

# Welcome to the Economics Study!

This experiment is a study of group and individual investment behavior. The instructions are simple. If you follow them carefully and make good investment decisions, then you may earn a considerable amount of money. If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question.

The experiment will last about an hour. You may not use your cell phone during the experiment, so please take a moment to turn it off now.

## The Experiment

You have been randomly assigned to group of 4 people. You will be in this same group of 4 people for the duration of the experiment. There will be 10 **periods** in this session. In each period you will be required to make some decisions and what you earn from each decision will depend on what you and the other 3 people in your group decide.

Once all your decisions in the 10 periods have been made, we will randomly select one of the 10 periods as the **period-that-counts**. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make your decision in each period as if it will be the period-that-counts.

## Three Stage Decision

### Stage 1: Investment Decision

You have been assigned to a group of 4 players that will stay constant for the duration of the experiment.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

#### THE RED INVESTMENT

Each token you invest in the **RED** investment will earn you a return of **\$2.00**.

*Example 1:* Suppose you invest 4 tokens in the **RED** investment, then you would earn **\$8.00** from this investment.

*Example 2:* Suppose you invest 0 tokens in the **RED** investment, then you would earn **\$0.00** from this investment.

#### THE BLUE INVESTMENT

What you earn from the **BLUE** investment will depend on the total number of tokens that you and the other 3 members of your group invest in the **BLUE** investment. The more the group invests in the **BLUE** investment, the more each member of the group earns.

Each token you invest in the **BLUE** investment will earn you and all your group members a return of **\$1.00**.

The process is best explained by a number of examples.

*Example 3:* Suppose that you decided to invest no tokens in the **BLUE** investment but that the 3 other members invest a total of 9 tokens. Then your earnings from the **BLUE** investment would be **\$9.00**. Everyone else in your group would also earn **\$9.00**.

## 2- ENDG GroupMonitor-ConcentratedP (Unanimous)

*Example 4:* Suppose that you invest 2 tokens in the **BLUE** investment and that the 3 other members of your group invest a total of 9 tokens. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$11.00**. The other 3 members of the group would also get a return of **\$11.00**.

*Example 5:* Suppose that you invest 3 tokens in the **BLUE** investment and the other 3 members invest nothing. Then you, and everyone else in the group, would get a return from the **BLUE** investment of **\$3.00**.

As you can see, every token invested in the **BLUE** investment will earn **\$1.00** for every member of the group, not just the person who invests it there. *It does not matter who invests tokens in the **BLUE** investment. Everyone will get a return from every token invested there—whether they invest tokens in the **BLUE** investment or not.*

### YOUR TASK

Your task is to decide how many of your tokens to invest in the **RED** investment and how many to invest in the **BLUE** investment. You are free to invest some of your tokens in the **RED** investment and some in the **BLUE** investment. Alternatively, you can invest all of them into the **RED** investment or all of them into the **BLUE** investment.

## Stage 1 Earnings

Once you and the other 3 members of your group have made your decisions, you will receive an **Earnings Statement** for that period.

Your earnings will be computed using the following simple formula:

---

$$1^{\text{st}} \text{ Stage Earnings} = (\$2) * (\text{Your investment to RED}) + (\$1) * (\text{Total group investments to BLUE})$$

---

For example imagine you invested 4 to the **BLUE** investment and the other group members invest 2, 3, and 3 tokens to the **BLUE** investment.

In this example 1<sup>st</sup> stage earnings are computed as follows:

$$1^{\text{st}} \text{ Stage Earnings} = (\$2.00) * (5-4) + (\$1.00) * (4 + 2 + 3 + 3)$$

$$1^{\text{st}} \text{ Stage Earnings} = (\$2.00) * (1) + (\$1.00) * (12)$$

$$1^{\text{st}} \text{ Stage Earnings} = \$2.00 + \$12.00$$

$$1^{\text{st}} \text{ Stage Earnings} = \$14.00$$

**You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.**

## Stage 2: Information Decision

### Information Fee

In Stage 2 of each period you will be given a Stage 2 endowment of \$1. You can use that dollar to purchase the chance to reveal information about some other group member. This information may help you to learn about the contribution decisions of your other group members in Stage 1.

**Note that if information is not purchased about another group member, then no one can deduct from that Person's earnings in Stage 3.** We will explain Stage 3 deductions in a minute.

Each person in your group can choose to pledge a dollar toward an Information Fund. Alternatively, each person can choose to pledge \$0.00 toward the Information Fund.

Once all 4 members of your group have entered pledges to the Information Fund, the sum of these pledges will be computed. If your group's pledges total **\$4.00 dollars or more**, then your group will have purchased a chance to reveal the Stage 1 investment choices of some other group members.

If your group members pledge at least \$4.00 to the Information Fund:

Then the Information Fund has reached its threshold, and you and everyone in your group will pay \$1 (even if you did not pledge a dollar) to the Information Fund. Additionally, you may be able to deduct from the earnings of another group member in Stage 3.

If your group members do not pledge at least \$4.00 to the Information Fund:

Then the Information Fund has NOT reached its threshold, and you will be refunded any pledge you made to the Information Fund. Additionally, you will not be able to deduct from the earnings of another group member in Stage 3.

The process is best explained by a few examples.

*Example 6:* Suppose you pledge \$1.00 to the Information Fund. The other players in your group pledge a total of \$3.00 to the Information Fund. The total in the Information Fund is \$4.00, which is equal to the threshold of \$4.00. You and everyone else will pay the \$1.00 to the Information Fund.

*Example 7:* Suppose you pledge \$1.00 to the Information Fund. The other players in your group pledge a total of \$0.00 in the Information Fund. Then total in the Information Fund is \$1.00, which is less than the threshold of \$4.00. You will be refunded the \$1.00 pledge you made to the Information Fund.

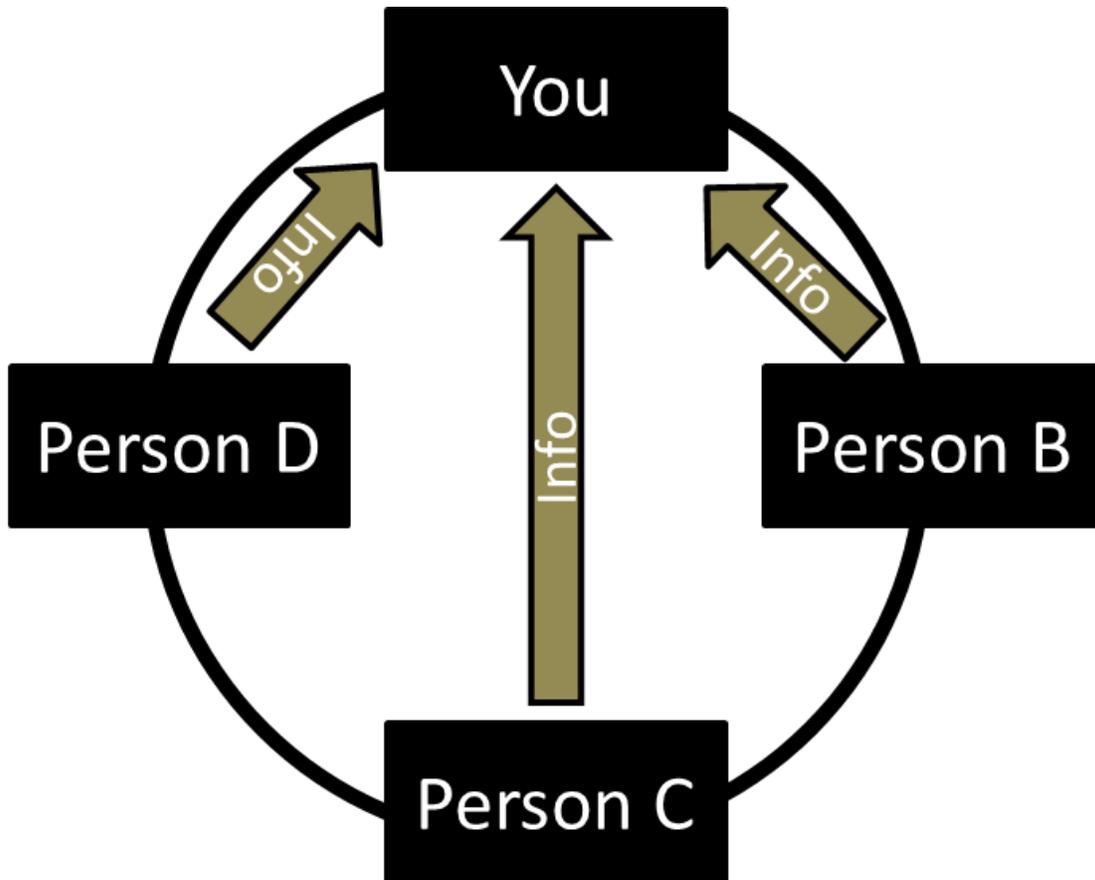
So, you only pay \$1.00, if the group reaches the threshold of \$4.00.

## Group Member Information

If your group meets or exceeds the Information Fund threshold, then your group will have purchased a chance to have each person be informed about the investment choices of the other 3 group members as illustrated in the diagram below. This will also give you the opportunity to deduct from another subject's earnings in Stage 3.

*When the Information Fund threshold is met, there is a two out of three chance, or 66.6% chance, the information will be revealed. The computer will roll a three sided die for each group member. If the die lands on 1 or 2 then information about that group member will be revealed. If the die lands on 3, then no information will be revealed. The die will be rolled once for Person A, once for Person B, once for Person C and once for Person D.*

Remember that you will be in the same group for the duration of the experiment, so that "Person A" will always be the same person.

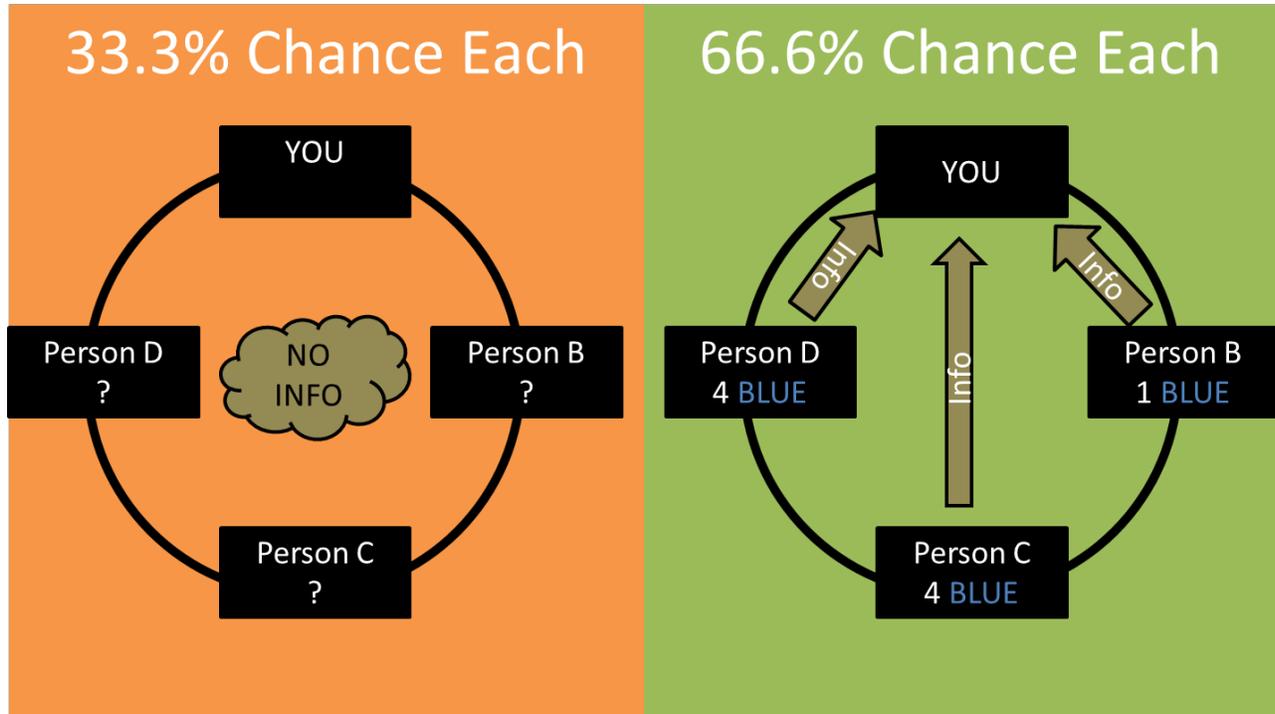


## 5- ENDG GroupMonitor-ConcentratedP (Unanimous)

The process is best explained by a few examples.

