

Appendix 2: Instructions to Participants

Instructions for all Participants:

There are equal numbers of three types of participants in this experiment: firms, type-I workers, and type-II workers. **Once you have been randomly assigned a type, you will have that same type for the whole experiment.** The experiment consists of 30 periods. In each period, each firm will be grouped with two workers (one of each type). Firms and workers are randomly re-matched every period, subject to the restriction that no two workers will ever be paired with the same firm in consecutive periods.

Here is some relevant information:

1. Each firm is paired with two workers, one of each type. **Pairings change every period.**
2. Firms have a fixed endowment each period, and pay total wages each period not to exceed the level of this endowment; wages are restricted to be in whole lab dollars, e.g. \$0, \$1, \$2., etc. **However, firms are not required to offer anyone a wage greater than 0 at any time;** this is a choice for each individual firm in each period.
3. After firms pay wages, **workers observe the wage assigned and choose effort** from one of 4 feasible levels: zero, low, medium, and high. **Firms are informed about each worker's choice of effort.**
4. Each firm receives the endowment plus the revenue generated by each worker's effort level, less the total wages paid.
5. Each worker receives the wage assigned, less the cost of the effort level chosen.
6. Zero effort costs the worker nothing, and yields zero revenue for the firm. The cost of effort increases with the effort level, as does the revenue produced for the firm.
7. Each worker only sees his or her own productivity schedule, while the firm sees the productivity schedules for both worker types.
8. Earnings accumulate for firms and workers over the course of the session.
9. **There are different conversion rates from lab dollars to real dollars for the three player types.** Your conversion rate will be given on your other instructional materials.

After answering questions regarding these procedures, we will randomly divide participants into the three types of agents.

Do you have any questions?

Instructions for Firms:

At the beginning of each period your account will be credited with 4 lab dollars (**16 lab dollars = \$1**), and you will be matched with a team of two workers. Your team will consist of one type-I worker and one type-II worker. You then decide what wages to offer to each individual worker in that team. Wages must be in whole dollars (e.g. \$0, \$1, \$2. etc.) and total wages cannot exceed your \$4. endowment. Each of your two workers will be informed of his or her wage and will then choose how hard to work for you. The more “effort” supplied, the more revenues you earn. But effort is costly to the workers.

Each team of workers has one type-I member and one type-II member. Each type faces a different cost for each level of effort. Table 1 shows these, as well as the revenue produced for each effort level. Workers see the same table as you do, except that the column reflecting costs and revenues for the other type of worker is deleted.

Table 1

Effort Level	Cost to Worker	Revenue produced by Type 1 Worker	Revenue produced by Type II Worker
Zero	0	0	0
Low	.10	1.90	2.80
Medium	.30	2.50	4.20
High	.60	2.70	5.40

- 1) For either worker, zero effort has no cost and produces no revenue for the firm.
- 2) Low effort by a Type I worker generates revenues of 1.90 lab dollars, while low effort by a Type II worker generates 2.80 lab dollars.
- 3) Medium effort by a Type I worker generates revenues of 2.50 lab dollars, while medium effort by a Type II worker generates 4.20 lab dollars.
- 4) High effort by a Type I worker generates revenues of 2.70 lab dollars, while high effort by a Type II worker generates 5.40 lab dollars.

From period 1 through 10, workers will NOT know the wage you pay the other worker in your team; they will only see their own wage. (Workers know that additional information becomes available starting in period 11, but won't know the nature of this information till then.)

From period 11 through period 25, each worker will be told the wage paid to the other worker. In addition, at the beginning of each period from period 11 through period 25, the computer will randomly-determine (and display) whether there is an additional simple restriction on the kinds of payments you can make to your two workers (the details will be announced then). However, the workers will not know about the possibility of this restriction.

From period 26 through 30, the rules revert back to what they were in periods 1-10: workers see their own wage only and no restrictions are placed on the wages you can pay.

At the end of round 30, you will be paid \$5 for participating in this experiment, plus \$1 for every 16 lab dollars in your account at that time.

If you have any questions, please raise your hand.

Instructions for Type-I workers:

In each period you and another worker are paired with a firm. This firm will choose wages for you and for the other worker. After being informed of your wage, you then choose how hard to work for your firm. The more “effort” you supply, the more revenues your firm will earn. But effort is costly to you. Table 1 shows these costs and the revenues produced for each effort level. For you, **2.75 lab dollars = \$1**.

Table 1

Effort Level	Cost to You	Revenue produced for the Firm
Zero	0	0
Low	.10	1.90
Medium	.30	2.50
High	.60	2.70

- 1) Zero effort has no cost and produces no revenue for the firm.
- 2) Low effort generates revenues of 1.90 lab dollars.
- 3) Medium effort generates revenues of 2.50 lab dollars.
- 4) High effort generates revenues of 2.70 lab dollars.

From period 11 through period 26, the experimenter will provide you with some extra information about the actions of “your” firm for that period before you decide how much effort to supply.

Your choice of effort will be conveyed to the firm at the end of the period.

At the end of period 30, you will be paid \$5 for participating in this experiment, plus \$1 for every 2.75 lab dollars in your account at that time.

If you have any questions, please raise your hand.

Instructions for Type-II workers:

In each period you and another worker are paired with a firm. This firm will choose wages for you and for the other worker. After being informed of your wage, you then choose how hard to work for your firm. The more “effort” you supply, the more revenues your firm will earn. But effort is costly to you. Table 1 shows these costs and the revenues produced for each effort level. For you, **4 lab dollars = \$1**.

Table 1

Effort Level	Cost to You	Revenue produced for the Firm
Zero	0	0
Low	.10	2.80
Medium	.30	4.20
High	.60	5.40

- 1) Zero effort has no cost and produces no revenue for the firm.
- 2) Low effort generates revenues of 2.80 lab dollars.
- 3) Medium effort generates revenues of 4.20 lab dollars.
- 4) High effort generates revenues of 5.40 lab dollars.

From period 11 through period 25, the experimenter will provide you with some extra information about the actions of “your” firm for that period before you decide how much effort to supply.

At the end of period 30, you will be paid \$5 for participating in this experiment, plus \$1 for every 4 lab dollars in your account at that time.

If you have any questions, please raise your hand.