

# Microfinance

**SUBMITTED BY:** Nina Hoe, University of Pennsylvania

**SUBJECT(S):** Computation

**GRADE LEVEL(S):** 9, 10, 11, 12

## ≡ OVERVIEW:

This lesson begins with an orientation to the idea of finance and financial services, lending/borrowing money and credit and pushes students to think about the types of services available to people in the developing world. The ideas of microfinance, microcredit and microloans are introduced and students think about the roles they play. Students then either read a Wharton Global Youth Program article and/or watch an interview about microfinance (depending on time), and discuss in pairs the financial costs to lending money. The class reviews these financial costs as a group, focusing on the need of a lender to break even, and students then work in small groups to solve computation problems focused on breaking even with microfinance loans. Finally, the class discusses the role of microfinance, the reality of high interest rates and student interest in investing in microfinance.

## ≡ NBEA STANDARD(S):

- Computation, I. Mathematical Foundations
- Computation, II. Number Relationships and Operations

## ≡ RELATED ARTICLES:

- [“Youth in Uganda Work Toward Lives as Job Creators, Not Seekers”](#)
- [“The WGYE Essay Contest: Entrepreneurial Winners Conjure Gloves, Alternative Energy, Shoes and Locks”](#)
- [“Kiva: Improving People’s Lives One Small Loan at a Time”](#)

- “Generation Microfinance: Charlie Javice Believes in the Power of Students to Alleviate Poverty”
- “Future of the Business World: Students in Vietnam Give Small Loans to Low-income Borrowers”
- “Exploring Social Entrepreneurship: ‘My Generation Is Full of Activists and Humanitarians’”
- “A Shanghai Student Perseveres in His Quest to Provide Funding for the Poor”
- “5 Ways the World Will Look Different in 2030”
- “5 Truths about Microfinance”

### **Common Core Standard(s):**

High School: Algebra

### **Objectives/Purposes:**

- Students learn about the concepts and roles of microfinance, microcredit and microloans.
- Students read about the realities and challenges of microfinance.
- Students think about the costs involved in lending money and the need of a lender to break even.
- Students compute break-even scenarios.

### **Other Resources/Materials:**

- Computer with Internet
- Calculators
- [Handout](#)

### **Activity**

#### Whole Class Discussion (5 mins)

Introduction to Microfinance/Microcredit/Microloans

1. What is finance? (***the management of large amounts of money, esp. by governments or large companies.***)
2. What are the some of the services provided by or aspects of finance? (***savings, investments, loans, insurance***)
3. What is a loan/what is the purpose of a loan?
4. What is credit/what is the purpose of credit?
5. Are financial services (i.e. banks, savings accounts, loans, credit, etc.) available to all people everywhere? Why/why not? (***No, many of the financial services we take for granted in the U.S. are not available in other countries, particularly developing countries. Probe students to think about the reasons that this might be – lack of infrastructure, etc. More importantly, how do banks and other financial institutions make money? – by charging interest – which if a lot of money is borrowed can be incredibly substantial. Reference that on a 30-year mortgage loan with a 5% interest rate, of \$80,000 for a \$100,000 house, the bank ends up collecting almost \$75,000 in interest payments. When poor people borrow very small amounts of money, there is little incentive for banks, as they would collect little in interest.***)
6. What is a microloan or microcredit?
7. What is microfinance?

Play the WGYG Glossary: [Microfinance](#)

*“Microfinance brings opportunity to the millions of individuals who live in abject poverty by providing them with financial services like loans, insurance and savings. Microfinance is credited with helping millions of poor people increase the size of their accumulated wealth.”*

and [Microloan](#)

*“A microloan is a small short-term loan issued by a microfinance institution usually to an impoverished entrepreneur. The average size of these loans is \$300. Sanjay received a microloan for \$200 to purchase a goat so that he could use its milk to produce and sell goat cheese.”*

8. What role does microfinance serve?

Guided Reading (10 – 15 mins)

Have the students read the first essay in the WGYG article [“The WGYG Essay Contest: Social Responsibility in the Corporate World.”](#) As they read have them keep in mind:

- What is microfinance?
- Who does it service?
- What are the tenants of the Grameen Model?

**OR**

**Video (or Reading) and Discussion (15 – 25 mins)**

Play the video (or have students read the abridged interview transcript) from “[Generation Microfinance: Charlie Javice Believes in the Power of Students to Alleviate Poverty.](#)”

Have students keep in mind/jot down notes on:

- What is microfinance?
- What is the difference between microfinance and donations?
- What are the challenges involved with microfinance?

