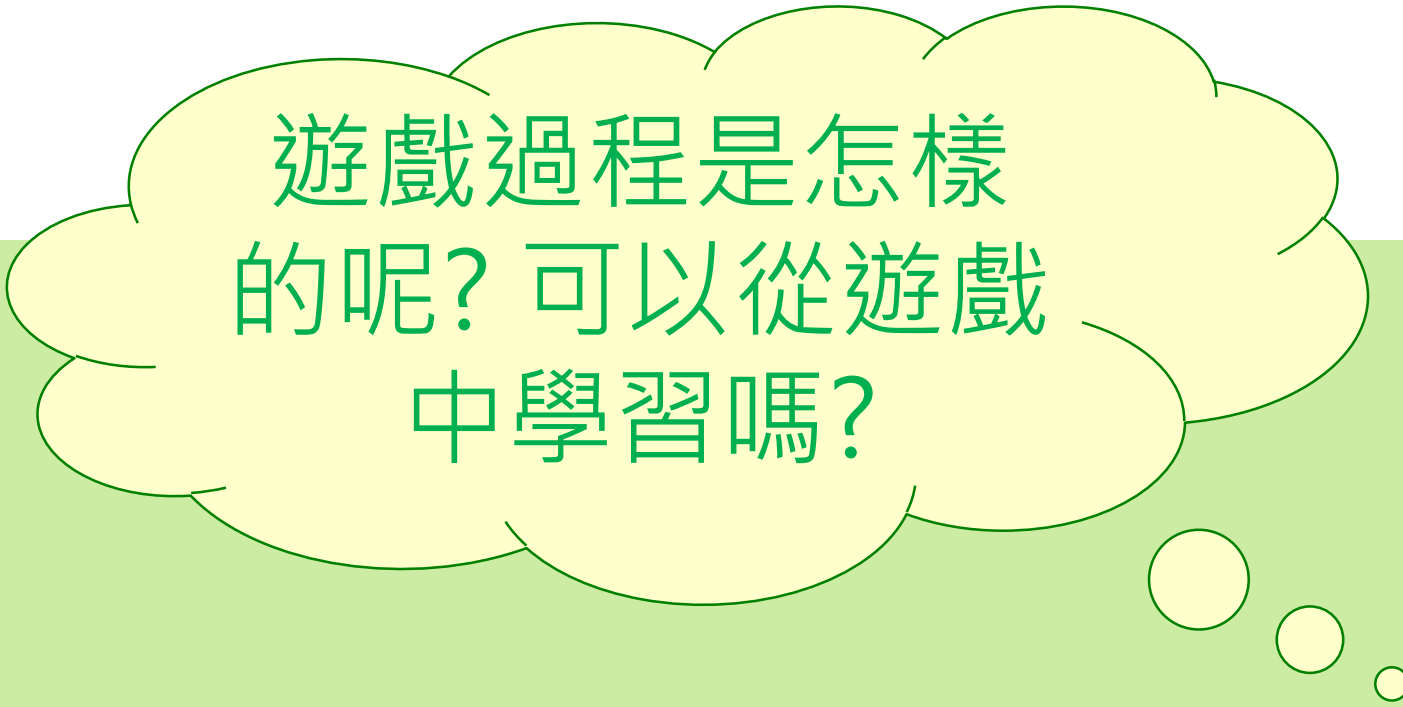
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16/2/2019

