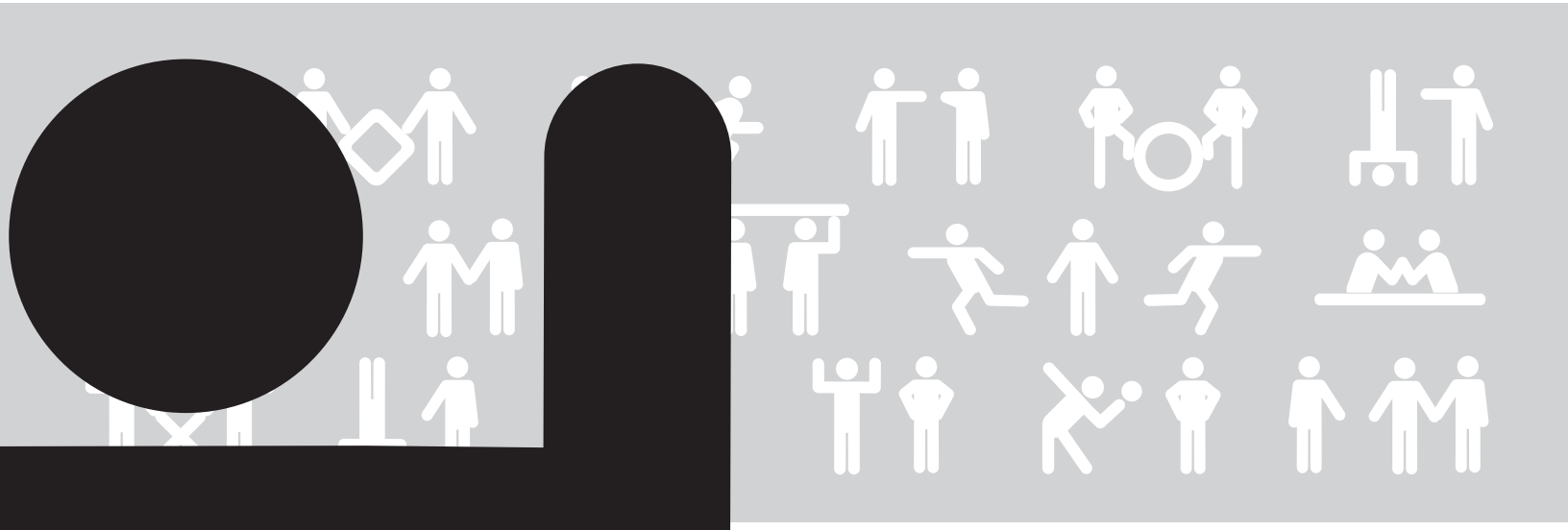

SCIENCE OF SHARING : ACTIVITY 2

THE INVESTMENT GAME

This is a 15–30 minute card game for a small group or groups of players, played in rounds. Players in a group are staked with the same amount of "money". Then, in each round, players decide how much of their own money they wish to invest in a communal pot. Money in the pot is doubled and redistributed equally at the end of each round. That means all players benefit from the pot—even those who chose not to contribute. Players must therefore consider how they make decisions about contributing to the common good, how they define "fairness," and how communities function when members have different views about shared resources. Like Activity 7: Freeloader, this game is based on the *free rider* problem studied by social scientists.

This game is played in one or more small groups. If you have a large class, divide them into groups of no more than five people each.

PROCEDURE

MATERIALS

- Each player will need a set of three cards, which you can make out of index cards. Each set consists of one card noting $5, one noting $2, and one noting $0. Players will use these cards to invest some of their "money" in a communal pot. Each player in a group needs cards of a unique color, so if you play with one or more groups of three, you'll need three different colors of cards; if you play with one or more groups of five, you'll need five different card colors. (Five is the maximum recommended size for groups.)

- Chairs for all players, and enough tables for each group to have its own.

- A white/blackboard for keeping score.

PREPARATION

Determine how many groups of players you will have and how you will form groups. Groups can be formed by random drawing, alphabetically, or by any other means you prefer, although ideally groups will create new social relationships.

Once you know how many groups you will have, arrange tables and chairs so that each group sits at its own table.

Each group will require a facilitator to keep score and deal cards. If one facilitator is running several groups at once, she will need to move from group to group in turn on each round.

Copy the scoreboard provided at the end of this activity (page 7) onto a white/blackboard, and place it where all players can see it.

PROCEDURE (CONT'D)

INSTRUCTIONS

These instructions assume you are playing with a single group.

Ask the group to take their seats around the table.

Give each player in the group one set of cards—one $5, one $2, and one $0. Each player should have a set of a unique color.

