



POWELL CENTER FOR
ECONOMIC LITERACY

Lesson Plan

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An Incentive Activity

Time Required

The core portion of the lesson will take approximately **15 minutes**. Prior to this core time period, you will need four short periods of time for activities that will yield the data used to reach closure in the lesson.

Grade Level and Subject

Grades 3 – 5; Math

Keystone Principles

[Principle #5](#) – Incentives Produce “Predictable” Responses

Voluntary National Content Standards In Economics

[Standard #4 – Role of Incentives](#)

Economic Concepts

Incentive - *Any reward or benefit, such as money, advantage or good feeling, that motivates people to do something.*

Predictable – *Something which can be foretold.*

Reward – *Something that is given in return for some action or attainment.*

Overview

This short lesson focuses on the economic principle that people respond predictably to rewards and incentives. It illustrates the principle by reference to the motivation and actions of the students themselves. The reward used in this particular lesson is a small candy treat. For those objecting to the use of candy in the classroom, we have a similar lesson using quiz grades as the incentive (“It’s All About the Incentives”).



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Objectives

- Students assess their own responses to an activity in which the teacher uses incentives to encourage class participation.
- Students use mathematical constructs to analyze the effects of incentives.
- Through repetition, students will understand that predictability is a necessary component in the framing of incentives.

Materials and Handouts

- Two tally sheets (Handouts #1 and #2)
- Calculators, if desired
- Something to serve as an incentive – for example:
 - A bag or two of an easily distributed, wrapped candy or other reward
 - Copy-ready coupon sheet (Handout #3)
 - List of Non-monetary Rewards (Handout #4)

Teaching Activity

Preliminary Activities

1. Briefly explain the main economic principle in this lesson: *Incentives produce “predictable” responses.* One important implication of this principle is that it is often possible to use incentives – subsidies or rewards – to get more of things that we want more of, and to use taxes or penalties to get less of things that we want less of. For example: high interest rates act as an incentive, encouraging people to save more money in interest-bearing accounts. High taxes on cigarettes work the other way, discouraging people from buying them. In each case, the results are predictable.
 - a. You can illustrate the principle quite simply by using two different question-and-answer formats with your students. In the first, review a lesson without offering any incentive to encourage the students to be attentive and participate. In the second, provide some kind of incentive to encourage attention and participation. If the incentive has value to the students, they most likely will become more engaged, volunteering to answer more questions and in general taking better advantage of the review session. After collecting sufficient data from these two trials, ask your students whether they noticed any pattern or trend. Discuss their responses. The discussion may lead the students to identify and explain incentives that motivate them in their everyday lives.
 - b. For the second review session in which you use an incentive, consider several possibilities, as appropriate for your class. A bag of small candies or other rewards is probably the simplest option. If you prefer, use coupons that can



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- be redeemed for a variety of non-monetary rewards (Handouts #3 and #4). You could even establish an exchange ratio of coupons to quizzes and tests, with a specified number of coupons redeemable for a one-point credit on a quiz or test. One caveat: if you overuse an extrinsic reward, you could run the risk of discouraging student participation when no reward is offered.
2. Prior to the lesson, establish a means of collecting data from your class.
 - a. Pick two students and train them to count and record on the tally sheet the number of students raising their hands to answer each of the questions (Handout #1). One student will keep a tally of the responses given when *no* reward is offered; the other student will record the response given when a reward *is* offered. Stress the importance of keeping the tallies separate. Do not tell the students why the data is being collected.
 - b. On four consecutive days, conduct a class review in any subject area by asking ten questions, half with and half without incentives. Main eye contact with your collectors throughout the class to ensure they are doing their jobs.
 3. The lesson itself is given during math class.
 - a. Write *People respond predictably to rewards and incentives* on the board.
 - b. Define *rewards* and *incentives* by explaining that the rewards you have been giving out during the previous two review sessions in your class are incentives for answering questions. Be sure your students also have a clear understanding of the terms “respond” and “predictably.”
 - c. Ask the students to think of other examples of using rewards and incentives. If the students need help, describe a scenario in which one store sells a video game for \$40, while another store has a sale on the same game for 428. Ask the students to identify the incentive. Ask them from which store they would most likely buy the video game.
 - d. Ask the students whether they preferred answering review questions with or without the incentive you provided. Ask them whether their math skills could help them determine predictability.
 4. Hand out scrap paper or copies of the second tally sheet (Handout #2) and calculators. Tell your students to do fractional representations of the data you are going to give them. In these representations, the number of hands raised is the numerator and the total number of students in the class is the denominator.
 - a. Have the students write our fractional representations for each question for the first day you kept data, keeping the information separate.
 - b. Instruct the students to determine the average number of responses on day one, with and without incentives. Express each of the two average numbers as a fraction.



