Teaching Plan

Title	Comparative Advantages (HKCEE Level)
Instructional Objectives	➢ Recognize and apply the concept of comparative advantage in a classroom simulation. ➢ Analyze the simulation results and use the comparative-advantage model to discuss specialization. ➢ Explain how living standard can be improved as a result of free trade and specialization. ➢ Explain how living standard can be worsened as a result of free trade and unemployment.
Keywords and Concepts Illustrated	➢ Absolute Advantage ➢ Comparative Advantage ➢ International Trade ➢ Opportunity Cost
Needed Time	➢ 80 mins

Sessions	Details	Time Spent

Activity/ Announcement	1. T: Let imagine that you are all members of one big family. Today is your mother's birthday, you have decided to prepare a surprise for her. You want to clean up the whole house, decorate it, and prepare a birthday cake. But you don't have much time, so you need to be very quick and efficient in doing these 3 jobs. So how would you accomplish the tasks at hand?
	2. T: What the criteria would you use to divide up the work?
	3. Ask students to give some of the reasons why people trade with each other, write the answers on a board. Do not comment at this point.
	4. T: Now, I will divide you into 4 groups (with equal number of students in each group, if possible). Each group of you will represent the following producer groups within the economy (you can ask them to wear badges/stick labels to differentiate):
	
	      Group 1: Korean car manufacturers
	      Group 2: Korean computer manufacturers
	      Group 3: Taiwan car manufacturers
	      Group 4: Taiwan computer manufacturers
	
	5. T: You are going to be producers in an economy where there are only two goods: cars and computers, and one productive resource (refer to Appendix I) which is a composite of land, labor, and capital. You will try to produce as many cars and computers as you can. But please note that: producing 100 cars requires two units of the productive resources (PR) in Korea and four units in Taiwan, whereas producing 1000 computers requires three
		5 mins
		
		5 mins
		
		10 mins

units of PR in Korea and four in Taiwan.

6. T: So, the productivity pattern would be (draw this table on board):

	Korea	Taiwan
100 cars	2 PR	4 PR
1000 computers	3 PR	4 PR

7. Provide the four groups of producers with the following number of resource cards (which they can divide among themselves within their group equally).
   Group 1: Korea car manufacturers: 26 2-unit-PR cards (total number of PR: 52)
   Group 2: Korea computer manufacturers: 12 3-unit-PR cards (total number of PR: 36)
   Group 3: Taiwan car manufacturers: 13 4-unit-PR cards (total number of PR: 52)
   Group 4: Taiwan computer manufacturers: 9 4-unit-PR cards (total number of PR: 36)

8. Set up four tables representing the Korea Car Factory, the Taiwan Car Factory, the Korea Computer Factory and the Taiwan Computer Factory respectively. Assign one student from each group to staff its own table representing its own factory. Provide each of the factories with the following set of product cards (refer to Appendix I): 26 "100 CARS" cards for each of the car factories and 12 "1000 COMPUTERS" cards for each of the computer factories.

9. T: Each of the staff students will be responsible for exchanging the PR cards you receive from producers during the game for product cards. You should follow the productivity pattern outlined above.

ROUND ONE – 15 mins

10. In this round each nation should be self-sufficient -- international trade is prohibited at this point. The aim of each individual (as well as each country) is to end up with as many cars and computers as they possibly can at the end of the round. Manufacturing groups can produce goods by going to their factories and turning in some of their resource cards (be sure to follow the productivity pattern!). Students should see that order to prosper, producers have to trade with the other national manufacturers. For example, a Korean car manufacturer can get additional goods (resources) by trading 100 cars for 1000 Korean computers.

    15 mins

11. Let students exchange their resource cards for the product cards until all the resource cards are turned in at the factories.

    5 mins

12. Draw the following table on board and fill in the blanks with students. Ask students also to calculate
    1   the total production of cars and computers within their countries and
    2   the total production of cars and computers by the countries. (That is adding up the total number of cars produced in the two countries as well as the total number of computers.)