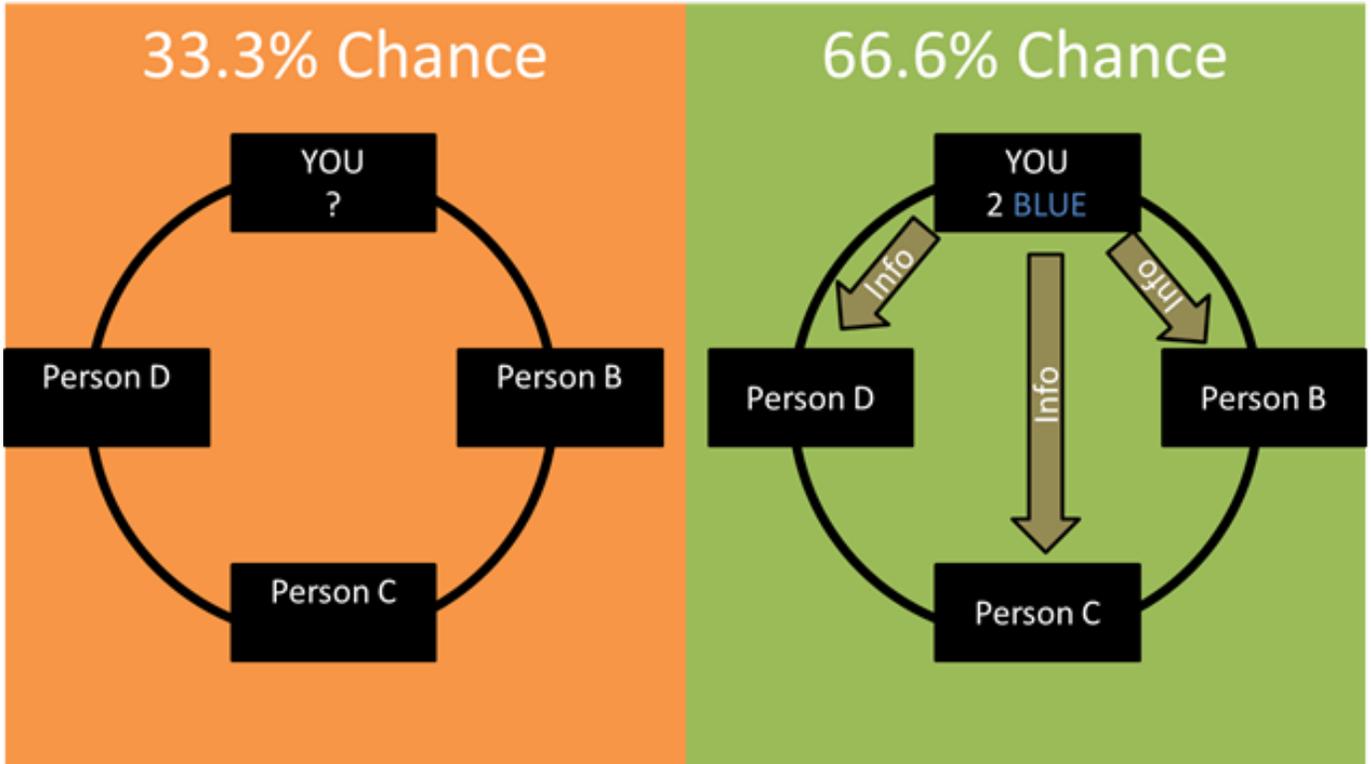
*Example 8 (WHAT YOU SEE):* You and your other group members make the following Stage 1 investments to the **BLUE** investment. You are Person A and you invest 3 in **BLUE**, Person B invests 1, Person C invests 4, and Person D invests 4. That means that Person B was the lowest **BLUE** investor. You were the second lowest, and Person C & Person D invested the most in **BLUE**. If the Information Fund threshold is met, then:

- There is a 33.3% chance you will see “no info” for each of your group members as pictured in the orange portion of the diagram below. And...
- There is a 66.6% chance you will see the contributions of each of your 3 other group members to the **BLUE** investment as pictured in the green portion of the diagram below.
- That means you may see information for 0, 1, 2 or 3 other group members.



*Example 9 (WHAT OTHERS SEE):* Suppose that you and your other group members make the following Stage 1 investments to the **BLUE** account. You are Person A and you invest 2, Person B invests 2, Person C invests 4, and Person D invests 4. That means that You and Person B were the lowest **BLUE** investors. Person C and D invested the most in **BLUE**. If the Information Fund threshold is met, then

- There is a 33.3% chance each group member will see “no info” about your actions as pictured in the orange portion of the diagram below. And...
- There is a 66.6% chance your action will be revealed to each group member as pictured in the green portion of the diagram below.
- That means that either no one in your group will see your contribution OR everyone in your group will see your contribution.



## Earnings

Your payoff from Stage 2 is computed using the following simple formula.

---

If the group investments to the Information Fund *meets* the threshold of 4 pledges:

Stage 2 Earnings = 1st stage Earnings+ \$1 Stage 2 endowment – \$1 for the information fee

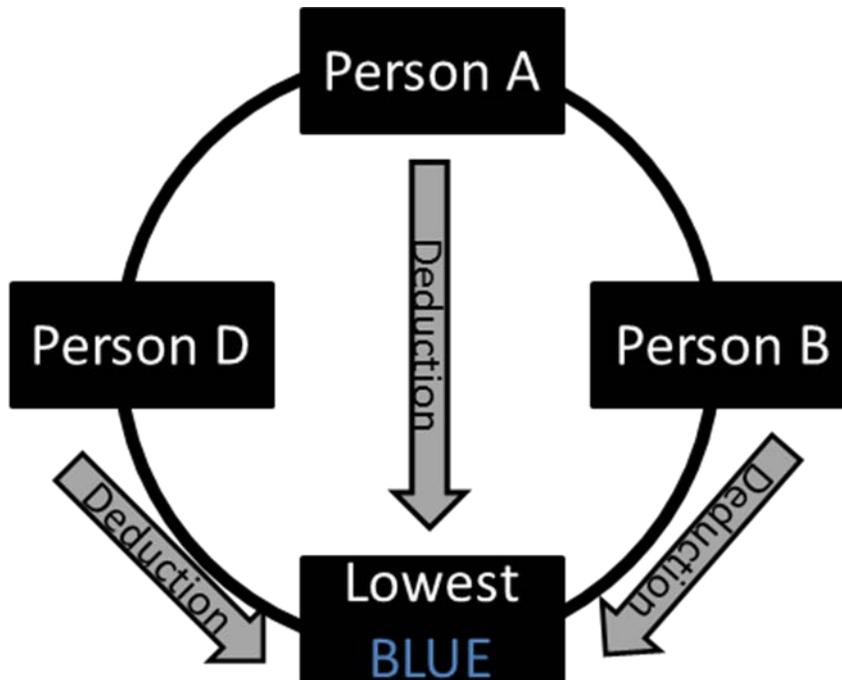
If the group investments to the Information Fund are *less than* the threshold of 4 pledges:

Stage 2 Earnings = 1st stage Earnings+ \$1 Stage 2 endowment

---

## Stage 3: Deduction Decision

During Stage 3 you and your other group members can **change** or **leave unchanged** the earnings of another group member. We will start with all the group members who had information about them revealed in Stage 2, and then we will find which of these members was the lowest contributor to the **BLUE** investment. That “lowest detected **BLUE** investor” is the person that can have their earnings reduced in Stage 3. Recall that you can only be detected if the information fee was paid to detect your **BLUE** contributions in Stage 2. For example in the picture below if Person C was the “lowest detected **BLUE** investor” then Person A, B and D can reduce that group member’s payoff.



You and your other group members now have to decide how many deduction points to assign to the “lowest detected **BLUE** investor”. If you assign deduction points, there will be a cost for each deduction point that you assign. The more deduction points you assign the higher are your costs. Each deduction point costs you \$1.00.

If you assign 0 deduction points, you do not change the earnings of this group member. If however, you assign 1 deduction point, you reduce that group member’s earnings by \$3.00.

In general all the deduction points purchased by your group will be used to reduce the earnings of the lowest contributor to the **BLUE** investment. However there are two special cases:

**SPECIAL CASE 1:** If two or more people in your group tie as the “lowest detected **BLUE** investor(s)”, then deductions will be split equally across them, and they will all have their payoffs reduced.

**SPECIAL CASE 2:** If the “lowest detected **BLUE** investor” contributed 5 tokens to the **BLUE** investment, then there will not be any deductions this period. All the money you spent on deduction points will be refunded to you.

The process is best explained by a few examples.

## 8- ENDG GroupMonitor-ConcentratedP (Unanimous)

*Example 10:* You are Person A and you give 2 tokens in the **BLUE** investment. Suppose that Person B and Person C invest the most in the **BLUE** by each investing 4, and Person D invests the least by investing 1 token in the **BLUE** investment. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$11.00**. The other 3 members of the group would also get a return of **\$11.00** from the **BLUE** investment. Your initial Stage 1 payoff is:  
 $3 * (\$2.00) + (2 + 4 + 4 + 1) * (\$1.00) = \$17.00$

In Stage 2, suppose you do not pay the \$1.00 information fee, and the information fund threshold was not met. So information about all your group members' actions was not detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$17.00 + \$1.00 \text{ endowment} - \$0.00 = \$18.00$$

Last, in Stage 3 you cannot purchase any deduction points, since no one was detected in Stage 2. Your final payoff at the end of all three stages:

$$\$18.00 - \$0.00 \text{ for deductions you purchased} - \$0.00 \text{ for deductions assigned to you} = \$18.00$$

*Example 11:* You are Person A and you invest 1 token in the **BLUE** investment. Suppose that Person B also invests 1 token in **BLUE**, so that you both invest the least in **BLUE**. Suppose Person C invests the most in the **BLUE** by investing 4, and Person D invests 3 tokens in the **BLUE** investment. This makes a group total of 9 tokens. Your return from the **BLUE** investment would be **\$9.00**. The other 3 members of the group would also get a return of **\$9.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$4 * (\$2.00) + (1 + 1 + 4 + 3) * (\$1.00) = \$17.00$$

In Stage 2, suppose you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$17.00 + \$1.00 \text{ endowment} - \$1.00 \text{ for purchasing information} = \$17.00$$

Last, suppose in Stage 3 Person C purchases 1 deduction point and Person D purchases 2 deduction points. This costs Person C \$1.00 and Person D \$2.00. The total of 3 deduction points will reduce the payoffs of the "lowest detected **BLUE** investor(s)" by a total of \$9.00. You and Person B tied for being the lowest **BLUE** investors so you will each lose \$4.50 (\$9.00 divided equally between you both) as a result of Person C's and D's deduction points. Your final payoff at the end of all three stages:

$$\$17.00 - \$0.00 \text{ for deductions you purchased} - \$4.50 \text{ for deductions assigned to you} = \$12.50$$

*Example 12:* Suppose that you invest 5 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment respectively. This makes a group total of 20 tokens. Your return from the **BLUE** investment would be **\$20.00**. The other 3 members of the group would also get a return of **\$20.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$0 * (\$2.00) + (5 + 5 + 5 + 5) * (\$1.00) = \$20.00$$

In Stage 2, suppose you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$20.00 + \$1.00 - \$1.00 \text{ for purchasing information} = \$20.00$$

Last, suppose in Stage 3 you purchase 0 deduction points. This costs you \$0.00 and reduces the payoff of the "lowest detected **BLUE** investor" by \$0.00. Your final payoff at the end of all three stages:

$$\$20.00 - \$0.00 \text{ for deductions you purchased} - \$0.00 \text{ for deductions assigned to you} = \$20.00$$

*Example 13:* You invest 0 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment, respectively. So that you are lowest **BLUE** investor. This makes a group total of 15 tokens. Your return from the **BLUE** investment would be **\$15.00**. The other 3 members of the group would also get a return of **\$15.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$5 * (\$2.00) + (5 + 5 + 5) * (\$1.00) = \$25.00$$

In Stage 2, suppose you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$25.00 + \$1.00 - \$1.00 \text{ for purchasing information} = \$25.00$$

Last, in Stage 3 you purchase 0 deduction points. This costs you \$0.00. Suppose that only Person D, purchases 1 deduction point, since you are the lowest **BLUE** investor this will lower your payoff by \$3.00, making your final payoff at the end of all three stages:

$$\$25.00 - \$0.00 \text{ for deductions you purchased} - \$3.00 \text{ for deductions assigned to you} = \$22.00$$

## Earnings

Your total earnings from the three stages are therefore calculated as follows:

---

Total Earnings at the end of the period = 1st stage Earnings+ \$1 Stage 2 endowment – \$1 if pay information fee- Total of Deductions you receive if you are the “lowest detected BLUE investor”– Cost of Deductions you assign

---

Please note that using this formula, your earnings at the end of the period can be negative. If this happens, we will pay you \$0.00 for this period. You cannot owe us money at the end of the session.

**You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.**

### Your Group

**You will be randomly matched with a group of 4 people in the room for the duration of the experiment today.** In other words, Person A, B, C and D will remain constant for the entire experiment.

### Things to Remember

- You will be in a group of 4 people
- Your group will be constant for all 10 periods.
- In Stage 1 you decide how to invest 5 tokens in the RED or BLUE investment
  - Tokens in the RED investment pay \$2 to only you
  - Tokens in the BLUE investment pay \$1 to all group members
- In Stage 2 you can pledge \$1.00 toward an Information Fund, from your \$1 Stage 2 endowment.
  - If your group investment in the Information Fund meets or exceeds 4 pledges then you *may* find out the Stage 1 investment choices of your other group members
    - If the Information Fund threshold is met, you will pay \$1 to the Information Fund. And when the Information Fund Threshold is met:
      - There is a 66.6% chance you will be informed about the contributions to the BLUE investment by your each of your other 3 group members.
    - If the Information Fund threshold is NOT met, then your group will not find out any information about Stage 1 investment choices and you will be refunded any pledges you made to the Information Fund.
- In Stage 3 you can reduce the earnings of the “lowest detected BLUE investor” by assigning deduction points.
  - If there are ties for “lowest detected BLUE investor” the deductions will be evenly split among all who tied.
  - You pay \$1.00 for each deduction point you assign.
  - Each deduction point you assign to another group member will reduce their earnings by \$3.00.
  - If the “lowest detected BLUE investor” contributed 5 tokens to the BLUE investment, then their payoff will not be reduced. All the money you spent on deduction points will be refunded to you.
- If your period earnings are negative we will pay you \$0.00 for this period.
- You will only be paid for one randomly selected period from the 10 you participate in.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

**Thank you.**

**Please wait to be told when you can begin making decisions for the next 10 periods.**

# Welcome to the Economics Study!

This experiment is a study of group and individual investment behavior. The instructions are simple. If you follow them carefully and make good investment decisions then you may earn a considerable amount of money. If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question.

The experiment will last about an hour. You may not use your cell phone during the experiment, so please take a moment to turn it off now.

## The Experiment

You have been randomly assigned to group of 4 people. You will be in this same group of 4 people for the duration of the experiment. There will be 10 **periods** in this session. In each period you will be required to make some decisions and what you earn from each decision will depend on what you and the other 3 people in your group decide.

Once all your decisions in the 10 periods have been made, we will randomly select one of the 10 periods as the **period-that-counts**. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make your decision in each period as if it will be the period-that-counts.

## Three Stage Decision

### Stage 1: Investment Decision

You have been assigned to a group of 4 players that will stay constant for the duration of the experiment.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

#### THE RED INVESTMENT

Each token you invest in the **RED** investment will earn you a return of **\$2.00**.

*Example 1:* Suppose you invest 4 tokens in the **RED** investment, then you would earn **\$8.00** from this investment.

*Example 2:* Suppose you invest 0 tokens in the **RED** investment, then you would earn **\$0.00** from this investment.