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- c. Convert each of these fractions into percentages and then find the average percentage of raised hands for the remaining three days.
 - d. Have the students look at the percentages to see if there is any regularity upon which sound conclusions can be drawn. If so, calculate the percentage difference between numbers of hands up, with and without incentives.
5. Use the data to prepare a graph showing the results over the four periods. Ask the students whether they can discern any predictive effects of incentives by reading the graph.

Review Session Tally Sheet

	DAY 1	DAY 2	DAY 3	DAY 4
WITHOUT INCENTIVES				
Responses to Question 1				
Responses to Question 2				
Responses to Question 3				
Responses to Question 4				
Responses to Question 5				
Total Number of Responses				
Fraction				
Percentage				
WITH INCENTIVES				
Responses to Question 1				
Responses to Question 2				
Responses to Question 3				
Responses to Question 4				
Responses to Question 5				
Total Number of Responses				
Fraction				
Percentage				

TOTAL NUMBER OF STUDENTS IN THE CLASS: _____

Review Session Tally Sheet

WITHOUT INCENTIVES	# OF HANDS RAISED	# OF STUDENTS	FRACTION	PERCENTAGE
Responses to Question 1				
Responses to Question 2				
Responses to Question 3				
Responses to Question 4				
Responses to Question 5				
Total Number of Responses				
WITH INCENTIVES				
Responses to Question 1				
Responses to Question 2				
Responses to Question 3				
Responses to Question 4				
Responses to Question 5				
Total Number of Responses				

COUPON GOOD FOR

SIGNED _____

COUPON GOOD FOR

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COUPON GOOD FOR

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Non-monetary Rewards

- Contact a local sports team and ask for tickets.
- Contact a local theater and ask for tickets.
- Sell the right to participate in a fancy special lunch. Serve the meal to the students, play soft music in the background, use a cloth table covering and napkins, serve the food on attractive tableware. If possible, invite a special person(s) to have lunch with the students and engage them in conversation. This provides a great opportunity for students to develop a comfort level with more formal situations.
- Play basketball in the gym after school.
- Sell time on the computer.
- Sell the right to participate in clubs during recess or, if possible, after school. Have teachers volunteer to teach a skill they know (photography, knitting, Frisbee, chess...).
- Once students have acquired a new skill (above), allow them to purchase time (during recess, excess part of lunch period, study hall, etc.) to hone their skills.
- Sell rights to be math helpers, reading helpers, etc.
- Sell a chance to have lunch with the principal.
- Sell the opportunity to have lunch with a friend in a different grade.
- Give coupons to students for things like particularly good classroom participation, winning a classroom competition, or tutoring

sessions (either because they can help others, or they are willing to get help they need). You can purchase big rolls of coupons from office supply stores, or you can print off the attached coupon sheet printing on different colors of paper if you like. Develop a system of weighting the value of those coupons and allow them to be redeemed. Some suggestions: 2 coupons = one free homework, 3 coupons = one extra credit point on a quiz, 6 coupons = one point on a test. (If you use grade boosting as a reward, be sure to set a maximum number of coupons allowed for each incident.)

- At the elementary school level, sell the following rights:
 - Choose a song for the class to sing
 - Be the line leader
 - Sit with a special friend at lunch
 - Choose a game at recess
 - Pick a book for the teacher to read to the class
 - Wear your shirt backwards at lunch
- Sell the following passes:
 - Homework pass
 - Quiz pass
 - A “do-over pass” which would allow a student receiving a failing grade to re-take a test or quiz that, while different from the failed one, covers the same material.
 - “Cut in line” pass
 - Bathroom pass
- Have a hat day, or a jeans day, or whatever you can live with that students are not normally allowed to wear in school.
- Make a video of school life and sell students the right to do the filming or choose the scenes to film.
- Sell the right to take pictures of your students that will be posted on a bulletin board in your room. (The pictures could be taken during a field trip, a school activity, recess, or any special occasion.)
- Ask parents to organize an after-school ice cream social or pizza party.
- Sell the opportunity to be the weekly (monthly?) official student greeter for your school when you have visitors.
- Rent a movie to show after school.
- Sell the right to eat a lunch outside on a blanket or at a picnic table.
- Sell the opportunity student to choose his own classroom seat.
- Rent or sell supplies to students if they forget them (pencils, paper, books, protractor, etc.)
- Reserve some space in your classroom where students can paint or draw, and sell blocks of space to your budding artists.
- Local fast food franchises will often give you coupons which can be sold to the students for school dollars.
- Sell the right to participate in a field trip.