# 遊戲是怎麼的一回事?

## What is Game all about?






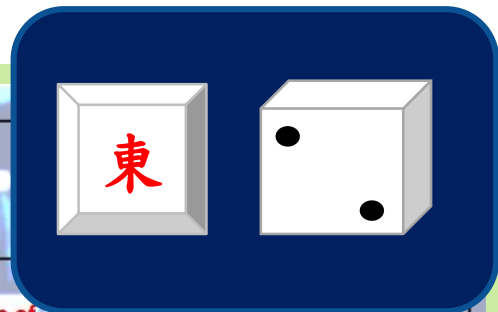
遊戲過程是怎樣的呢？  
可以從遊戲中學習嗎？

# 桌遊示例：香港交通

## 探討香港交通對生活環境的影響

	<p>① <b>Increased commuting</b> (6 points)</p>	<p>② <b>Poor roadside air quality</b> (10 points)</p>	<p>③ <b>Adjustment of harbor crossing tunnels' tolls</b> (5 points)</p>	<p>④ <b>Overloaded harbor crossing tunnels</b> (8 points)</p>
<p>⑤ <b>Promotion of cycling</b> (6 points)</p>	<p>⑥ <b>Dense road pattern</b> (5 points)</p>	<p>⑦ <b>Frequent traffic demand from tourist</b> (2 points)</p>	<p>⑧ <b>Increase of MTR fare</b> (10 points)</p>	<p>⑨ <b>Accessible railway network</b> (5 points)</p>
<p>⑩ <b>Excessive number of vehicles</b> (10 points)</p>	<p>①① <b>Redevelopment projects in old districts</b> (5 points)</p>	<p>①② <b>Traffic bottlenecks</b> (8 points)</p>	<p>①③ <b>Promotion of electric vehicles</b> (8 points)</p>	
<p>①④ <b>Increase meter parking charges</b> (5 points)</p>	<p>①⑤ <b>Nodal congestion in peak hours</b> (8 points)</p>	<p><b>Start</b></p>	<p>①⑥ <b>Reclamation to increase land supply</b> (10 points)</p>	<p>①⑦ <b>Poor connectivity in flooding-prone roads</b> (6 points)</p>
<p>①⑧ <b>Increasing toll of road tunnels</b> (8 points)</p>	<p>①⑨ <b>Completion of HK-Macau bridge</b> (5 points)</p>	<p>②⑩ <b>Severe traffic congestion</b> (10 points)</p>	<p>②① <b>Completion of XRL</b> (8 points)</p>	
<p>②② <b>Poor traffic flow management</b> (6 points)</p>	<p>②③ <b>High traffic accident rate</b> (6 points)</p>	<p>②④ <b>Lack of parking space</b> (6 points)</p>		
<p>②⑤ <b>Insufficient road space</b> (10 points)</p>	<p>②⑥ <b>Establishment of Shatin-Central Link</b> (8 points)</p>	<p>②⑦ <b>Many roadside loading/unloading activities</b> (5 points)</p>	<p>②⑧ <b>Increase vehicle's first registration tax</b> (2 points)</p>	

# 桌遊示例：香港交通



	① <b>Increased commuting</b> (6 points)	② <b>Poor roadside air quality</b> (10 points)	③ <b>Adjustment of harbor crossing tunnels' tolls</b> (5 points)	④ <b>Expansion of expressway network</b> (8 points)	⑤ <b>Accessible railway network</b> (5 points)
	⑤ <b>Promotion of cycling</b> (6 points)	⑥ <b>Dense road pattern</b> (5 points)	⑦ <b>Frequent traffic demand from tourist</b> (2 points)	⑧ <b>Increase of MTR fare</b> (10 points)	⑨ <b>Reduction of vehicles</b> (8 points)
	⑩ <b>Excessive number of vehicles</b> (10 points)	⑪ <b>Redevelopment projects in old districts</b> (5 points)	⑫ <b>Severe traffic congestion</b> (10 points)	⑬ <b>Many roadside loading/unloading activities</b> (5 points)	⑭ <b>Increase vehicle's first registration tax</b> (2 points)
	⑬ <b>Increase meter parking charges</b> (5 points)	⑮ <b>Nodal congestion in peak hours</b> (8 points)	⑯ <b>Lack of parking space</b> (6 points)	⑰ <b>Many roadside loading/unloading activities</b> (5 points)	⑱ <b>Increase vehicle's first registration tax</b> (2 points)
	⑲ <b>Severe traffic congestion</b> (10 points)	⑳ <b>Lack of parking space</b> (6 points)	㉑ <b>Many roadside loading/unloading activities</b> (5 points)	㉒ <b>Increase vehicle's first registration tax</b> (2 points)	㉓ <b>Increase vehicle's first registration tax</b> (2 points)



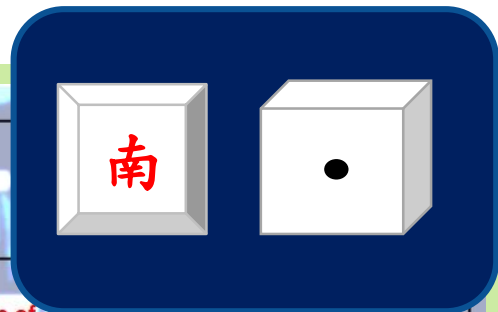
① ⑥

**填海造地**

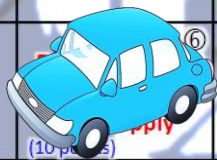
(10 points)