#### THE BLUE INVESTMENT

What you earn from the **BLUE** investment will depend on the total number of tokens that you and the other 3 members of your group invest in the **BLUE** investment. The more the group invests in the **BLUE** investment, the more each member of the group earns.

Each token you invest in the **BLUE** investment will earn you and all your group members a return of **\$1.00**.

The process is best explained by a number of examples.

*Example 3:* Suppose that you decided to invest no tokens in the **BLUE** investment but that the 3 other members invest a total of 9 tokens. Then your earnings from the **BLUE** investment would be **\$9.00**. Everyone else in your group would also earn **\$9.00**.

## 2-ENDG PeerMonitor-ConcentratedPunishment

*Example 4:* Suppose that you invest 2 tokens in the **BLUE** investment and that the 3 other members of your group invest a total of 9 tokens. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$11.00**. The other 3 members of the group would also get a return of **\$11.00**.

*Example 5:* Suppose that you invest 3 tokens in the **BLUE** investment and the other 3 members invest nothing. Then you, and everyone else in the group, would get a return from the **BLUE** investment of **\$3.00**.

As you can see, every token invested in the **BLUE** investment will earn **\$1.00** for every member of the group, not just the person who invests it there. *It does not matter who invests tokens in the **BLUE** investment. Everyone will get a return from every token invested there—whether they invest tokens in the **BLUE** investment or not.*

### YOUR TASK

Your task is to decide how many of your tokens to invest in the **RED** investment and how many to invest in the **BLUE** investment. You are free to invest some of your tokens in the **RED** investment and some in the **BLUE** investment. Alternatively, you can invest all of them into the **RED** investment or all of them into the **BLUE** investment.

## Stage 1 Earnings

Once you and the other 3 members of your group have made your decisions, you will receive an **Earnings Statement** for that period.

Your earnings will be computed using the following simple formula:

---

$$1^{\text{st}} \text{ Stage Earnings} = (\$2) * (\text{Your investment to RED}) + (\$1) * (\text{Total group investments to BLUE})$$

---

For example imagine you invested 4 to the **BLUE** investment, your other group members invest 2, 3, and 3 to the **BLUE** investment.

In this example 1<sup>st</sup> stage earnings are computed as follows:

$$1^{\text{st}} \text{ Stage Earnings} = (\$2.00) * (5-4) + (\$1.00) * (4 + 2 + 3 + 3)$$

$$1^{\text{st}} \text{ Stage Earnings} = (\$2.00) * (1) + (\$1.00) * (12)$$

$$1^{\text{st}} \text{ Stage Earnings} = \$2.00 + \$12.00$$

$$1^{\text{st}} \text{ Stage Earnings} = \$14.00$$

**You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.**

## Stage 2: Information Decision

### Information Fee

In Stage 2 of each period you will be given a Stage 2 endowment of \$1. You can use that dollar to purchase the chance to reveal information about another group member. This information may help you to learn about the contribution decisions of your other group members in Stage 1.

**Note that if information is not purchased about another group member, then no one can deduct from that Person's earnings in Stage 3.** We will explain Stage 3 deductions in a minute.

Each person in your group can choose to pay a \$1.00 Information Fee. Alternatively, each person can choose to not pay the Information Fee. If you pay the Information Fee then you will have purchased a chance to reveal the Stage 1 investment choices of a group member. We will detail which group member in a moment.

If you choose to pay the \$1.00 Information Fee:

Then you will pay \$1.00. Additionally, you may be able to deduct from the earnings of another group member in Stage 3.

If you choose to not pay the \$1.00 Information Fee:

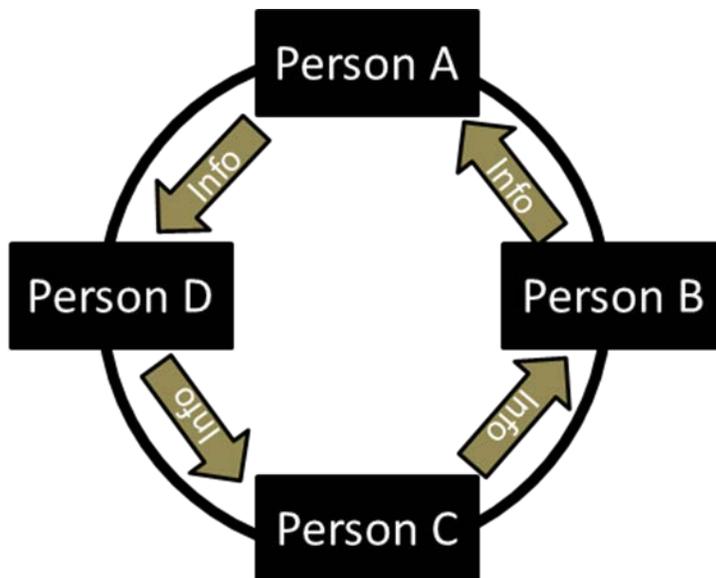
Then you will pay \$0.00. Additionally, you will not be able to deduct from the earnings of another group member in Stage 3.

## Group Member Information

If you pay the Information Fee, then you have purchased a chance to reveal the Stage 1 investment choices of your “right side group member.” Your “right side group member” is the person to the right hand side of you as illustrated in the following diagram. So that Person A can purchase information about Person B; Person B about Person C; Person C about Person D; and Person D about Person A.

*When the Information Fee is paid, there is a two out of three chance, or 66.6% chance, the information will be revealed.* The computer will roll a three sided die for each group member. If the die lands on 1 or 2 then information about that group member will be revealed. If the die lands on 3, then no information will be revealed. The die will be rolled once for Person A, once for Person B, once for Person C and once for Person D.

Remember that you will be in the same group for the duration of the experiment, so that “Person A” will always be the same person.



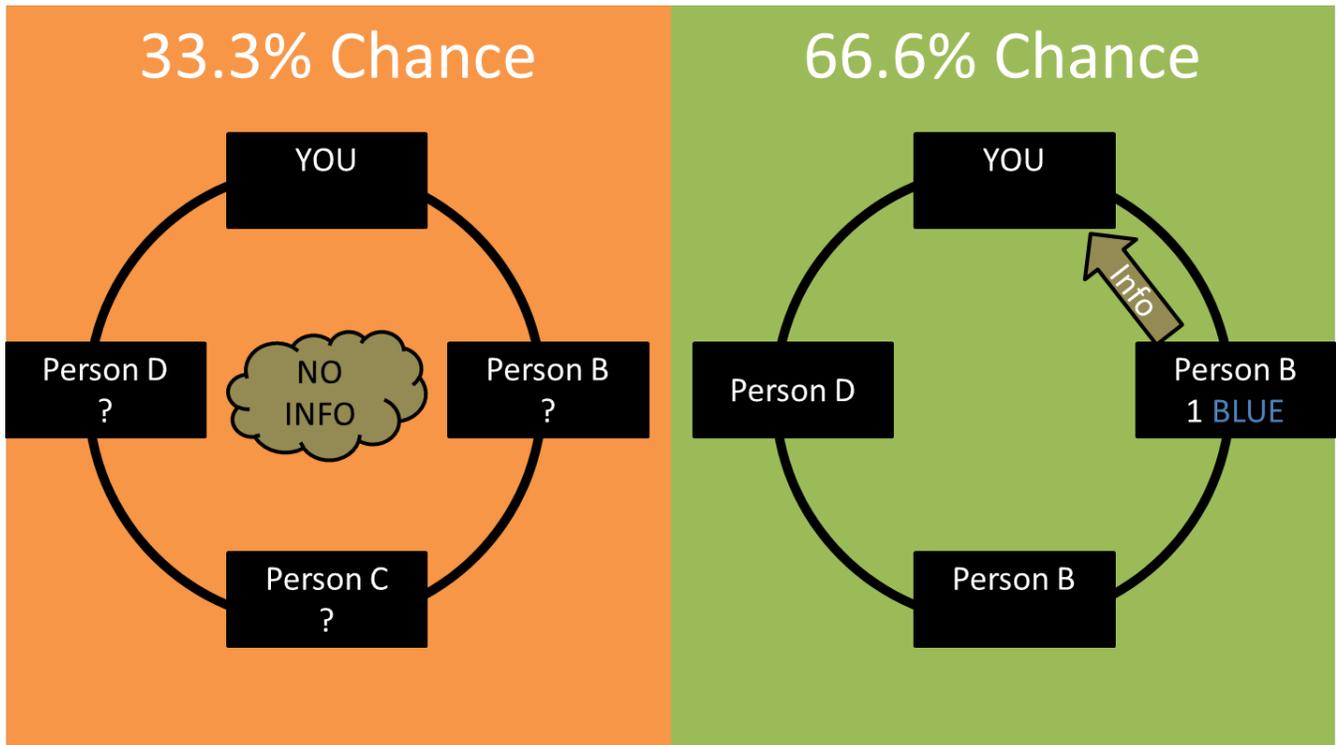
The process is best explained by a few examples.

## 5-ENDG PeerMonitor-ConcentratedPunishment

*Example 6 (WHAT YOU SEE):* You and your other group members make the following Stage 1 investments to the **BLUE** investment. You are Person A and you invest 3 in **BLUE**, Person B invests 1, Person C invests 4, and Person D invests 4. That means that Person B was the lowest **BLUE** investor. You were the second lowest, and Person C & Person D invested the most in **BLUE**.

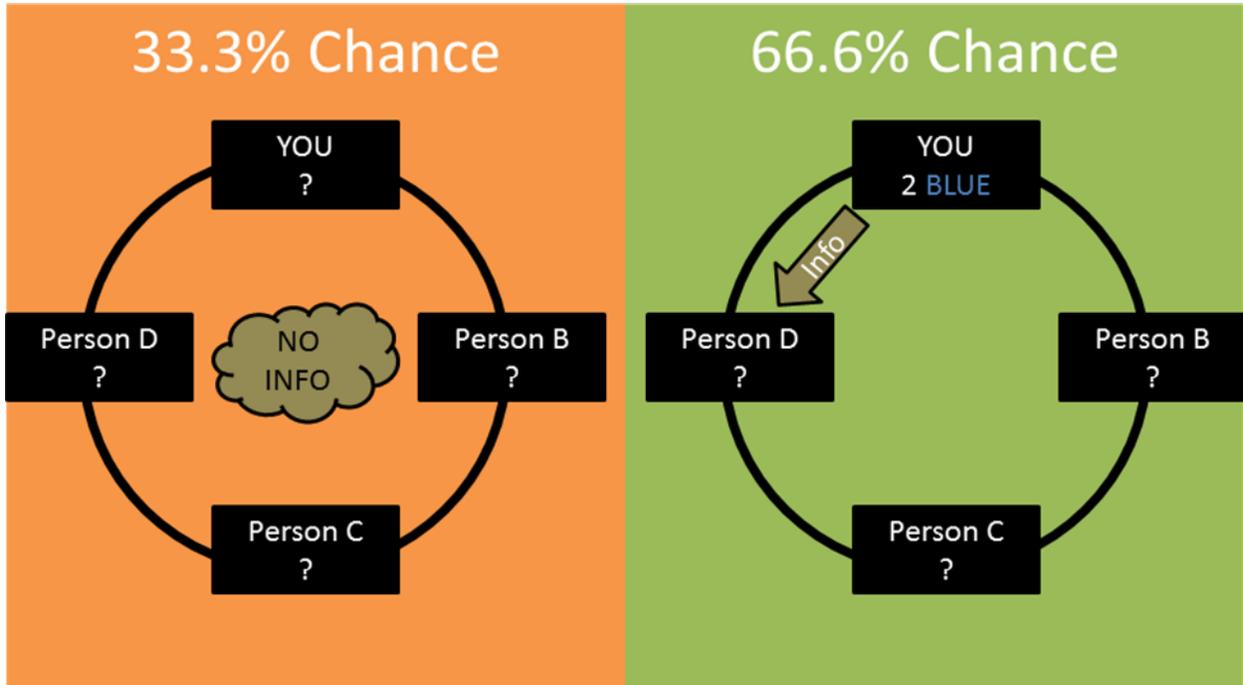
If you paid the Information Fee, then:

- There is a 33.3% chance you will see “no info” as pictured in the orange portion of the diagram below. And...
- There is a 66.6% chance the action of your “right side group member”, Person B, will be revealed as pictured in the green portion of the diagram below.



*Example 7(WHAT OTHERS SEE):* Suppose that you and your other group members make the following Stage 1 investments to the BLUE investment. You are Person A and you invest 2 in BLUE, Person B invests 2, Person C invests 4, and Person D invests 4. That means that you and Person B were the lowest BLUE investors. Person C and D invested the most in BLUE. If the Information Fee was paid by Person D (the person to your left) then

- There is a 33.3% chance Person D will see “no info” as pictured in the orange portion of the diagram. And...
- There is a 66.6% chance that your action will be revealed to Person D as pictured in the green portion of the diagram below.



## Earnings

Your earnings in Stage 2 are calculated as follows:

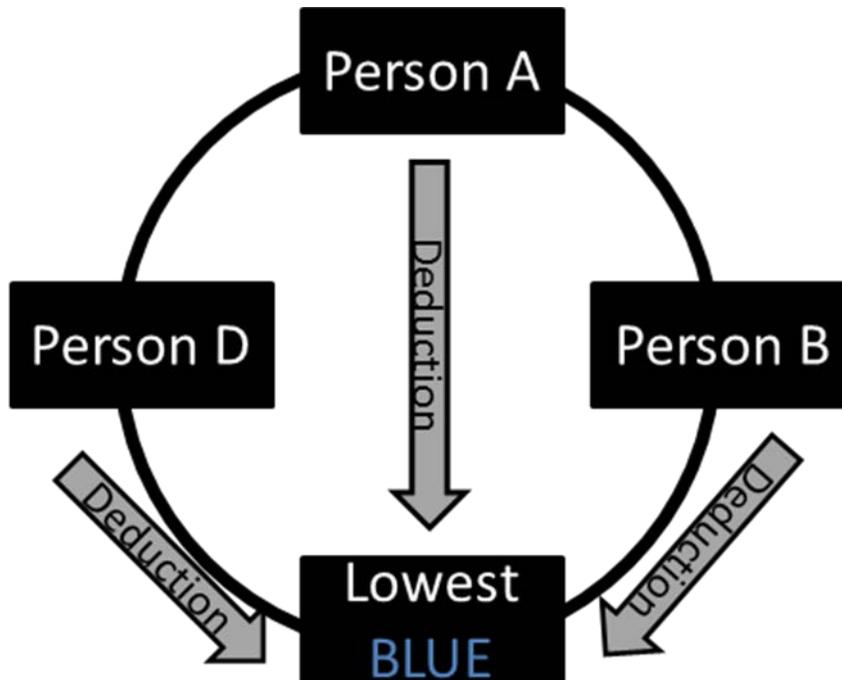
---


$$\text{Stage 2 Earnings} = \text{1st stage Earnings} + \$1 \text{ Stage 2 endowment} - \$1 \text{ if you pay information fee}$$


---

## Stage 3: Deduction Decision

During Stage 3 you and your other group members can **change** or **leave unchanged** the earnings of another group member. We will start with all the group members who had information about them revealed in Stage 2, and then we will find which of these members was the lowest contributor to the **BLUE** investment. That “lowest detected **BLUE** investor” is the person that can have their earnings reduced in Stage 3. Recall that you can only be detected if the information fee was paid to detect your **BLUE** contributions in Stage 2. For example in the picture below if Person C was the “lowest detected **BLUE** investor” then Person A, B and D can reduce that group member’s payoff.



