

## Teaching Plan

Title	Oligopoly (Advanced Level)
Instructional Objectives	➤ To introduce oligopoly ➤ To introduce some key features of oligopoly
Keywords and Concepts Illustrated	➤ Oligopoly ➤ Cartel
Needed Time	➤ 80 minutes

Sessions	Details	Time Spent
Activity/ Announcement	<ol style="list-style-type: none"> <li>1. T: Imagine you are an oligopolist, how do you make your production decision? Now, divide yourselves into six groups of six to seven. Each group is a company. All these companies produce identical commodity and sell their products in the same market. While there are certainly others who are capable of entering the market, at this point of time, these six companies do almost 98% of the worldwide business. The goal of each company is to make as much profit as possible. There are prizes for all companies that earn more than \$100 and an additional prize for the company that earns the most profit.</li> <li>2. T: Every firm has a constant marginal cost of \$8 per unit of output. Since there is no fixed cost, average total cost also equals \$8.</li> <li>3. T: You are all facing a market demand: <math>Q = 40 - (1)P</math>. That means you are facing this demand schedule. (Project Diagram 1.)</li> <li>4. T: For example, if there are 5 units of this good supplied in the market, substitute 5 into Q in this market demand schedule, you will get the market price <math>P = \\$35</math>. The whole market's profit, which is revenue minus cost, is equal to <math>(\\$35 * 5) - (\\$8 * 5) = \\$135</math>.</li> <li>5. T: Suppose each firm initially has \$100. Now decide how many goods to produce, given the cost of production and the amount of money you have in hands. Don't communicate with other firms.</li> <li>6. Distribute one Production Decision Card to each group (Refer to Table 1). Ask each group to write down its desired production amount on its Production Decision Card. Give them one minute to make their decision.</li> <li>7. Teacher should draw Table 3 on board (<i>we suggest teacher not to indicate how many rounds on board in order to focus students' attention on the current round</i>).</li> <li>8. T: (After one minute) Please hand me your Production Decision Card. Let me write down each group's output and sum up all your output produced. Then we can know the total market output. With market output, we can calculate the market price and profit for each company.</li> <li>9. After writing down each group's output and calculate the total market output on table 3, teacher should ask each</li> </ol>	<p>10 mins</p> <p>10 mins</p>

	<p>group to calculate its own cost, revenue, profit and balance and then record these information on the balance sheet. (Distribute Round 1 Balance Sheet to each group. Refer to table 2.)</p> <p>10. T: With the money you currently have, each group will now decide on the number of output you want to produce and supply in a new round. I am going to give you one more Production Decision Card. Please write down your decision on it for this round.</p> <p>11. Give them one minute and collect their Cards afterwards. Write down each group's output and calculate the total market output on table 3, teacher should ask each group to calculate its own cost, revenue, profit and balance and then record these information on a new balance sheet. (Distribute Round 2 Balance Sheet to each group.)</p> <p>12. T: Now, each company can have a representative to take part in a convention. You can discuss whatever related to your business in the convention for three minutes.</p> <p>13. (After three minutes) T: Representatives should return to your companies and no more communication between companies is allowed. I am going to distribute another Production Decision Card to each company. Write down your production decision on it for this round.</p> <p>14. Give them one minute and collect their Cards afterwards. Write down each group's output and calculate the total market output on table 3, teacher should ask each group to calculate its own cost, revenue, profit and balance and then record these information on the balance sheet. (Distribute Round 4 Balance Sheet to each group.)</p> <p>15. Then teacher can do the same procedure with a convention for Round four. <i>(Teacher must be sensitive to students' reactions in determining how many rounds of the game to play. For example, students should see the advantage of collusion by round 3. If, however, you feel that they are still exploring options in round 2, play a third round without collaboration and set up the caucus before round 4. Similarly, be aware of student response in the rounds after the collaboration. If students do not collude as a result of collaboration, do some debriefing after the payout in that round. Then allow collaboration in the next round. If students agree to restrict supply and all companies uphold the agreement, proceed with another round until a team discovers the advantage of not restricting supply when all other companies have agreed to do so.)</i></p> <p>16. Discussion:</p> <ol style="list-style-type: none"> <li>Which team made the most money? What was your strategy? Which team made the least? What was your strategy and why did it fail?</li> <li>How did you decide how much to produce?</li> <li>What did the factors affect your profit level?</li> </ol>	<p>10 mins</p> <p>5 mins</p> <p>10 mins</p> <p>10 mins</p> <p>25 mins</p>
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	<p>d) Looking at all rounds of the experiment, make a generalization about the relationship between price and level of production/supply. (Tell students that in oligopoly, the decision of quantity supplied by a firm should depend on the firm's price and on the other firms' prices and quantities sold. Firms take into account the effects of their own actions on the behavior of other firms and the effects of the actions of other firms on their own profits.)</p> <p>e) What did you talk about in the convention? Did you make some agreement? Did the agreement work? If yes, what was the impact of it on your profit? (Teacher can introduce Cartel here. If Cartel can enforce its agreement, each of its members can make higher profits than they otherwise would. However, there is always an incentive for each firm to cheat.)</p> <p>f) Use supermarkets and petrol stations in Hong Kong as example of oligopolists. Discuss the difference of price strategies these two industries use.</p> <p>17. End the experiment by giving out the prizes for companies with profits over \$100 (That is those who have \$200 or above in the final balance.) and the grand prize for the company with the most profit.</p>	
Tools	<ul style="list-style-type: none"> <li>➤ Production Decision Cards – Photocopy at least six copies of Table 1, so each group can have six Production Decision Cards.</li> <li>➤ Balance Sheet for each round – Photocopy Table 2.</li> <li>➤ Prizes</li> </ul>	
Definitions	<ul style="list-style-type: none"> <li>➤ Oligopoly – A market structure in which a small number of firms compete with each other. In oligopoly, the quantity that a firm sells depends on the firm's price and on the other firms' prices and quantities sold. Firms take into account the effects of their own actions on the behavior of other firms and the effects of the actions of other firms on their own profits. (Parkin, 1996)</li> <li>➤ Cartel – A group of firms in the same industry that agree to raise prices and restrict output is known as a cartel, and such behavior is known as collusion. (Bergstrom, Miller, 2000)</li> </ul>	
Variations of this experiments	<ul style="list-style-type: none"> <li>➤ After two rounds of the supply decision made, six firms can be merged into three, then three into one. This can show how the market concentration affects the market quantity supplied, market price and profit of firms in the industry.</li> </ul>	
References	<ul style="list-style-type: none"> <li>➤ Experiment: <ul style="list-style-type: none"> <li>➤ "Cartels and Competition" provided by Foundation for Teaching Economics Web site: <a href="http://www.fte.org/teachers/lessons/efl/wed/eflwed1.htm">http://www.fte.org/teachers/lessons/efl/wed/eflwed1.htm</a></li> </ul> </li> </ul>	

	<ul style="list-style-type: none"> <li>➤ Bergstrom, T. C. and Miller, J. H., 2000, <i>Experiments with Economic Principles: Microeconomics 2<sup>nd</sup> edition</i>: McGraw-Hill.</li> <li>➤ Definition:</li> <li>➤ Parkin, M., 1996. <i>Economics 3<sup>rd</sup> rd.</i> USA: Addison-Wesley Publishing Company, Inc.</li> </ul>	
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## **Appendix**

## **Materials for Teacher**

Diagram 1

Demand Schedule

Table 1

Production Decision Card

Table 2

Balance Sheet

Table 3

Each Group's Output Record Table