Tell all players:

> "This is called The Investment Game. It's a game about how you, as individuals and as a group, manage your money. You're all starting with the same amount of money in your account: $10 each. You have $7 to invest in each round.
>
> The game is played in a series of rounds. In a round, all each of you needs to decide is: How much of my own money do I want to invest in the pot? The pot is a community resource: At the end of each round, the money in the pot will be doubled and then given back to everyone in the group in equal shares—both those who contributed and those who didn't. I'll keep track of how much people invested and how much they each have in their "bank accounts" as the game proceeds.
>
> We're going to play five rounds. Does anyone have any questions?"

When everyone is ready, begin the first round by asking each player to make their "investments" in the communal pot by placing one or more of their cards face up in front of them.

PROCEDURE (CONT'D)

INSTRUCTIONS (CONT'D)

When all players have contributed at least one card, write down the amount each player invested in the pot on the scoreboard under ROUND 1/invest (-). Then:

1. calculate the total amount in the pot
2. multiply the total by two
3. divide the result in step 2 by the number of players in the group

Now, add the resulting number to all players' scores under ROUND 1/share (+). (Remember, everyone gets the same share of the pot, whether they contributed or not.) Then calculate each player's new total and write it under ROUND 1/new balance. Ask players if they have questions about your calculations.

Read the results of ROUND 1 aloud: how much each player invested, how much everyone got from the pot, and how much each player now has. Encourage discussion about how people made their investment choices and how they feel about any differences in their "bank accounts."

Return all players' cards to them and proceed with the next round using the instructions above. As the game progresses, players' investment choices should lead to an increasing divergence in their balances.

DISCUSSSION QUESTIONS

- What do you think this game is about? Did the game remind you of any events or real-world situations? (Think about community resources such as public parks, beaches, or public broadcasting systems.) Is there always a conflict between looking out for oneself and acting in the community interest?
- How does the game relate to taxes? What happens if nobody invests in a public good? (Use this question to lead into a discussion of the Tragedy of the Commons.)
- Have you heard of the concept of "freeloading" or "free riding?" (Write down and discuss the definitions suggested.)
- In playing the game, at what point did you realize that some players were faring better than others? What feelings did this create? How did you respond? Was there retaliation against freeloaders?

VARIATIONS

- Explore the effects of anonymity by making players' investments less salient. Ask players to give their cards to you instead of putting them face-up on the table, and eliminate the "invest (-)" category on the scoreboard. All players will see are shares players receive from the pot and each player's updated bank balance. (You could take this idea further by separating players so that they cannot see one another, or even by ensuring that players do not actually know who they are playing with.) Does this make freeloading more likely? Alternatively, you could require players to state their choices aloud.
- To pursue this idea further, you might play the game first in its original form, discuss the results, then change the game to make investment choices more or less salient. How might that change behavior?
- Instead of specifying five rounds, leave the game open-ended, and ask players to discuss whether to continue at the end of each round. How do players decide when to stop?
- If you have enough players to form two groups, separate them and set up the game identically for each, but give each group a different title for the game, one emphasizing communal behavior (e.g., The Society Game, Invest for All), the other focusing on individual goals (e.g., Invest to Win). How does this *framing* manipulation affect players' decisions? What other examples of framing effects can the class come up with?
- Use larger amounts: Begin the game with each player having $100,000, and instead of $5, $2, and $0 cards, give players cards with values like $10,000, $2000, and $0. How does this change the way players make their choices?

RESOURCES

Rock, Paper, Scissors: Game Theory in Everyday Life (2008)
Len Fisher's easy-to-read guide outlines the core concepts of game theory and how they apply to many everyday situations.

Moral Tribes: Emotion, Reason, and the Gap Between Us and Them (2013)
In this thought-provoking book, Harvard psychologist Joshua Greene reviews research on how people do or don't work together to solve common problems and discusses the implications for human societies.

Free Rider Problem
en.wikipedia.org/wiki/Free_rider_problem
A Wikipedia discussion of the free rider problem.

The Tragedy of the Commons
garretthardinsociety.org/articles/art_tragedy_of_the_commons.html
Garrett Hardin's 1968 paper describing situations in which joint management of shared resources can lead to tragedy for all.

Framing Effect (Psychology)
en.wikipedia.org/wiki/Framing_effect_%28psychology%29
A description of research on framing effects.

This material is based upon work supported by the National Science Foundation under Grant No. 1114781. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

SCOREBOARD

	START	BLUE $10	RED $10	GREEN $10	YELLOW $10
ROUND 1	Invest (-)				
	Share (+)				
	New Balance				
ROUND 2	Invest (-)				
	Share (+)				
	New Balance				
ROUND 3	Invest (-)				
	Share (+)				
	New Balance				
ROUND 4	Invest (-)				
	Share (+)				
	New Balance				
ROUND 5	Invest (-)				
	Share (+)				
	New Balance				