You and your other group members now have to decide how many deduction points to assign to the “lowest detected **BLUE** investor”. If you assign deduction points, there will be a cost for each deduction point that you assign. The more deduction points you assign the higher are your costs. Each deduction point costs you \$1.00.

If you assign 0 deduction points, you do not change the earnings of this group member. If however, you assign 1 deduction point, you reduce that group member’s earnings by \$3.00.

In general all the deduction points purchased by your group will be used to reduce the earnings of the lowest contributor to the **BLUE** investment. However there are two special cases:

**SPECIAL CASE 1:** If two or more people in your group tie as the “lowest detected **BLUE** investor(s)”, then deductions will be split equally across them, and they will all have their payoffs reduced.

**SPECIAL CASE 2:** If the “lowest detected **BLUE** investor” contributed 5 tokens to the **BLUE** investment, then there will not be any deductions this period. All the money you spent on deduction points will be refunded to you.

The process is best explained by a few examples.

## 8-ENDG PeerMonitor-ConcentratedPunishment

*Example 8:* You are Person A and you give 2 tokens in the **BLUE** investment. Suppose that Person B and Person C invest the most in the **BLUE** by each investing 4, and Person D invests the least by investing 1 token in the **BLUE** investment. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$11.00**. The other 3 members of the group would also get a return of **\$11.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:  
 $3 * (\$2.00) + (2 + 4 + 4 + 1) * (\$1.00) = \$17.00$

In Stage 2, suppose you do not pay the \$1.00 information fee. And information about all your group members' actions were not detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:  
 $\$17.00 + \$1.00 \text{ endowment} - \$0.00 = \$18.00$

Last, in Stage 3 you cannot purchase any deduction points, since no one was detected in Stage 2. Your final payoff at the end of all three stages:

$\$18.00 - \$0.00 \text{ for deductions you purchases} - \$0.00 \text{ for deductions assigned to you} = \$18.00$

*Example 9:* You are Person A and you invest 1 token in the **BLUE** investment. Suppose that Person B also invests 1 token in **BLUE**, so that you both invest the least in **BLUE**. Suppose Person C invests the most in the **BLUE** by investing 4, and Person D invests 3 tokens in the **BLUE** investment. This makes a group total of 9 tokens. Your return from the **BLUE** investment would be **\$9.00**. The other 3 members of the group would also get a return of **\$9.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$4 * (\$2.00) + (1 + 1 + 4 + 3) * (\$1.00) = \$17.00$

In Stage 2, suppose you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$\$17.00 + \$1.00 \text{ endowment} - \$1.00 \text{ for purchasing information} = \$17.00$

Last, suppose in Stage 3 Person C purchases 1 deduction point and Person D purchases 2 deduction points. This costs Person C \$1.00 and Person D \$2.00. The total of 3 deduction points will reduce the payoffs of the "lowest detected **BLUE** investor(s)" by a total of \$9.00. You and Person B tied for being the lowest **BLUE** investors so you will each lose \$4.50 (\$9.00 divided equally between you both) as a result of Person C's and D's deduction points. Your final payoff at the end of all three stages:

$\$17.00 - \$0.00 \text{ for deductions you purchases} - \$4.50 \text{ for deductions assigned to you} = \$12.50$

*Example 10:* Suppose that you invest 5 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment, respectively. This makes a group total of 20 tokens. Your return from the **BLUE** investment would be **\$20.00**. The other 3 members of the group would also get a return of **\$20.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$0 * (\$2.00) + (5 + 5 + 5 + 5) * (\$1.00) = \$20.00$

In Stage 2, suppose you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$\$20.00 + \$1.00 \text{ endowment} - \$1.00 \text{ for purchasing information} = \$20.00$

Last, suppose in Stage 3 you purchase 0 deduction points. This costs you \$0.00 and reduces the payoff of the "lowest detected **BLUE** investor" by \$0.00. Your final payoff at the end of all three stages:

$\$20.00 - \$0.00 \text{ for deductions you purchases} - \$0.00 \text{ for deductions assigned to you} = \$20.00$

*Example 11:* You invest 0 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment, respectively. So that you are lowest **BLUE** investor. This makes a group total of 15 tokens. Your return from the **BLUE** investment would be **\$15.00**. The other 3 members of the group would also get a return of **\$15.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$5 * (\$2.00) + (5 + 5 + 5) * (\$1.00) = \$25.00$

In Stage 2, suppose you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$\$25.00 + \$1.00 \text{ endowment} - \$1.00 \text{ for purchasing information} = \$25.00$

Last, in Stage 3 you purchase 0 deduction points. This costs you \$0.00. Suppose that only Person D, purchases 1 deduction point, since you are the lowest **BLUE** investor this will lower your payoff by \$3.00, making your final payoff at the end of all three stages:

$\$25.00 - \$0.00 \text{ for deductions you purchases} - \$3.00 \text{ for deductions assigned to you} = \$22.00$

## Earnings

Your total earnings from the three stages are therefore calculated as follows:

---

Total Earnings at the end of the period = 1st stage Earnings+ \$1 Stage 2 endowment – \$1 if pay information fee- Total of Deductions you receive if you are the “lowest detected **BLUE** investor”– Cost of Deductions you assign

---

Please note that using this formula, your earnings at the end of the period can be negative. If this happens, we will pay you \$0.00 for this period. You cannot owe us money at the end of the session.

**You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.**

**You will be randomly matched with a group of 4 people in the room for the duration of the experiment today.** In other words, Person A, B, C and D will remain constant for the entire experiment.

### Things to Remember

- You will be in a group of 4 people
- Your group will be constant for all 10 periods.
- In Stage 1 you decide how to invest 5 tokens in the **RED** or **BLUE** investment
  - Tokens in the **RED** investment pay \$2 to only you
  - Tokens in the **BLUE** investment pay \$1 to all group members
- In Stage 2 you can pay a \$1 information fee, from your \$1 Stage 2 endowment.
  - If you pay the information fee, then there is a 2 out of 3 chance one would be informed of the “right side group member’s” Stage 1 investment choices
  - If you don’t pay the information fee, then one would not be informed about the “right side group member’s” Stage 1 investment choices
- In Stage 3 you can reduce the earnings of the “lowest detected **BLUE** investor” by assigning deduction points.
  - If there are ties for “lowest detected **BLUE** investor” the deductions will be evenly split among all who tied.
  - You pay \$1.00 for each deduction point you assign.
  - Each deduction point you assign to another group member will reduce their earnings by \$3.00.
  - If the “lowest detected **BLUE** investor” contributed 5 tokens to the **BLUE** investment, then their payoff will not be reduced. All the money you spent on deduction points will be refunded to you.
- If your period earnings are negative we will pay you \$0.00 for this period.
- You will only be paid for one randomly selected period from the 10 you participate in.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

**Thank you.**

**Please wait to be told when you can begin making decisions  
for the next 10 periods.**

# Welcome to the Economics Study!

This experiment is a study of group and individual investment behavior. The instructions are simple. If you follow them carefully and make good investment decisions then you may earn a considerable amount of money. If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question.

The experiment will last about an hour. You may not use your cell phone during the experiment, so please take a moment to turn it off now.

## The Experiment

You have been organized into groups of 4 people. Each group will consist of 4 different randomly assigned persons in each period. There will be 10 **periods** in this session. In each period you will be required to make some decisions and what you earn from each decision will depend on what you and the other 3 people in your group decide.

Once all your decisions in the 10 periods have been made, we will randomly select one of the 10 periods as the **period-that-counts**. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make your decision in each period as if it will be the period-that-counts.

## Three Stage Decision

### Stage 1: Investment Decision

At the beginning of each period you will be randomly assigned to a new group of 4 players.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

#### THE RED INVESTMENT

Each token you invest in the **RED** investment will earn you a return of **\$2.00**.

*Example 1:* Suppose you invest 4 tokens in the **RED** investment, then you would earn **\$8.00** from this investment.

*Example 2:* Suppose you invest 0 tokens in the **RED** investment, then you would earn **\$0.00** from this investment.

#### THE BLUE INVESTMENT

What you earn from the **BLUE** investment will depend on the total number of tokens that you and the other 3 members of your group invest in the **BLUE** investment. The more the group invests in the **BLUE** investment, the more each member of the group earns.

Each token you invest in the **BLUE** investment will earn you and all your group members a return of **\$1.00**.

The process is best explained by a number of examples.

*Example 3:* Suppose that you decided to invest no tokens in the **BLUE** investment but that the 3 other members invest a total of 9 tokens. Then your earnings from the **BLUE** investment would be **\$9.00**. Everyone else in your group would also earn **\$9.00**.

## 2-ENDG GroupMonitor-NeighborPunishment (Unanimous)

*Example 4:* Suppose that you invest 2 tokens in the **BLUE** investment and that the 3 other members of your group invest a total of 9 tokens. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$11.00**. The other 3 members of the group would also get a return of **\$11.00**.

*Example 5:* Suppose that you invest 3 tokens in the **BLUE** investment and the other 3 members invest nothing. Then you, and everyone else in the group, would get a return from the **BLUE** investment of **\$3.00**.

As you can see, every token invested in the **BLUE** investment will earn **\$1.00** for every member of the group, not just the person who invests it there. *It does not matter who invests tokens in the **BLUE** investment. Everyone will get a return from every token invested there—whether they invest tokens in the **BLUE** investment or not.*

### **YOUR TASK**

Your task is to decide how many of your tokens to invest in the **RED** investment and how many to invest in the **BLUE** investment. You are free to invest some of your tokens in the **RED** investment and some in the **BLUE** investment. Alternatively, you can invest all of them into the **RED** investment or all of them into the **BLUE** investment.

## **Stage 1 Earnings**

Once you and the other 3 members of your group have made your decisions, you will receive an **Earnings Statement** for that period.

Your earnings will be computed using the following simple formula:

---

$$1^{\text{st}} \text{ Stage Earnings} = (\$2) * (\text{Your investment to RED}) + (\$1) * (\text{Total group investments to BLUE})$$

---

For example imagine you invested 4 to the **BLUE** investment and the other group members invest 2, 3, and 3 tokens to the **BLUE** investment.

In this example 1<sup>st</sup> stage earnings are computed as follows:

$$1^{\text{st}} \text{ Stage Earnings} = (\$2.00) * (5-4) + (\$1.00) * (4 + 2 + 3 + 3)$$

$$1^{\text{st}} \text{ Stage Earnings} = (\$2.00) * (1) + (\$1.00) * (12)$$

$$1^{\text{st}} \text{ Stage Earnings} = \$2.00 + \$12.00$$

$$1^{\text{st}} \text{ Stage Earnings} = \$14.00$$

**You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.**

## Stage 2: Information Decision

### Information Fee

In Stage 2 of each period you will be given a Stage 2 endowment of \$1. You can use that dollar to purchase the chance to reveal information about another group member. This information may help you to learn about the contribution decisions of your other group members in Stage 1.

**Note that if information is not purchased about another group member, then no one can deduct from that Person's earnings in Stage 3.** We will explain Stage 3 deductions in a minute.

Each person in your group can choose to pledge a dollar toward an Information Fund. Alternatively, each person can choose to pledge \$0.00 toward the Information Fund.

Once all 4 members of your group have entered pledges to the Information Fund, the sum of these pledges will be computed. If your group's pledges total **\$4.00 dollars**, then your group will have purchased a chance to reveal the Stage 1 investment choices of some other group members.

If your group members pledge at least \$4.00 to the Information Fund:

Then the Information Fund has reached its threshold, and you will pay any pledge you made to the Information Fund. Additionally, you may be able to deduct from the earnings of another group member in Stage 3.

If your group members do not pledge at least \$4.00 to the Information Fund:

Then the Information Fund has NOT reached its threshold, and you will be refunded any pledge you made to the Information Fund. Additionally, you will not be able to deduct from the earnings of another group member in Stage 3.

The process is best explained by a few examples.

*Example 6:* Suppose you pledge \$1.00 to the Information Fund. The other players in your group pledge a total of \$3.00 to the Information Fund. The total in the Information Fund is \$4.00, which is equal to the threshold of \$4.00. You will pay the \$1.00 pledge you made to the Information Fund.

*Example 7:* Suppose you pledge \$1.00 to the Information Fund. The other players in your group pledge a total of \$1.00 in the Information Fund. Then total in the Information Fund is \$2.00, which is less than the threshold of \$4.00. You will be refunded the \$1.00 pledge you made to the Information Fund.

