Activity: The Job Jungle: A Labor Market Game

Participants:

- **Workers:** Twenty or more students to act as workers in search of employment.
- **Employers**: Four to six students (or 8-12 students in pairs) to act as employers in the competitive kite industry.
- **Educator:** 1 or 2 students (or classroom aides) who can enhance the labor market skills of workers.

Goals:

Workers: The goal of each worker is to earn the greatest total income. Workers earn income by finding an employer who will hire them at a mutually acceptable wage or by remaining unemployed and receiving public assistance. **The winning Worker receives $5.**

Employers: The goal of each employer is to generate the greatest total profits. Profits are equal to the difference between revenues and costs of production. Employers must hire workers in order to produce kites, which generate revenues. The costs of production are determined by the wages negotiated between workers and employers. Employers try to negotiate relatively low wages in order to increase profits, while workers seek relatively high wages to maximize total income. **The winning Employer receives $5.**

Skills & Endowments:

Low-skilled workers: (*3x5 index card – any color except green)* All workers begin the first round as LOW skilled. These workers carry a yellow card that identifies them to employers as LOW skilled. Yellow cards have a random wealth endowment of $4, $5, or $6 written on the back, so all workers start off with some resources.

High-skilled workers: *(Pink 3x5 index card, or any color different from low-skilled)* At the end of any round, a worker may become HIGH skilled by acquiring an education from an educator. The worker pays $25 out of total income for this education. The educator gives the worker a pink card and collects the worker's yellow card, subtracting the "tuition" from the worker's total. *(Note: No borrowing is allowed; workers must have total income of at least $25 to become HIGH skilled.)*

How to Play the Game:

1. Discuss labor demand and supply with students. Instructors must prepare participants for this exercise with a discussion of *derived* demand for and supply of labor. The demand side discussion should explain why profit-maximizing employers will not offer more than the value of a worker's marginal product. The supply side discussion should highlight the opportunity cost a worker faces when considering whether to accept a wage offer. This is a bare-bones discussion. Other issues, such as working conditions, unemployment insurance, or economic fluctuations are not important at this point.

2. Distribute the game pieces. All workers receive low-skill cards to start the game. Each employer receives an Output and Marginal Product Schedule and a colored pen. Give the high-skill cards and a different colored pen to each educator.

3. Market price and public assistance. Ask employers and their consultants to distribute themselves around the room; they can move around later if they want to.
   - Announce to employers that the competitive market price of kites is $10. (You may change the price from round to round, depending on how complex you want to make the game.)
   - *(Option)* Announce to yellow card workers that if they do not find an acceptable job offer, they receive $15/round in income from public assistance programs. In later rounds, announce to pink card workers that they receive $35/round in income from public assistance programs if they do not accept a job offer.

4. Repeat the goals of workers and employers.
   - Note that total income and total profits are cumulative. Workers add their initial endowment to the income received in all rounds, and then subtract any education costs, to compute total income. Employers add profits generated in all rounds to compute total profits.
   - Announce rewards for the winners once again.

5. Explain the hiring process.
   - A job lasts for ***only one round***. (Make sure that workers and employers know that they are bargaining over wages in each round. Remind employers that the value of the marginal product changes with each new worker hired!)
   - When an employer and worker agree on a wage, the employer writes the wage and his or her name or ID on the worker's card with the colored pen. This ensures that workers do not try to sell their services twice in the same round because they have found a better offer.
   - **Once made, a deal cannot be broken – by either the employer or the worker.**
   - Employers also record wages paid on their Output and Marginal Product Schedule.

6. Explain how workers acquire skills.
   - At the end of any round, workers may choose to become HIGH skilled by paying $25 to an educator. The educator deducts $25 from the total income shown on the worker's yellow card and writes the new total on the worker's pink card. Workers do not keep their yellow cards!
   - Once they have invested in an education, they cannot undo this investment.

7. Play the first round. The first round may last 6-8 minutes as workers search for better job offers.
   - It is better to place a time limit on each round and announce the time remaining when the end approaches.
   - Ask all workers to sit down when the round ends.
   - Make sure that employers/consultants keep timely records on each round.

8. Ending the game. The game can be stopped after two or three rounds.
   - If more rounds are played, some of the variations discussed below should be used to keep the participants interested.
   - After potential winners have been identified, be sure to check their math. Mistakes are often made by employers.
   - In the event of a tie, a coin toss is used to determine the winner.