格數	內容	積分
16	填海造地	+10分

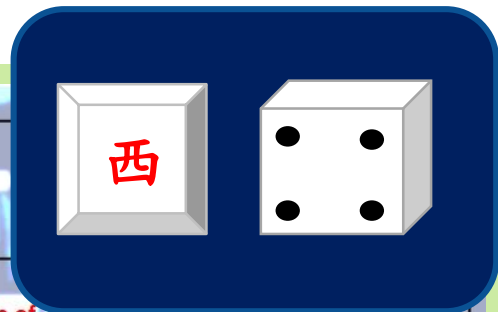
# 桌遊示例：香港交通



	① <b>Increased commuting</b> (6 points)	② <b>Poor roadside air quality</b> (10 points)	③ <b>Adjustment of harbor crossing tunnels' tolls</b> (5 points)	<b>Start</b>	④ <b>Increase meter parking charges</b> (5 points)	⑤ <b>Promotion of cycling</b> (6 points)	⑥ <b>Dense road pattern</b> (5 points)	⑦ <b>Frequent traffic demand from tourist</b> (2 points)	⑧ <b>Increase of MTR fare</b> (10 points)	⑨ <b>Accessible railway network</b> (5 points)	
	⑩ <b>Excessive number of vehicles</b> (10 points)	⑪ <b>Redevelopment projects in old districts</b> (5 points)	⑫ <b>Traffic bottlenecks</b> (8 points)		⑬ <b>Promotion of electric vehicles</b> (8 points)	⑭ <b>Poor connectivity in flooding-prone roads</b> (6 points)					
⑮ <b>Increase meter parking charges</b> (5 points)	⑯ <b>Increasing toll of road tunnels</b> (8 points)	⑰ <b>Completion of HK-Macau bridge</b> (5 points)	⑱ <b>Severe traffic congestion</b> (10 points)	⑲ <b>Completion of XRL</b> (8 points)	⑳ <b>Poor traffic flow management</b> (6 points)	㉑ <b>High traffic accident rate</b> (6 points)	㉒ <b>Lack of parking space</b> (6 points)	㉓ <b>Many roadside loading/unloading activities</b> (5 points)	㉔ <b>Increase vehicle's first registration tax</b> (2 points)	㉕ <b>Insufficient road space</b> (10 points)	㉖ <b>Establishment of Shatin-Central Link</b> (8 points)



# 桌遊示例：香港交通

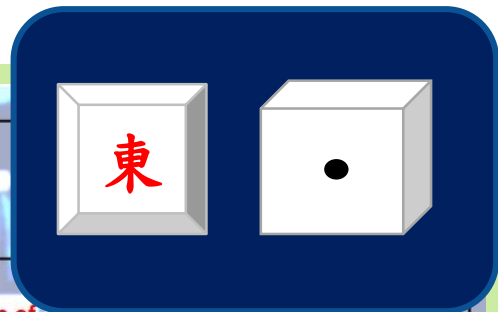


N ↑ +	① Increased commuting (6 points)	② Poor roadside air quality (10 points)	③ Adjustment of harbor crossing tunnels' tolls (5 points)		
	⑤ Promotion of cycling (6 points)	⑥ Dense road pattern (5 points)	⑦ Frequent traffic demand from tourist (2 points)	⑧ Increase of MTR fare (10 points)	⑨ Accessible railway network (5 points)
	⑩ Excessive number of vehicles (10 points)	⑪ Redevelopment projects in old districts (5 points)	⑫ Traffic bottlenecks (8 points)	⑬ Promotion of electric vehicles (8 points)	
⑭ Increased parking (5 points)	⑮ Nodal congestion in peak hours (8 points)	Start	⑯ Reclamation to increase land supply (10 points)	⑰ Poor connectivity in flooding-prone roads (6 points)	
	⑱ Completion of bridge (5 points)	⑲ Severe traffic congestion (10 points)			
⑳ Poor traffic management (6 points)	㉑ High traffic accident rate (6 points)	㉒ Establishment of Shatin-Central Link (8 points)			
	㉓ Insufficient road space (10 points)				