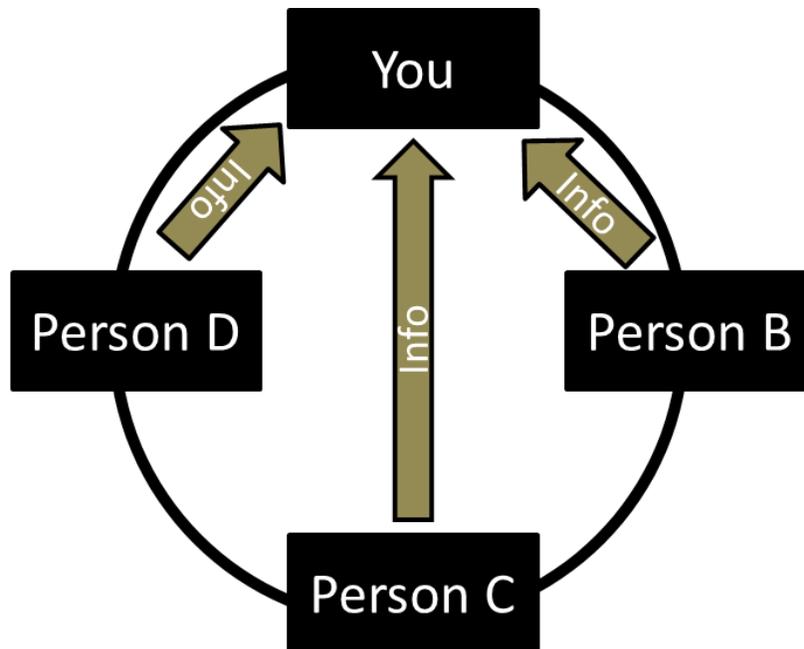
So, you only pay the \$1.00 pledge, if the group reaches the threshold of \$4.00.

## Group Member Information

If your group meets or exceeds the Information Fund threshold, then your group will have purchased a chance to have each person be informed about the investment choices of the other 3 group members as illustrated in the diagram below. This will also give you the opportunity to deduct from another subject's earnings in Stage 3.

*When the Information Fund threshold is met, there is a two out of three chance, or 66.6% chance, the information will be revealed. The computer will roll a three sided die for each group member. If the die lands on 1 or 2 then information about that group member will be revealed. If the die lands on 3, then no information will be revealed. The die will be rolled once for Person A, once for Person B, once for Person C and once for Person D.*

Remember that each period you will be randomly assigned to a new group so that it is very unlikely that "Person A" in the 1st period will be the same as "Person A" in the 2<sup>nd</sup> Period.

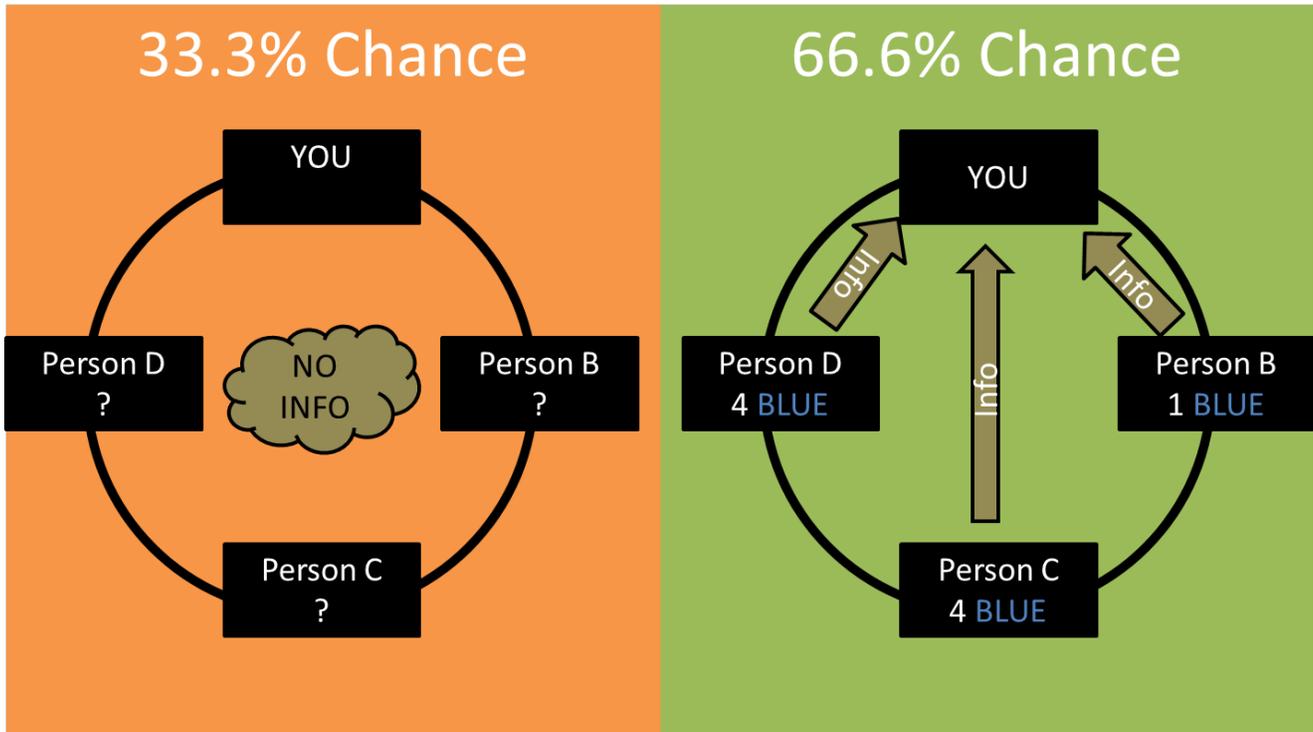


## 5-ENDG GroupMonitor-NeighborPunishment (Unanimous)

The process is best explained by a few examples.

*Example 8 (WHAT YOU SEE):* You and your other group members make the following Stage 1 investments to the **BLUE** investment. You are Person A and you invest 3 in **BLUE**, Person B invests 1, Person C invests 4, and Person D invests 4. That means that Person B was the lowest **BLUE** investor. You were the second lowest, and Person C & Person D invested the most in **BLUE**. If the Information Fund threshold is met, then:

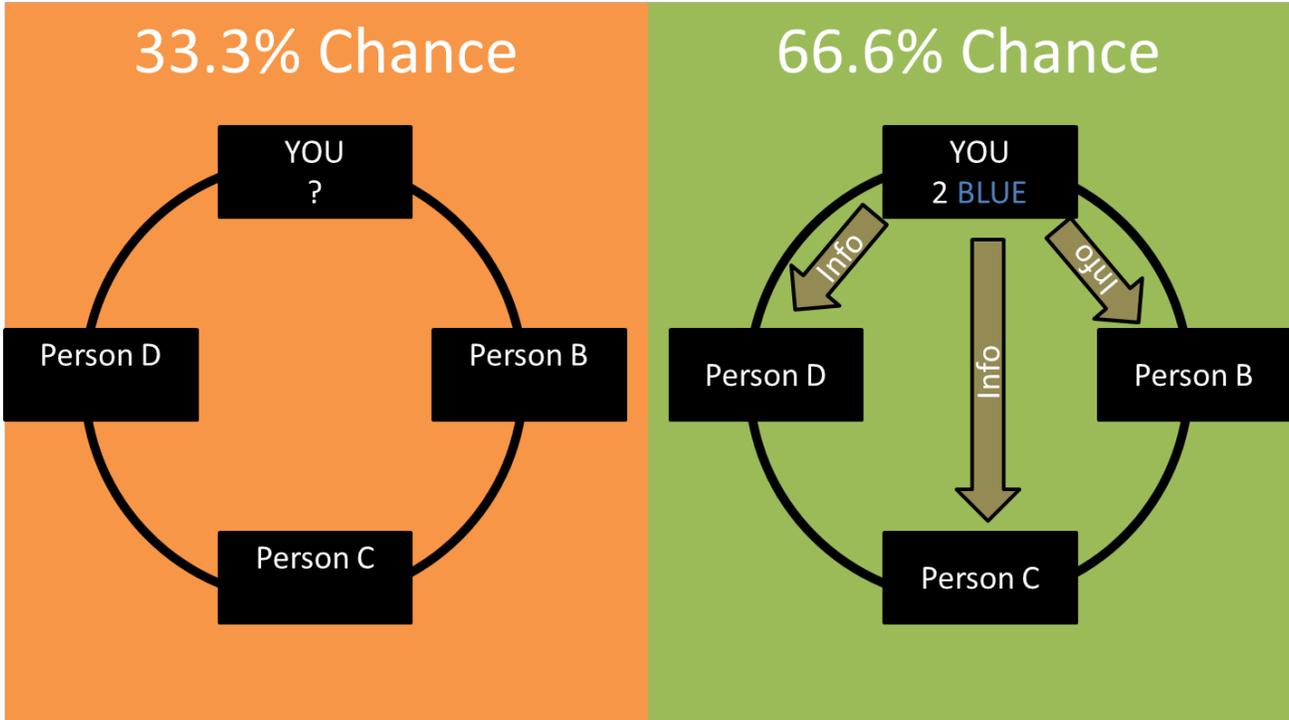
- There is a 33.3% chance you will see “no info” as pictured in the orange portion of the diagram below. And...
- There is a 66.6% chance you will see the contributions of your 3 other group members to the **BLUE** investment as pictured in the green portion of the diagram below.
- That means you may see information for 0, 1, 2 or 3 other group members.



6-ENDG GroupMonitor-NeighborPunishment (Unanimous)

*Example 9 (WHAT OTHERS SEE):* Suppose that you and your other group members make the following Stage 1 investments to the BLUE account. You are Person A and you invest 2, Person B invests 2, Person C invests 4, and Person D invests 4. That means that You and Person B were the lowest BLUE investors. Person C and D invested the most in BLUE. If the Information Fund threshold is met, then

- There is a 33.3% chance your group will see “no info” about your actions as pictured in the orange portion of the diagram below. And...
- There is a 66.6% chance your action will be revealed to your group members as pictured in the green portion of the diagram below.
- That means that either no one in your group will see your contribution OR everyone in your group will see your contribution.



**Earnings**

Your payoff from Stage 2 is computed using the following simple formula.

---

If the group investments to the Information Fund *meets* the threshold of 4 pledges:

$$\text{Stage 2 Earnings} = \text{1st stage Earnings} + \$1 \text{ Stage 2 endowment} - \$1 \text{ if you pay the information fee}$$

If the group investments to the Information Fund are *less than* the threshold of 4 pledges:

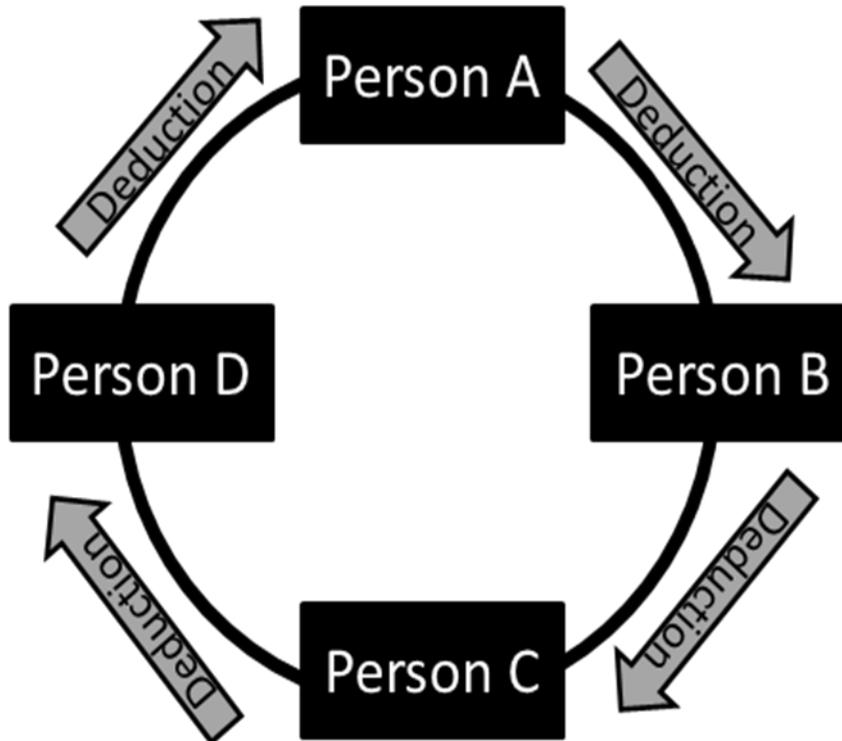
$$\text{Stage 2 Earnings} = \text{1st stage Earnings} + \$1 \text{ Stage 2 endowment}$$


---

## Stage 3: Deduction Decision

During Stage 3 you can **change** or **leave unchanged** the earnings of your “right side group member.” Your “right side group member” is the person to your right in a circle diagram. That means that you can assign deductions as pictured in the following diagram *if you purchased information about this subject’s contributions in Stage 2.*

Your “right side group member” will change every Period. That is because in each period you will be randomly assigned to a new group so that it is very unlikely that “Person A” in the 1st period will be the same as “Person A” in the 2<sup>nd</sup> Period.



In Stage 3 you have to decide how many deduction points to assign to your “right side group member.” Person A can assign deduction points to Person B; Person B to Person C; Person C to Person D; and Person D to Person A. If you do not want to change the earnings of your “right side group member”, you enter 0. If you assign deduction points, there will be a cost for each deduction point that you assign. The more deduction points you assign the higher are your costs. Each deduction point costs you \$1.00.

If you assign 0 deduction points, you do not change the earnings of this group member. If however, you assign 1 deduction point, you reduce that group member’s earnings by \$3.00.

In general all the deduction points you purchase will be used to reduce the earnings of your “right side group member.” However there is one special case.

**SPECIAL CASE:** If your “right side group member” contributed 5 tokens to the **BLUE** investment, then their payoff will not be reduced. All the money you spent on deduction points will be refunded to you.