Game Variations:

Economic Fluctuations:
The effects of economic expansions and contractions can be added by changing the output price of kites. An output price of $6 reduces equilibrium employment by one yellow and one pink card worker for each employer. Similarly, an output price of $20 increases employment of each type by one worker.

Public Assistance:
The effects of public assistance programs can by illustrated by changing the amount of assistance paid to each type of worker. If high skill card workers receive $15 during unemployment, for example, more high skill workers are employed at the new equilibrium wage of $20.

New Employers or Entry:
The effects of entry on profits can be shown by allowing workers who have earned $100 to become employers. The new entrants drive profits close to zero if the game is played for several rounds.

Over-qualified workers: Allow high-skill card workers to accept low-skill jobs. This will act to equalize wages between pink and yellow card workers.

Employer Record

Employer # _____

Round #1 – Wages Paid

Yellow Card		*Pink Card*	
Worker Hired	Wage Paid	Worker Hired	Wage Paid
1st		1st	
2nd		2nd	
3rd		3rd	
4th		4th	
5th		5th	
6th		6th	
Total		Total	XXXXXX

Round #1 – Profit Calculation

Output (All Workers)	
times Price of Kites	
equals TOTAL REVENUE	
Total Yellow Card Wages	
plus Total Pink Card Wages	XXXXXX
equals TOTAL COST	
TOTAL REVENUE – TOTAL COST	

Round #2 – Wages Paid

Yellow Card		*Pink Card*	
Worker Hired	Wage Paid	Worker Hired	Wage Paid
1st		1st	
2nd		2nd	
3rd		3rd	
4th		4th	
5th		5th	
6th		6th	
Total		Total	

Round #2 – Profit Calculation

Output (All Workers)	
times Price of Kites	
equals TOTAL REVENUE	
Total Yellow Card Wages	
plus Total Pink Card Wages	
equals TOTAL COST	
TOTAL REVENUE – TOTAL COST	

Round #3 – Wages Paid

Yellow Card		*Pink Card*	
Worker Hired	Wage Paid	Worker Hired	Wage Paid
1st		1st	
2nd		2nd	
3rd		3rd	
4th		4th	
5th		5th	
6th		6th	
Total		Total	

Round #3 – Profit Calculation

Output (All Workers)	
times Price of Kites	
equals TOTAL REVENUE	
Total Yellow Card Wages	
plus Total Pink Card Wages	
equals TOTAL COST	
TOTAL REVENUE – TOTAL COST	

Round #4 – Wages Paid

Yellow Card		*Pink Card*	
Worker Hired	Wage Paid	Worker Hired	Wage Paid
1st		1st	
2nd		2nd	
3rd		3rd	
4th		4th	
5th		5th	
6th		6th	
Total		Total	

Round #4 – Profit Calculation

Output (All Workers)	
times Price of Kites	
equals TOTAL REVENUE	
Total Yellow Card Wages	
plus Total Pink Card Wages	
equals TOTAL COST	
TOTAL REVENUE – TOTAL COST	

Round #5 – Wages Paid

Yellow Card		*Pink Card*	
Worker Hired	Wage Paid	Worker Hired	Wage Paid
1st		1st	
2nd		2nd	
3rd		3rd	
4th		4th	
5th		5th	
6th		6th	
Total		Total	

Round #5 – Profit Calculation

Output (All Workers)	
times Price of Kites	
equals TOTAL REVENUE	
Total Yellow Card Wages	
plus Total Pink Card Wages	
equals TOTAL COST	
TOTAL REVENUE – TOTAL COST	

Round #6 – Wages Paid

Yellow Card		*Pink Card*	
Worker Hired	Wage Paid	Worker Hired	Wage Paid
1st		1st	
2nd		2nd	
3rd		3rd	
4th		4th	
5th		5th	
6th		6th	
Total		Total	

Round #6 – Profit Calculation

Output (All Workers)	
times Price of Kites	
equals TOTAL REVENUE	
Total Yellow Card Wages	
plus Total Pink Card Wages	
equals TOTAL COST	
TOTAL REVENUE – TOTAL COST	

Output and Marginal Product Schedule

Price of Kites: $_____

YELLOW CARD WORKERS				PINK CARD WORKERS			
Worker Hired	Kites Produced	Marginal Product (MP)	P x MP	Worker Hired	Kites Produced	Marginal Product (MP)	P x MP
1st	5	5		1st	8	8	
2nd	8	3		2nd	14	6	
3rd	10	2		3rd	19	5	
4th	11	1		4th	22	3	
5th	12	1		5th	24	2	
6th	12	0		6th	25	1	