① ⑧  
**隧道加價**  
(8 points)

格數	內容	積分
16	填海造地	+10分
18	隧道加價	-8分

# 桌遊示例：香港交通



N ↑	① Increased commuting (6 points)	② Poor roadside air quality (10 points)	③ Adjustment of harbor crossing tunnels' tolls (5 points)	Start	④ Increase meter parking charges (5 points)	⑤ Promotion of cycling (6 points)	⑥ Dense road pattern (5 points)	⑦ Frequent traffic demand from tourist (2 points)	⑧ Excessive number of vehicles (10 points)	⑨ Redevelopment projects in old districts (5 points)	⑩ Traffic bottlenecks (8 points)	⑪ Increase of MTR fare (10 points)	⑫ Accessible railway network (5 points)
	⑬ Increase meter parking charges (5 points)	⑭ Severe traffic congestion (10 points)	⑮ Reclamation to increase land supply (10 points)										
	⑱ Poor traffic flow management (6 points)	⑲ Insufficient road space (10 points)	⑳ Establishment of Shatin-Central Link (8 points)										

港珠澳大橋落成  
(5 points)

格數	內容	積分
16	填海造地	+ 10分
18	隧道加價	- 8分
19	港珠澳大橋落成	+/- 5分?



# 規則

根據方格的內容決定是該方格會加分還是減分

加或減分？

N ↑	① Increased commuting (6 points)	② Poor roadside air quality (10 points)	③ Adjustment of harbor crossing tunnels' tolls (5 points)	④ Overloaded harbor crossing tunnels (8 points)
⑤ Promotion of cycling (6 points)	⑥ Dense road pattern (5 points)	⑦ Frequent traffic demand from tourist (2 points)	⑧ Increase of MTR fare (10 points)	⑨ Accessible railway network (5 points)
⑩ Excessive number of vehicles (10 points)	⑪ Redevelopment projects in old districts (8 points)	⑫ Severe traffic congestion (10 points)	⑬ Lack of parking space (6 points)	⑭ Poor connectivity in flooding-prone roads (6 points)
⑮ Increase meter (8 points)	⑯ High traffic accident rate (6 points)	⑰ Many roadside loading/unloading activities (5 points)	⑱ Increase vehicle's first registration tax (2 points)	⑲ Increase of vehicles (8 points)
⑳ Tunnel fare increase (8 points)	㉑ Start (5 points)	㉒ Severe traffic congestion (10 points)	㉓ Lack of parking space (6 points)	㉔ Poor connectivity in flooding-prone roads (6 points)
㉕ Tunnel fare increase (8 points)	㉖ Start (5 points)	㉗ Severe traffic congestion (10 points)	㉘ Lack of parking space (6 points)	㉙ Poor connectivity in flooding-prone roads (6 points)
㉚ Tunnel fare increase (8 points)	㉛ Start (5 points)	㉜ Severe traffic congestion (10 points)	㉝ Lack of parking space (6 points)	㉞ Poor connectivity in flooding-prone roads (6 points)
㉟ Tunnel fare increase (8 points)	㊱ Start (5 points)	㊲ Severe traffic congestion (10 points)	㊳ Lack of parking space (6 points)	㊴ Poor connectivity in flooding-prone roads (6 points)
㊵ Tunnel fare increase (8 points)	㊶ Start (5 points)	㊷ Severe traffic congestion (10 points)	㊸ Lack of parking space (6 points)	㊹ Poor connectivity in flooding-prone roads (6 points)

其實減分的方格比加分的多，為甚麼？

# 從遊戲中學習 在學習中遊戲

## 經驗學習

- 超越傳統教學範式的局限，而且更盡量發揮多元化的「過程」學習
- 透過遊戲吸引學生對課題產生興趣，從而投入教學活動

## 合作學習

- 促進師生、同學之間的互動
- 發展不同的共通能力
  - 溝通、創造力、批判性思考、協作、解難等

## 思辨能力學習

- 對事物有思辨能力（例：邏輯推理）
- 解讀、分析、判斷、解釋、評估、應用等



# 遊戲教學法的好處



## Role play 角色扮演

Considerate  
/ caring

Simulation

Choices

Judgement

1. 學生**代入**角色，**理解**他人不同的立場和價值觀，**設身處地**思考問題
2. **擬真度高**，增強互動和學習的趣味性，從而提升教學成果
3. 遊戲容許學生有**選擇權**，有**做決定**的機會，是訓練學生自學和獨立思考的基本條件