## 8-ENDG GroupMonitor-NeighborPunishment (Unanimous)

*Example 10:* You are Person A and you invest 2 tokens in the **BLUE** investment. Suppose that Person B and Person C invest the most in the **BLUE** each investing 4, and Person D invests the least by investing 1 token in the **BLUE** investment. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$11.00**. The other 3 members of the group would also get a return of **\$11.00** from the **BLUE** investment. Your initial payoff from Stage 1 is:  
 $3 * (\$2.00) + (2 + 4 + 4 + 1) * (\$1.00) = \$17.00$

In Stage 2, you do not pay the \$1.00 information fee, and the information fund threshold was not met. So information about all your group members' actions was not detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$17.00 + \$1.00 \text{ endowment} - \$0.00 = \$18.00$$

Last, in Stage 3 you cannot purchase any deduction points, since no one was detected in Stage 2. Your final payoff at the end of all three stages:

$$\$18.00 - \$0.00 \text{ for deductions you purchases} - \$0.00 \text{ for deductions assigned to you} = \$18.00$$

*Example 11:* You are Person A and you invest 1 token in the **BLUE** investment. Suppose that Person B also invests 1 token in **BLUE**, so that you both invest the least in **BLUE**. Suppose Person C invest the most in the **BLUE** by investing 4, and Person D invests 3 tokens in the **BLUE** investment. This makes a group total of 9 tokens. Your return from the **BLUE** investment would be **\$9.00**. The other 3 members of the group would also get a return of **\$9.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$4 * (\$2.00) + (1 + 1 + 4 + 3) * (\$1.00) = \$17.00$$

In Stage 2, you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoff at the end of Stage 2 would be:

$$\$17.00 + \$1.00 \text{ endowment} - \$1.00 \text{ for purchasing information} = \$17.00$$

Last, in Stage 3 you purchase 1 deduction point. This costs you \$1.00 and reduces your "right side group member's" payoff by \$3.00. Suppose that Person D, the person to your left, purchases 2 deduction points, this will lower your payoff by \$6.00, making your final payoff at the end of all three stages:

$$\$17.00 - \$1.00 \text{ for deductions you purchased} - \$6.00 \text{ for deductions assigned to you} = \$10.00$$

*Example 12:* You invest 5 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment, respectively. This makes a group total of 20 tokens. Your return from the **BLUE** investment would be **\$20.00**. The other 3 members of the group would also get a return of **\$20.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$0 * (\$2.00) + (5 + 5 + 5 + 5) * (\$1.00) = \$20.00$$

In Stage 2, suppose you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$20.00 + \$1.00 \text{ endowment} - \$1.00 \text{ for purchasing information} = \$20.00$$

Last, in Stage 3 you purchase 0 deduction points. This costs you \$0.00 and reduces your "right side group member's" payoff by \$0.00. Suppose that Person D, the person to your left, purchases 0 deduction points, this will lower your payoff by \$0.00, making your final payoff at the end of all three stages:

$$\$20.00 - \$0.00 \text{ for deductions you purchases} - \$0.00 \text{ for deductions assigned to you} = \$20.00$$

*Example 13:* You invest 0 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment, respectively. So that you are lowest **BLUE** investor. This makes a group total of 15 tokens. Your return from the **BLUE** investment would be **\$15.00**. The other 3 members of the group would also get a return of **\$15.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$5 * (\$2.00) + (5 + 5 + 5) * (\$1.00) = \$25.00$$

In Stage 2, suppose you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$25.00 + \$1.00 - \$1.00 \text{ for purchasing information} = \$25.00$$

Last, in Stage 3 you purchase 0 deduction points. This costs you \$0.00 and reduces your "right side group member's" payoff by \$0.00. Suppose that Person D, the person to your left, purchases 1 deduction points, this will lower your payoff by \$3.00, making your final payoff at the end of all three stages:

$$\$25.00 - \$0.00 \text{ for deductions you purchases} - \$3.00 \text{ for deductions assigned to you} = \$22.00$$

## Earnings

Your total earnings from the three stages are therefore calculated as follows:

---

Total Earnings at the end of the period = 1st stage Earnings+ \$1 Stage 2 endowment – \$1 if paid information fee- Total of Deductions you receive – Cost of Deductions you assign

---

Please note that using this formula, your earnings at the end of the period can be negative. If this happens, we will pay your \$0.00 for this period. You cannot owe us money at the end of the session.

**You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.**

### Your Group

For each decision period you will be in a group of 4 people in the room today. **After each decision period we will randomly rematch you with a new group of 4 people in the room.** As a result, each decision you make will be with a new group of 4 participants. The probability that you will ever be in the same group of 4 participants again is extremely remote.

### Things to Remember

- You will be in a group of 4 people
- The groups will be randomly re-matched every decision period.
- In Stage 1 you decide how to invest 5 tokens in the **RED** or **BLUE** investment
  - Tokens in the **RED** investment pay \$2 to only you
  - Tokens in the **BLUE** investment pay \$1 to all group members
- In Stage 2 you can pledge \$1.00 toward an Information Fund, from your \$1 Stage 2 endowment.
  - If your group investment in the Information Fund meets 4 pledges then you *may* find out the Stage 1 investment choices of your other group members
    - If the Information Fund threshold is met, you will pay any pledges you made to the Information Fund. And when the Information Fun Threshold is met:
      - There is a 66.6% chance you will be informed about the contributions to the **BLUE** investment by your each of your other 3 group members.
  - If the Information Fund threshold is NOT met, then your group will not find out any information about Stage 1 investment choices and you will be refunded any pledges you made to the Information Fund.
- In Stage 3 you can reduce the earnings of the “right side group member” by assigning deduction points.
  - You pay \$1.00 for each deduction point you assign.
  - Each deduction point you assign to another group member will reduce their earnings by \$3.00.
  - If your “right side group member” contributed 5 tokens to the **BLUE** investment, then their payoff will not be reduced. All the money you spent on deduction points will be refunded to you.
- If your period earnings are negative we will pay you \$0.00 for this period.
- You will only be paid for one randomly selected period from the 10 you participate in.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

**Thank you.**

**Please wait to be told when you can begin making decisions  
for the next 10 periods.**

# Welcome to the Economics Study!

This experiment is a study of group and individual investment behavior. The instructions are simple. If you follow them carefully and make good investment decisions then you may earn a considerable amount of money. If you have any questions about the instructions please raise your hand and someone will come and speak with you privately about your question.

The experiment will last about an hour. You may not use your cell phone during the experiment, so please take a moment to turn it off now.

## The Experiment

You have been randomly assigned to group of 4 people. You will be in this same group of 4 people for the duration of the experiment. There will be 10 **periods** in this session. In each period you will be required to make some decisions and what you earn from each decision will depend on what you and the other 3 people in your group decide.

Once all your decisions in the 10 periods have been made, we will randomly select one of the 10 periods as the **period-that-counts**. We will use the period-that-counts to determine your actual earnings. Note, since all periods are equally likely to be chosen, you should make your decision in each period as if it will be the period-that-counts.

## Three Stage Decision

### Stage 1: Investment Decision

You have been assigned to a group of 4 players that will stay constant for the duration of the experiment.

In each period you will be choosing how to divide 5 tokens between two investment opportunities:

#### THE RED INVESTMENT

Each token you invest in the **RED** investment will earn you a return of **\$2.00**.

*Example 1:* Suppose you invest 4 tokens in the **RED** investment, then you would earn **\$8.00** from this investment.

*Example 2:* Suppose you invest 0 tokens in the **RED** investment, then you would earn **\$0.00** from this investment.

#### THE BLUE INVESTMENT

What you earn from the **BLUE** investment will depend on the total number of tokens that you and the other 3 members of your group invest in the **BLUE** investment. The more the group invests in the **BLUE** investment, the more each member of the group earns.

Each token you invest in the **BLUE** investment will earn you and all your group members a return of **\$1.00**.

The process is best explained by a number of examples.

*Example 3:* Suppose that you decided to invest no tokens in the **BLUE** investment but that the 3 other members invest a total of 9 tokens. Then your earnings from the **BLUE** investment would be **\$9.00**. Everyone else in your group would also earn **\$9.00**.

## 2-ENDG PeerMonitor-NeighborPunishment

*Example 4:* Suppose that you invest 2 tokens in the **BLUE** investment and that the 3 other members of your group invest a total of 9 tokens. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$11.00**. The other 3 members of the group would also get a return of **\$11.00**.

*Example 5:* Suppose that you invest 3 tokens in the **BLUE** investment and the other 3 members invest nothing. Then you, and everyone else in the group, would get a return from the **BLUE** investment of **\$3.00**.

As you can see, every token invested in the **BLUE** investment will earn **\$1.00** for every member of the group, not just the person who invests it there. *It does not matter who invests tokens in the **BLUE** investment. Everyone will get a return from every token invested there—whether they invest tokens in the **BLUE** investment or not.*

### YOUR TASK

Your task is to decide how many of your tokens to invest in the **RED** investment and how many to invest in the **BLUE** investment. You are free to invest some of your tokens in the **RED** investment and some in the **BLUE** investment. Alternatively, you can invest all of them into the **RED** investment or all of them into the **BLUE** investment.

## Stage 1 Earnings

Once you and the other 3 members of your group have made your decisions, you will receive an **Earnings Statement** for that period.

Your earnings will be computed using the following simple formula:

---

$$1^{\text{st}} \text{ Stage Earnings} = (\$2) * (\text{Your investment to RED}) + (\$1) * (\text{Total group investments to BLUE})$$

---

For example imagine you invested 4 to the **BLUE** investment, your other group members invest 2, 3, and 3 to the **BLUE** investment.

In this example 1<sup>st</sup> stage earnings are computed as follows:

$$1^{\text{st}} \text{ Stage Earnings} = (\$2.00) * (5-4) + (\$1.00) * (4 + 2 + 3 + 3)$$

$$1^{\text{st}} \text{ Stage Earnings} = (\$2.00) * (1) + (\$1.00) * (12)$$

$$1^{\text{st}} \text{ Stage Earnings} = \$2.00 + \$12.00$$

$$1^{\text{st}} \text{ Stage Earnings} = \$14.00$$

**You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.**

## Stage 2: Information Decision

### Information Fee

In Stage 2 of each period you will be given a Stage 2 endowment of \$1. You can use that dollar to purchase the chance to reveal information about another group member. This information may help you to learn about the contribution decisions of your other group members in Stage 1.

**Note that if information is not purchased about another group member, then no one can deduct from that Person's earnings in Stage 3.** We will explain Stage 3 deductions in a minute.

Each person in your group can choose to pay a \$1.00 Information Fee. Alternatively, each person can choose to not pay the Information Fee. If you pay the Information Fee then you will have purchased a chance to reveal the Stage 1 investment choices of a group member. We will detail which group member in a moment.

If you choose to pay the \$1.00 Information Fee:

Then you will pay \$1.00. Additionally, you may be able to deduct from the earnings of another group member in Stage 3.

If you choose to not pay the \$1.00 Information Fee:

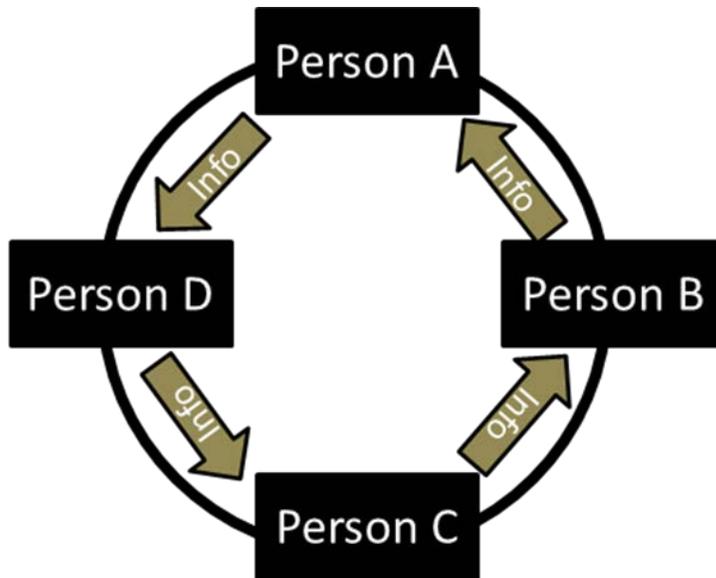
Then you will pay \$0.00. Additionally, you will not be able to deduct from the earnings of another group member in Stage 3.

## Group Member Information

If you pay the Information Fee, then you have purchased a chance to reveal the Stage 1 investment choices of your “right side group member.” Your “right side group member” is the person to the right hand side of you as illustrated in the following diagram. So that Person A can purchase information about Person B; Person B about Person C; Person C about Person D; and Person D about Person A.

*When the Information Fee is paid, there is a two out of three chance, or 66.6% chance, the information will be revealed.* The computer will roll a three sided die for each group member. If the die lands on 1 or 2 then information about that group member will be revealed. If the die lands on 3, then no information will be revealed. The die will be rolled once for Person A, once for Person B, once for Person C and once for Person D.

Remember that you will be in the same group for the duration of the experiment, so that “Person A” will always be the same person.



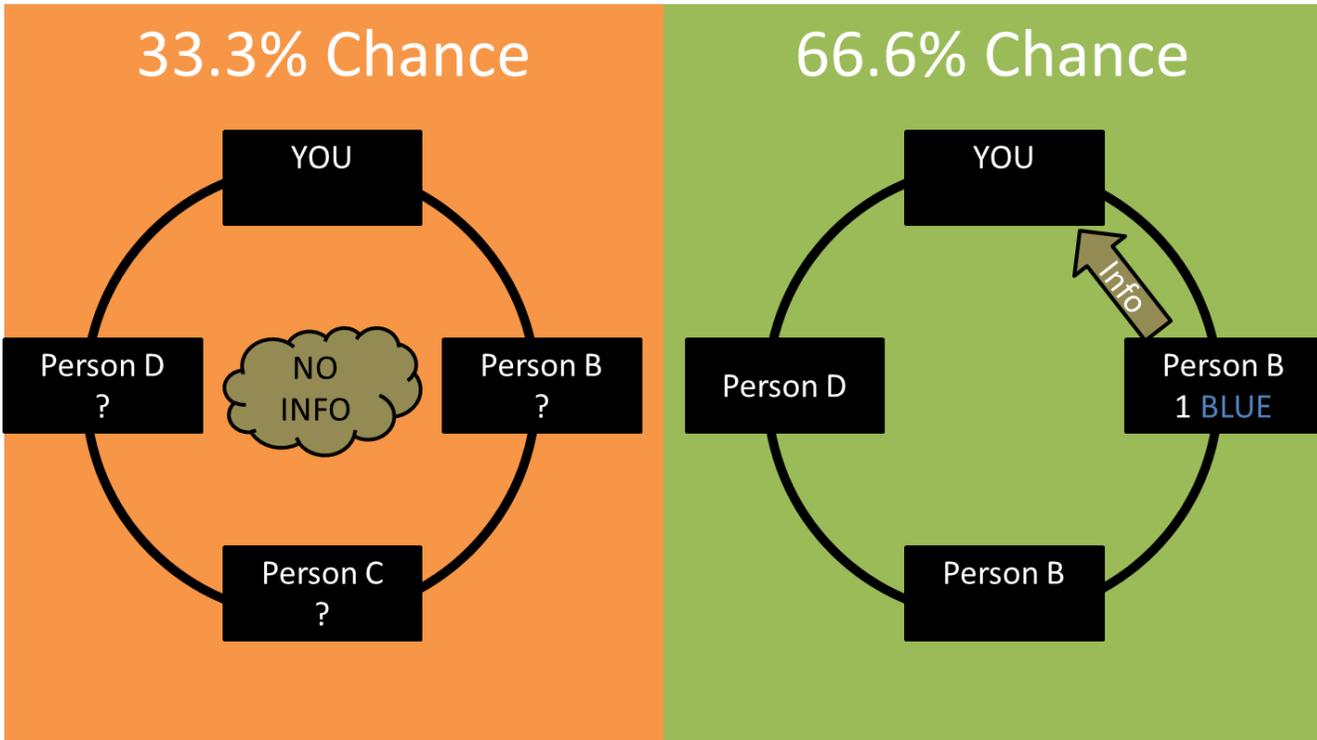
The process is best explained by a few examples.

