Teaching Plan

Title	Public Goods (Free Rider)
Instructional Objectives	➢ To illustrate the free rider problem. ➢ To tell students how free rider problem exists in the provision of public goods.
Keywords and Concepts Illustrated	➢ Public goods ➢ Free rider
Needed Time	➢ 45 minutes or more (Depends on teacher's decision)

Sessions	Details	Time Spent
Activity/ Announcement	1. Teacher assigns 2 students as your helpers. 2. T: Suppose each of you have $100 to invest in two assets. Asset A pays a fixed return of 5 percent on your **own** investment; Asset B pays a return of 10 percent on the total class investment on this asset, then the return from Asset B will be divided equally among all students in the class. For example, if the class totally invests $1000 in Asset B, each of you will receive $100/no. of students in class **regardless of the size** of your investment in this asset. 3. (Distribute an Investment Decision Slip to each student – refer to Diagram 1) T: Now, please divide your money to invest between the assets in any way you choose. How much do you want to invest in Asset A and Asset B with your $100? Write down your decision on the Investment Decision Slip. **You don't need to write you name down and don't discuss with others; just make your own decision in one minute**. At the end of each round, we will see who can earn the top three highest returns. These students can have a prize. 4. (After one minute, distribute a Profit Record Slip to each student – refer to Diagram 2). T: Now give your Investment Decision Slip to the classmate sits next to you. Ask him/her	15 mins

	to calculate the return of your investment in Asset A and write it down on your Profit Record Slip.	
	5. T: After calculating the return from investing in Asset A, please pass all your Investment Decision Slips to me, so I can calculate how much the whole class have invested in Asset B and then to calculate the return each one of you can get. (Show Table 1 by projecting it on screen or posting an enlarged one on board. Student helpers can help recording & calculating. Please note that they can record each data randomly in column 1 of Table 1. No need to identify who the investors are.).	
	6. Ask students to record their return from Asset B on their Profit Record Slips and calculate their own total returns.	
	7. Look for the three students who have the highest returns in the class and give them the prizes.	Depends on
	8. Teacher can play several more rounds if teacher thinks it is helpful to let students to be aware of the situation that everyone wants to be a free rider and doesn't want to contribute to public goods, which is Asset B in this game.	teacher's decision 10 mins
	9. T: Now, you have another chance to make your investment decision. Everything is the same, but **you can communicate with others this time**. (Ask the student helpers to stand in front of the class and be the meeting-in-charge. Give them at most five minutes to discuss whatever they want about their investment decision. They may not have any final decision, but it is ok.)	
	10. (Distribute another Investment Decision Slip and Profit Record Slip to each student.) T: Now no more communication. Write down your investment decision on your Investment Decision Slip.	
	11. Repeat step 3 to 5 mentioned above.	20 mins
	12. Discussion: 12.1. Who put all your money to invest in Asset A in the	

	first round? (Select one/two of them and ask why.) Who put all your money to invest in Asset B in the first round? (Select one/two of them and ask why.) Who invested both assets? How's the distribution of your investment? (Select one/two of them and ask why.) 12.2. What is the optimal investment decision for the class? Why couldn't the class reach this optimal investment decision? (Teacher can bring out the concept of free rider. Also, compare the features of investing in Asset B with the features of paying for a public good.) 12.3. (As a reminder of the issues students discussed in their "meeting") In the meeting, what did you discuss? Any agreement about the investment decision was made? If yes, what is your agreement and why did you make this agreement? Did everyone commit to the agreement?	
Tools	➢ Prizes ➢ Projector to show Table 1 if necessary	
Definitions	➢ Public goods – a good whose consumption by any one person does not reduce the amount available for others; it can be consumed concurrently by many individuals at the same time. (Lam, 1996) ➢ Free rider – a person who consumes a good without paying for it. (Parkin, 1996)	
References	➢ Experiment: ➢ Leuthold, Jane, Fall 1993, A Free Rider Experiment for the Large Class, *Journal of Economic Education*, vol. 24(4), pp. 353-363 ➢ Definition: ➢ Lam, P. L., 1996, *Advanced Level Microeconomics*: Illustrations Macmillan Publishers (HK) Ltd ➢ Parkin, Michael, 1996, Economics 3rd edition, Addison-Wesley Publishing Company Inc.: USA	

Appendix **Materials for Teacher**

Diagram 1 Investment Decision Slip

Diagram 2 Profit Record Slip

Table 1 Investment Decision of the Class