提供  
選擇

運用  
自主權

做決定

承擔  
後果

# 角色扮演示例：廢物城市

## 模擬一個製造很多廢物的城市

- 學生任命為廢物城市的市長，要以最少金錢在多個廢物管理決策中達致最多的城市環境改善

Dumptown Game

<https://www3.epa.gov/recyclecity/dumptown/index.htm>

你的角色會有  
甚麼想法？

## 模擬一個面臨要被砍伐的森林

學生分別扮演不同角色：森林動物、土著、政府官員、大發展商、及環保人士

# 遊戲教學法的好處

1. 增強學生**合作精神**及學習**動機**
2. 激發學生**正面解難**的能力
3. 從遊戲中的勝利建立**自信**
4. 鞏固學生的已有知識，**豐富學習經歷**



Collaboration

Motivation

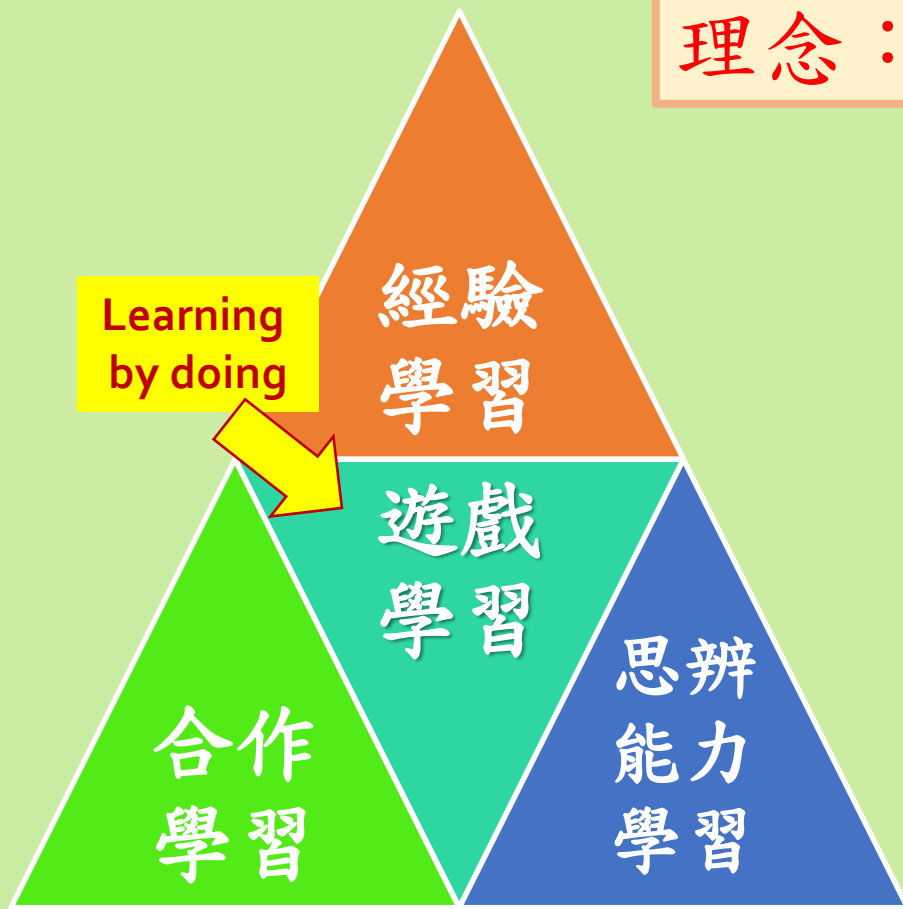
Problem solving

Confidence

# 結語

# 從遊戲中學習 在學習中遊戲

理念：為學生創造活潑的教室



- 遊戲教學強調學生親身體驗、活用創作力、促進合作互動、刺激感官
- 學生可透過遊戲中的交流學習表達己見、聆聽和理解他人
- 鞏固學生的課堂知識，加強應用

→ 提升學習效能

遊戲教學，  
無處不在。

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