## 5-ENDG PeerMonitor-NeighborPunishment

*Example 6 (WHAT YOU SEE):* You and your other group members make the following Stage 1 investments to the **BLUE** investment. You are Person A and you invest 3 in **BLUE**, Person B invests 1, Person C invests 4, and Person D invests 4. That means that Person B was the lowest **BLUE** investor. You were the second lowest, and Person C & Person D invested the most in **BLUE**.

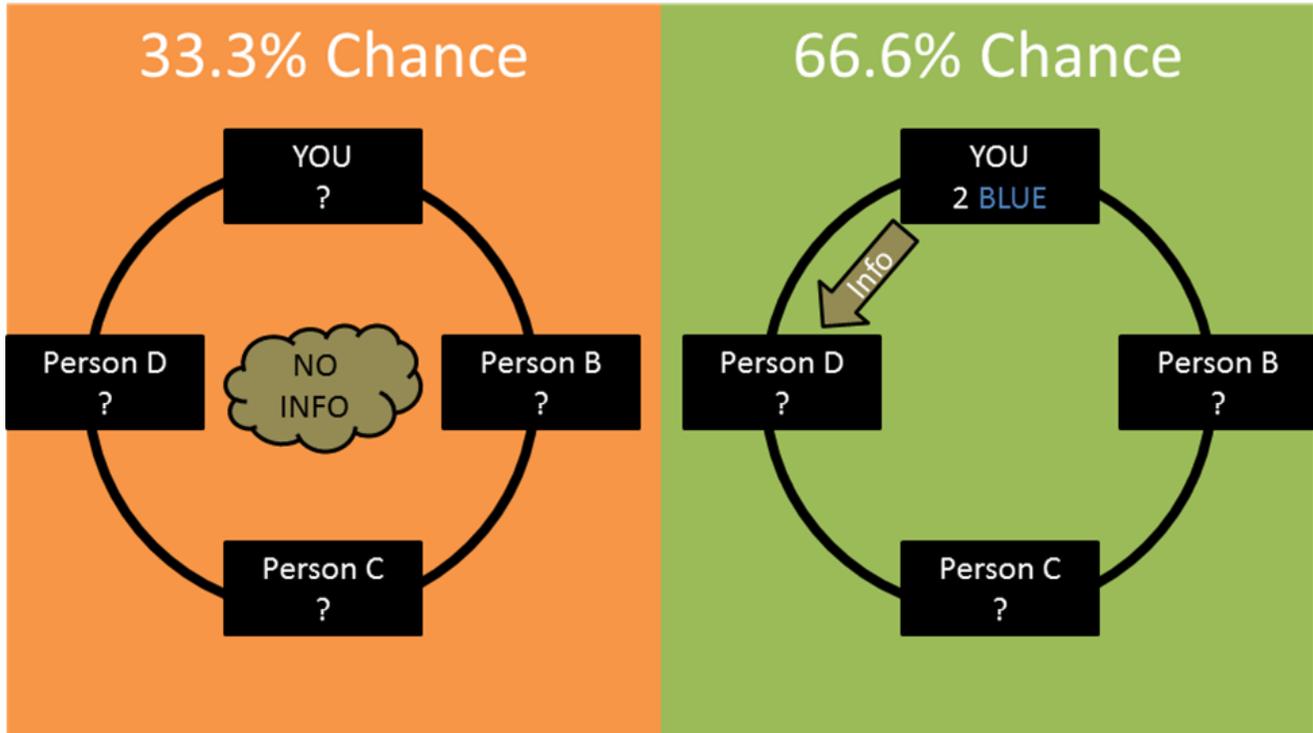
If you paid the Information Fee, then:

- There is a 33.3% chance you will see “no info” as pictured in the orange portion of the diagram below. And...
- There is a 66.6% chance the action of your “right side group member”, Person B, will be revealed as pictured in the green portion of the diagram below.



*Example 7(WHAT OTHERS SEE):* Suppose that you and your other group members make the following Stage 1 investments to the **BLUE** investment. You are Person A and you invest 2 in **BLUE**, Person B invests 2, Person C invests 4, and Person D invests 4. That means that you and Person B were the lowest **BLUE** investors. Person C and D invested the most in **BLUE**. If the Information Fee was paid by Person D (the person to your left) then

- There is a 33.3% chance Person D will see “no info” as pictured in the orange portion of the diagram. And...
- There is a 66.6% chance that your action will be revealed to Person D as pictured in the green portion of the diagram below.



## Earnings

Your earnings in Stage 2 are calculated as follows:

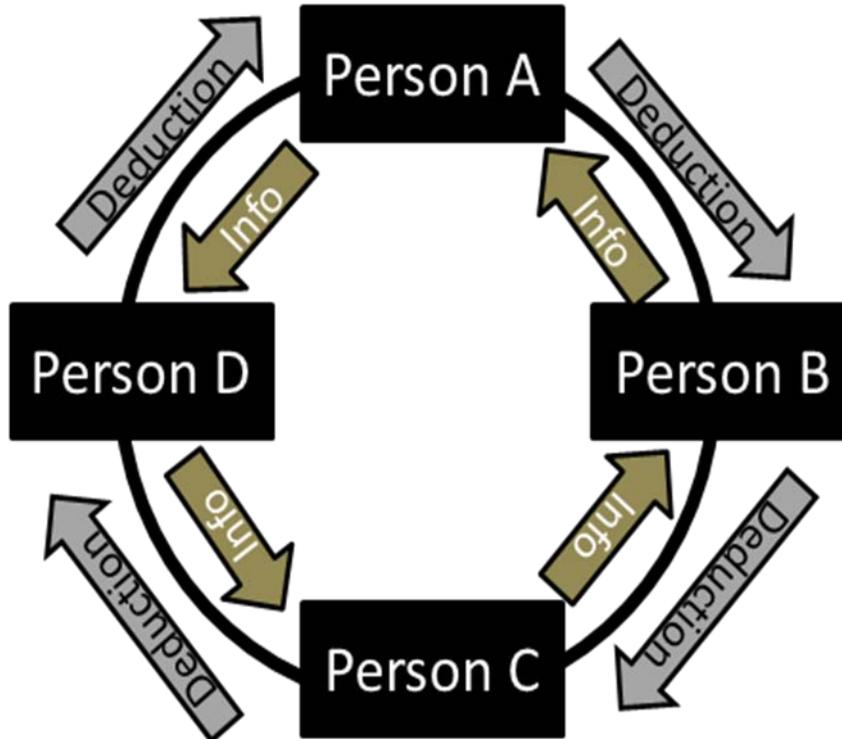
---


$$\text{Stage 2 Earnings} = \text{1st stage Earnings} + \$1 \text{ Stage 2 endowment} - \$1 \text{ if you pay information fee}$$


---

## Stage 3: Deduction Decision

During Stage 3 you can **change** or **leave unchanged** the earnings of your “right side group member.” Your “right side group member” is the person to your right in a circle diagram. That means that you can assign deductions as pictured in the following diagram *if you purchased information about this subject’s contributions in Stage 2*. This is the same group member who you were able to purchase information about in Stage 2.



In Stage 3 you have to decide how many deduction points to assign to your “right side group member.” Person A can assign deduction points to Person B; Person B to Person C; Person C to Person D; and Person D to Person A. If you do not want to change the earnings of your “right side group member”, you enter 0. If you assign deduction points, there will be a cost for each deduction point that you assign. The more deduction points you assign the higher are your costs. Each deduction point costs you \$1.00.

If you assign 0 deduction points, you do not change the earnings of this group member. If however, you assign 1 deduction point, you reduce that group member’s earnings by \$3.00.

In general all the deduction points you purchase will be used to reduce the earnings of your “right side group member.” However there is one special case.

**SPECIAL CASE:** If your “right side group member” contributed 5 tokens to the **BLUE** investment, then their payoff will not be reduced. All the money you spent on deduction points will be refunded to you.

## 8-ENDG PeerMonitor-NeighborPunishment

*Example 8:* You are Person A and you contribute 2 tokens in the **BLUE** investment. Suppose that Person B and Person C invest the most in the **BLUE** each investing 4, and Person D invests the least by investing 1 token in the **BLUE** investment. This makes a group total of 11 tokens. Your return from the **BLUE** investment would be **\$11.00**. The other 3 members of the group would also get a return of **\$11.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$3 * (\$2.00) + (2 + 4 + 4 + 1) * (\$1.00) = \$17.00$$

In Stage 2, you do not pay the \$1.00 information fee. and information about all your group members' actions were not detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$17.00 + \$1.00 \text{ endowment} - \$0.00 = \$18.00$$

Last, in Stage 3 you cannot purchase any deduction points, since no one was detected in Stage 2. Your final payoff at the end of all three stages:

$$\$18.00 - \$0.00 \text{ for deductions you purchases} - \$0.00 \text{ for deductions assigned to you} = \$18.00$$

*Example 9:* You are Person A and you invest 1 token in the **BLUE** investment. Suppose that Person B also invests 1 token in **BLUE**, so that you both invest the least in **BLUE**. Suppose Person C invest the most in the **BLUE** by investing 4, and Person D invests 3 tokens in the **BLUE** investment. This makes a group total of 9 tokens. Your return from the **BLUE** investment would be **\$9.00**. The other 3 members of the group would also get a return of **\$9.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$4 * (\$2.00) + (1 + 1 + 4 + 3) * (\$1.00) = \$17.00$$

In Stage 2, you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$17.00 + \$1.00 \text{ endowment} - \$1.00 \text{ for purchasing information} = \$17.00$$

Last, suppose in Stage 3 you purchase 1 deduction point. This costs you \$1.00 and reduces your "right side group member's" payoff by \$3.00. Suppose that Person D, the person to your left, purchases 2 deductions points, this will lower your payoff by \$6.00, making your final payoff at the end of all three stages:

$$\$17.00 - \$1.00 \text{ for deductions you purchases} - \$6.00 \text{ for deductions assigned to you} = \$10.00$$

*Example 10:* You invest 5 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment respectively. This makes a group total of 20 tokens. Your return from the **BLUE** investment would be **\$20.00**. The other 3 members of the group would also get a return of **\$20.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$0 * (\$2.00) + (5 + 5 + 5 + 5) * (\$1.00) = \$20.00$$

In Stage 2, you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$20.00 + \$1.00 \text{ endowment} - \$1.00 \text{ for purchasing information} = \$20.00$$

Last, suppose in Stage 3 you purchase 0 deduction points. This costs you \$0.00 and reduces your "right side group member's" payoff by \$0.00. Suppose that Person D, the person to your left, purchases 0 deductions points, this will lower your payoff by \$0.00, making your final payoff at the end of all three stages:

$$\$20.00 - \$0.00 \text{ for deductions you purchases} - \$0.00 \text{ for deductions assigned to you} = \$20.00$$

*Example 11:* You invest 0 tokens in the **BLUE** investment. Suppose that the 3 other members of your group invest 5, 5, and 5 tokens in the **BLUE** investment, respectively. So that you are lowest **BLUE** investor. This makes a group total of 15 tokens. Your return from the **BLUE** investment would be **\$15.00**. The other 3 members of the group would also get a return of **\$15.00** from the **BLUE** investment. Your initial payoff from this Stage 1 would be:

$$5 * (\$2.00) + (5 + 5 + 5) * (\$1.00) = \$25.00$$

In Stage 2, suppose you pay the \$1.00 information fee. And suppose information about all your group members' actions were detected in Stage 2. Then your total payoffs at the end of Stage 2 would be:

$$\$25.00 + \$1.00 \text{ endowment} - \$1.00 \text{ for purchasing information} = \$25.00$$

Last, in Stage 3 you purchase 0 deduction points. This costs you \$0.00 and reduces your "right side group member's" payoff by \$0.00. Suppose that Person D, the person to your left, purchases 1 deduction points, this will lower your payoff by \$3.00, making your final payoff at the end of all three stages:

$$\$25.00 - \$0.00 \text{ for deductions you purchases} - \$3.00 \text{ for deductions assigned to you} = \$22.00$$

## Earnings

Your total earnings from the three stages are therefore calculated as follows:

---

Total Earnings at the end of the period = 1st stage Earnings+ \$1 Stage 2 endowment – \$1 if pay information fee- Total of Deductions you receive – Cost of Deductions you assign

---

Please note that using this formula, your earnings at the end of the period can be negative. If this happens, we will pay you \$0.00 for this period. You cannot owe us money at the end of the session.

**You must make your investment decisions without knowing what the others in your group are deciding. Do not discuss your decision with any other participant.**

### Your Group

**You will be randomly matched with a group of 4 people in the room for the duration of the experiment today.** In other words, Person A, B, C and D will remain constant for the entire experiment.