	Korea	Taiwan	Total
Cars			
Computer			
Total			

13. T: Why is it that Koreans were able to produce more cars and more computers during this round? Write down students' answers on board.
14. Teacher explains absolute advantages here: according to this example Koreans have an absolute advantage in producing both cars and computers. That is, they can produce more cars and more computers with the same resources than Taiwanese.
15. Ask the students whether Koreans could gain by trading with the Taiwanese, considering the fact that Koreans. producers are more efficient in the production of both cars and computers.
16. Teacher introduces comparative advantages here. The concept of comparative advantage relates to the opportunity cost involved in producing more of one good and less of another. The cost of producing computers is the cars that could have been produced but were not. Using the three units of PR required to produce 1000 computers in the Koreans require sacrificing the production of 150 cars. Using the four units of PR required to produce 1000 computers in Taiwan requires sacrificing only 100 cars. So even though Koreans have an absolute advantage in producing computers, Taiwanese have a comparative advantage. Put another way, Taiwanese produce computers for only two-thirds as much as it costs in Korea. The Koreans, on the other hand, have a comparative advantage over Taiwanese in the production of cars. Producing 100 cars here costs 666 computers, while producing 100 cars in Taiwanese costs 1000 computers.
17. Both nations should specialize in the production and export of that good in which it has a comparative advantage, and import the other one from the other nation in which its advantage is less. Ask students why they think producers have different opportunity costs? (They work in different

10 mins

environments with different endowments of productive resources – warmer climates and longer growing seasons; more plentiful natural resources such as oil, iron ore and water; more highly educated and skilled workers; and larger quantities of more sophisticated machinery.)	15 mins	

ROUND TWO – 15 mins:

18. T: Now if you two countries can trade your products, each country need not produce both goods yourself. You can specialize in producing one good according to your comparative advantages (discussed and calculated above). So in this round, what should Korean specialize in producing and what should Taiwanese specialize in? For those workers in the industry which doesn't have comparative advantage, please go and work in the industry which has comparative advantage in your country. (The Korean computer makers and Taiwanese car manufacturers should join in car industry and computer industry respectively in their countries.) — 5 mins

19. Provide them with the following set of resource cards (which they can divide among themselves within their group equally):
   Group 1: Korean car manufacturers: 26 2-unit-PR & 12 3-unit-PR cards (total number of PR: 88)
   Group 2: Taiwanese computer manufacturers: 9 4-unit-PR cards & 13 4-unit-PR (total number of PR: 88)

20. Ask students to calculate the total production of cars and computers in their economy in round two with specialization. — 10 mins

	Round One total	Round Two total	Total net gain through specialization and free international trade
Cars			
Computers			

21. Discussion:
   1. Compare the results of round one and two. Why are both countries better off in Round Two? (Free trade allows specialization which can generate more output of both products. It allows manufacturers in both countries to specialize in the production of that good in which they had a comparative advantage, and import the other good from the other country.)
   2. Ask students in the original group of Korean computer manufacturers and Taiwanese car manufacturers how they felt during the game when they lost their original job and had to move to another industry.

	3 Ask them what they think would happen to these kinds of manufacturers in real life? (They might close down, causing a temporary increase in unemployment, known as structural unemployment, as workers in the declining industry move to jobs in the expanding industry.) Since manufacturers in the declining industry will lose money, isn't it better to move jobs and resources to more productive uses under free trade? 4 What would the employment situation be without free trade? (Without free trade, the Koreans and Taiwanese would each employ workers in the car and computer industries. Many workers in each country would be doing jobs for which they have no comparative advantage, and in which they are less productive than they could be. When trade is free, these workers are re-directed into jobs where they are more productive and receive higher pay, since the compensation workers receive ultimately depends on how productive they are.) 22. It might be effective to close this lesson by returning to students' suggestions about why it is that people specialize and trade. Ask them once again, why is it that people should be free to trade with whomever they wish? You should emphasize that the real world is much more complex than the two-country, two-product simulation they engaged in here. However, the lesson learned here applies even more when the number of possible trading partners increases.	

Tools	➤ Materials provided in Appendix I:
	    ➤ 26 2-PR cards
	    ➤ 12 3-PR cards
	    ➤ 22 4-PR cards
	    ➤ 52 100-cars cards
	    ➤ 24 1000-computers cards
	➤ Badges / labels	

Definitions	➤ Absolute Advantage – this is enjoyed by a country when it is able to produce more of a good with the same amount of resources (Lam, 1996: 248) ➤ Comparative Advantage – this is enjoyed a country when it is able to produce a good at a lower opportunity cost than other countries (it is relatively cheaper to produce that good in that country than elsewhere) (Lam, 1996: 250). ➤ Opportunity Cost – the best alternative foregone (Parkin, 1996:8).	
References	➤ Experiment: ➤ http://www.fee.org/education/lessons/9910/printlee.html	

	➢ Definition:
	    ➢ Lam, P. L., 1996, *Advanced Level Microeconomics*: Illustrations Macmillan Publishers (HK) Ltd
	    ➢ Parkin, M. 1996. Economics 3rd ed. (Addison-Wesley Publishing Company Inc.: USA).	

Appendix   **Materials for Teacher**

Appendix I   Productive Resources & Product Cards