### Things to Remember

- You will be in a group of 4 people
- Your group will be constant for all 10 periods.
- In Stage 1 you decide how to invest 5 tokens in the **RED** or **BLUE** investment
  - Tokens in the **RED** investment pay \$2 to only you
  - Tokens in the **BLUE** investment pay \$1 to all group members
- In Stage 2 you can pay a \$1 information fee, from your \$1 Stage 2 endowment.
  - If you pay the information fee, then there is a 2 out of 3 chance one would be informed of the “right side group member’s” Stage 1 investment choices
  - If you don’t pay the information fee, then one would not be informed about the “right side group member’s” Stage 1 investment choices
- In Stage 3 you can reduce the earnings of the “right side group member” by assigning deduction points.
  - You pay \$1.00 for each deduction point you assign.
  - Each deduction point you assign to another group member will reduce their earnings by \$3.00.
  - If your “right side group member” contributed 5 tokens to the **BLUE** investment, then their payoff will not be reduced. All the money you spent on deduction points will be refunded to you.
- If your period earnings are negative we will pay you \$0.00 for this period.
- You will only be paid for one randomly selected period from the 10 you participate in.
- Please feel free to use the calculator, and scratch paper provided to help you with your calculations.

**Thank you.**

**Please wait to be told when you can begin making decisions  
for the next 10 periods.**

# SCREENSHOTS

# ENDG GroupMonitor-ConcentratedPunish (Unanimous) 1

Period 1 of 1	Remaining time [sec]: 59
------------------	--------------------------

Stage 1: Investment Decision  
You are in a new group of 4 people.  
You have 5.0 tokens for your Stage 1 endowment.

Tokens in the **RED** investment earn \$2.00 for you, and \$0.00 for all your other group members.

Tokens in the **BLUE** investment earn \$1.00 for you and for **all your other group members**.

Use the box to decide how many of your 5.0 tokens will be invested in the **RED** investment.

Use the box to decide how many of your 5.0 tokens will be invested in the **BLUE** investment.

**OK**

## ENDG GroupMonitor-ConcentratedPunish (Unanimous) 2

Period

1 of 1

Remaining time [sec]: 57

Stage 1 Summary:

RED investment:	3
BLUE investment:	2

OK

### ENDG GroupMonitor-ConcentratedPunish (Unanimous) 3

Period 1 of 1	Remaining time [sec]: 60
<p>Stage 2: Information Decision</p> <p>If the information fund reaches its threshold of 4 dollars, then there will be a 66.7 chance out of 100 that the information will be revealed about each of your 3 other group members.</p> <p>Use the box to make either a \$0 or \$1 payment toward the Information Fund.</p> <input type="text"/>	
<input type="button" value="OK"/>	

# ENDG GroupMonitor-ConcentratedPunish (Unanimous) 4

Period

1 of 1

Remaining time [sec]: 52

Your group's investments to the Information Fund met the threshold. The information that was revealed is in the table below.

Person	RED investment:	BLUE investment:	Stage 2 Payoff
You	3	2	16.00
Person B	1	4	12.00
Person C	4	1	18.00
Person D	1	4	12.00

OK

# ENDG GroupMonitor-ConcentratedPunish (Unanimous) 5

Period		Remaining time [sec]: 50	
1 of 1			
	Person	RED investment:	BLUE investment:
			Stage 2 Payoff
	You	3	2
			16.00
	Person B	1	4
			12.00
Lowest detected BLUE	Person C	4	1
			18.00
	Person D	1	4
			12.00

Stage 3: Deduction Decision

You and your other group members can assign a deduction of \$3.00 to the lowest detected BLUE investor by paying \$1.00 to assign 1 deduction point to that player. You may assign any amount of deduction points you can afford to another player (e.g. 0, 1, 2, 3...).

You can afford to purchase this many deduction points: 16

To assign no deduction points enter 0. Enter your deduction points in the box:

# ENDG GroupMonitor-ConcentratedPunish (Unanimous) 6

Period

1 of 1

Remaining time [sec]: 58

Stage 3: Deduction Summary

Your Stage 1 Payoff:	17
Your Stage 2 Payoff:	16
You assigned this many deduction points:	2
You recieved this size deduction (in dollars):	0
Your Final Payoff For This Period are:	14

OK



# ENDG PeerMonitor-ConcentratedPunish 1

Period

1 of 1

Remaining time [sec]: 54

Stage 1: Investment Decision  
You are in a new group of 4 people.  
You have 5.0 tokens for your Stage 1 endowment.

Tokens in the RED investment earn \$2.00 for you, and \$0.00 for all your other group members.  
Tokens in the BLUE investment earn \$1.00 for you and for **all your other group members**.

Use the box to decide how many of your 5.0 tokens will be invested in the RED investment.

Use the box to decide how many of your 5.0 tokens will be invested in the BLUE investment.

OK

## ENDG PeerMonitor-ConcentratedPunish 2

Period

1 of 1

Remaining time [sec]: 56

Stage 1 Summary:

RED investment:	3
BLUE investment:	2

OK

### ENDG PeerMonitor-ConcentratedPunish 3

Period 1 of 1	Remaining time [sec]: 60
<p>Stage 2: Information Decision</p> <p>If you pay the information fee, then there will be a 66.7 chance out of 100 that the information will be revealed to you about your right side group member.</p> <p>Use the box to make either a \$0 or \$1 payment toward the Information Fee. <input type="text"/></p> <p>OK</p>	

# ENDG PeerMonitor-ConcentratedPunish 4

Period Remaining time [sec]: 50

1 of 1

You paid the Information Fee. The information that was revealed is in the table below.

Person	RED investment:	BLUE investment:	Stage 2 Payoff
You	3	2	16.00
Person B	?	?	?
Person C	?	?	?
Person D	4	1	18.00

OK

# ENDG PeerMonitor-ConcentratedPunish 5A

Period		1 of 1		Remaining time [sec]: 46																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Person</th> <th style="width: 20%;">RED investment:</th> <th style="width: 20%;">BLUE investment:</th> <th style="width: 45%;">Stage 2 Payoff</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">You</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">16.00</td> </tr> <tr> <td style="text-align: center;">Person B</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> <tr> <td style="text-align: center;">Person C</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> <tr> <td style="text-align: center;">Lowest detected BLUE</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">18.00</td> </tr> </tbody> </table>					Person	RED investment:	BLUE investment:	Stage 2 Payoff	You	3	2	16.00	Person B	?	?	?	Person C	?	?	?	Lowest detected BLUE	4	1	18.00
Person	RED investment:	BLUE investment:	Stage 2 Payoff																					
You	3	2	16.00																					
Person B	?	?	?																					
Person C	?	?	?																					
Lowest detected BLUE	4	1	18.00																					
<p>Stage 3: Deduction Decision</p> <p>You and your other group members can assign a deduction of \$3.00 to the lowest detected BLUE investor by paying \$1.00 to assign 1 deduction point to that player. You may assign any amount of deduction points you can afford to another player (e.g. 0, 1, 2, 3...).</p> <p>You can afford to purchase this many deduction points: 16</p> <p>To assign no deduction points enter 0. Enter your deduction points in the box: <input style="width: 50px;" type="text"/></p>																								
<input style="background-color: red; color: white; padding: 5px 15px;" type="button" value="OK"/>																								

# ENDG PeerMonitor-ConcentratedPunish 5B

Period		1 of 1		Remaining time [sec]: 22																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Person</th> <th style="width: 20%;">RED investment:</th> <th style="width: 20%;">BLUE investment:</th> <th style="width: 45%;">Stage 2 Payoff</th> </tr> </thead> <tbody> <tr> <td>Person A</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> <tr> <td>Person B</td> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">12.00</td> </tr> <tr> <td>You</td> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">12.00</td> </tr> <tr> <td>Lowest detected BLUE</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> </tbody> </table>					Person	RED investment:	BLUE investment:	Stage 2 Payoff	Person A	?	?	?	Person B	1	4	12.00	You	1	4	12.00	Lowest detected BLUE	?	?	?
Person	RED investment:	BLUE investment:	Stage 2 Payoff																					
Person A	?	?	?																					
Person B	1	4	12.00																					
You	1	4	12.00																					
Lowest detected BLUE	?	?	?																					
<p>Stage 3: Deduction Decision</p> <p>You and your other group members can assign a deduction of \$3.00 to the lowest detected BLUE investor by paying \$1.00 to assign 1 deduction point to that player. You may assign any amount of deduction points you can afford to another player (e.g. 0, 1, 2, 3...).</p> <p>You can afford to purchase this many deduction points: 12</p> <p>To assign no deduction points enter 0. Enter your deduction points in the box: <input style="width: 50px; height: 20px; border: 1px solid gray;" type="text"/></p>																								
<input style="background-color: red; color: white; padding: 5px 15px; border: none;" type="button" value="OK"/>																								

# ENDG PeerMonitor-ConcentratedPunish 6

Period

1 of 1

Remaining time [sec]: 56

Stage 3: Deduction Summary

Your Stage 1 Payoff:	17
Your Stage 2 Payoff:	16
You assigned this many deduction points:	1
You recieved this size deduction (in dollars):	0
Your Final Payoff For This Period are:	15

OK



# ENDG GroupMonitor-NeighborPunish (Unanimous) 1

Period  1 of 1	Remaining time [sec]: 49
----------------------	--------------------------

Stage 1: Investment Decision  
You are in a new group of 4 people.  
You have 5.0 tokens for your Stage 1 endowment.

Tokens in the **RED** investment earn \$2.00 for you, and \$0.00 for all your other group members.

Tokens in the **BLUE** investment earn \$1.00 for you and for **all your other group members**.

Use the box to decide how many of your 5.0 tokens will be invested in the **RED** investment.

Use the box to decide how many of your 5.0 tokens will be invested in the **BLUE** investment.

**OK**

## ENDG GroupMonitor-NeighborPunish (Unanimous) 2

Period

1 of 1

Remaining time [sec]: 56

Stage 1 Summary:

RED investment:	3
BLUE investment:	2

OK

### ENDG GroupMonitor-NeighborPunish (Unanimous) 3

Period 1 of 1	Remaining time [sec]: 59
<p>Stage 2: Information Decision</p> <p>If the information fund reaches its threshold of 4 dollars, then there will be a 66.7 chance out of 100 that the information will be revealed about each of your 3 other group members.</p> <p>Use the box to make either a \$0 or \$1 payment toward the Information Fund.</p> <input type="text"/>	
<input type="button" value="OK"/>	

# ENDG GroupMonitor-NeighborPunish (Unanimous) 4

Period

1 of 1

Remaining time [sec]: 56

Your group's investments to the Information Fund met the threshold. The information that was revealed is in the table below.

Person	RED investment:	BLUE investment:	Stage 2 Payoff
You	3	2	16.00
Person B	4	1	18.00
Person C	1	4	12.00
Person D	1	4	12.00

OK

# ENDG GroupMonitor-NeighborPunish (Unanimous) 5

Period		Remaining time [sec]: 56	
1 of 1			
	Person	RED investment:	BLUE investment:
			Stage 2 Payoff
	You	3	2
	Person B	4	1
	Person C	1	4
Right Side Group Member	Person D	1	4

Stage 3: Deduction Decision

You can assign a deduction of \$3.00 to your right side group member by paying \$1.00 to assign 1 deduction point to that player. You may assign any amount of deduction points you can afford to another player (e.g. 0, 1, 2, 3...).

You can afford to purchase this many deduction points: 16

To assign no deduction points enter 0. Enter your deduction points in the box:

# ENDG GroupMonitor-NeighborPunish (Unanimous) 6

Period

1 of 1

Remaining time [sec]: 58

Stage 3: Deduction Summary

Your Stage 1 Payoff:	17
Your Stage 2 Payoff:	16
You assigned this many deduction points:	1
You recieved this size deduction (in dollars):	0
Your Final Payoff For This Period are:	15

OK

# ENDG PeerMonitor-NeighborPunish 1

Period  1 of 1	Remaining time [sec]: 59
----------------------	--------------------------

Stage 1: Investment Decision  
You are in a new group of 4 people.  
You have 5.0 tokens for your Stage 1 endowment.

Tokens in the **RED** investment earn \$2.00 for you, and \$0.00 for all your other group members.

Tokens in the **BLUE** investment earn \$1.00 for you and for **all your other group members**.

Use the box to decide how many of your 5.0 tokens will be invested in the **RED** investment.

Use the box to decide how many of your 5.0 tokens will be invested in the **BLUE** investment.

**OK**

## ENDG PeerMonitor-NeighborPunish 2

Period

1 of 1

Remaining time [sec]: 56

Stage 1 Summary:

RED investment:	3
BLUE investment:	2

OK

### ENDG PeerMonitor-NeighborPunish 3

Period 1 of 1	Remaining time [sec]: 60
<p>Stage 2: Information Decision</p> <p>If you pay the information fee, then there will be a 66.7 chance out of 100 that the information will be revealed to you about your right side group member.</p> <p>Use the box to make either a \$0 or \$1 payment toward the Information Fee. <input type="text"/></p> <p>OK</p>	

# ENDG PeerMonitor-NeighborPunish 4

Period Remaining time [sec]: 46

1 of 1

You paid the Information Fee. The information that was revealed is in the table below.

Person	RED investment:	BLUE investment:	Stage 2 Payoff
You	3	2	16.00
Person B	?	?	?
Person C	?	?	?
Person D	1	4	12.00

OK

# ENDG PeerMonitor-NeighborPunish 5

Period		Remaining time [sec]: 57	
1 of 1			
	Person	RED investment:	BLUE investment:
			Stage 2 Payoff
	You	3	2
	Person B	?	?
	Person C	?	?
Right Side Group Member	Person D	1	4
<p>Stage 3: Deduction Decision</p> <p>You can assign a deduction of \$3.00 to your right side group member by paying \$1.00 to assign 1 deduction point to that player. You may assign any amount of deduction points you can afford to another player (e.g. 0, 1, 2, 3...).</p> <p>You can afford to purchase this many deduction points: 16</p> <p>To assign no deduction points enter 0. Enter your deduction points in the box: <input style="width: 40px; height: 15px;" type="text"/></p>			
<input style="background-color: red; color: white; padding: 5px 15px;" type="button" value="OK"/>			

# ENDG PeerMonitor-NeighborPunish 6

Period

1 of 1

Remaining time [sec]: 53

Stage 3: Deduction Summary

Your Stage 1 Payoff:	17
Your Stage 2 Payoff:	16
You assigned this many deduction points:	1
You recieved this size deduction (in dollars):	6
Your Final Payoff For This Period are:	9

OK