**Pair → Whole Class Discussion (5 – 10 mins)**

***Have students turn to a partner and discuss the following questions.***

- What are the costs involved for a lender in making a loan? **(1 – cost of lending money/cost of capital – i.e. cost for bank to borrow money to lend, what you might earn in interest elsewhere, inflation, etc. 2 – Transaction fees)**
- What are some of the risks involved? **(Borrowers defaulting)**
- How are different costs related to the amount of money borrowed (or not)?
- How do you think lenders in general or microfinance institution (MFI) covers the cost of making a loan?

***Have students report back on their answers. Make sure that all students understand the concept of default. Discuss the differences between proportional and non-proportional costs. Make sure students understand the basic concept of break even. Play the [WGYP Glossary Break Even](#).***

**Small Group/Pair Activity – Computations (15 mins)**

Calculating break-even for a microloan.

Read the following excerpt from [Consultative Group to Assist the Poor](#)

### *Why Do MFIs Charge High Interest Rates?*

*Over the past two decades, institutions that make microloans to low-income borrowers in developing and transition economies have focused increasingly on making their operations financially sustainable by charging interest rates that are high enough to cover all their costs. They argue that this policy will best insure the permanence and expansion of the services they provide. Sustainable (i.e., profitable) microfinance providers can continue to serve their clients without needing ongoing infusions of subsidies, and can fund exponential growth of services for new clients by tapping commercial sources such as deposits from the public.*

*The problem is that the administrative costs are inevitably higher for tiny microlending than for normal bank lending. Lending out a million dollars in 100,000 loans of \$100 each will obviously require a lot more in staff salaries than making a single loan for the total amount. As a result, interest rates in sustainable microfinance institutions (MFIs) are substantially higher than the rates charged on normal bank loans.*

*There are three kinds of costs the MFI has to cover when it makes microloans. The first two, the cost of the money that it lends and the cost of loan defaults, are proportional to the amount lent. For instance, if the cost paid by the MFI for the money it lends is 10 percent, and it experiences defaults of 1 percent of the amount lent, then these two costs will total \$11 for a loan of \$100, and \$55 for a loan of \$500. An interest rate of 11 percent of the loan amount thus covers both these costs for either loan.*

*The third type of cost, transaction costs, is not proportional to the amount lent. The transaction cost of the \$500 loan is not much different from the transaction cost of the \$100 loan. Both loans require roughly the same amount of staff time for meeting with the borrower to appraise the loan, processing the loan disbursement and repayments, and follow-up monitoring. Suppose that the transaction cost is \$25 per loan and that the loans are for one year. To break even on the \$500 loan, the MFI would need to collect interest of  $\$50 + 5 + \$25 = \$80$ , which represents an annual interest rate of 16 percent. To break even on the \$100 loan, the MFI would need to collect interest of  $\$10 + 1 + \$25 = \$36$ , which is an interest rate of 36 percent.*

*MFIs have to charge rates that are higher than normal banking rates to cover their costs and keep the service available. But even these rates are far below what poor people routinely pay to village money-lenders and other informal sources, whose percentage interest rates routinely rise into the hundreds and even the thousands.*

*This does not mean that all high interest charges by MFIs are justifiable. Sometimes MFIs are not aggressive enough in containing transaction costs. The result is that they pass on unnecessarily high transaction costs to their borrowers. Sustainability should be pursued by cutting costs as much as possible, not just by raising interest rates to whatever the market will bear.*

*Interest rates, while still too high in some places, are dropping on average 2.3 percent a year. The microfinance industry has placed a lot of emphasis on improving efficiency in order to bring down these costs, so that poor clients are not paying unnecessarily high rates. New technology also offers to help reduce costs, so we expect rates to continue dropping as institutions become increasingly efficient at delivering services to poor people.*

CGAP research found:

- MFI interest rates averaged about 28 percent in 2006, declining by 2.3 percent a year since 2003.*
- MFI rates are lower than consumer and credit card rates in most countries, and usually far lower than rates charged by informal moneylenders.*
- At an average 12.7 percent of portfolio in 2006, operating costs are the largest single contributor to interest rates, declining by one percentage point per year since 2003.*
- MFIs on average have higher returns on assets than commercial banks, but produce lower returns on equity for their investors. At the same time, the most profitable 10 percent of MFIs were producing returns on equity above 34 percent in 2006. Some of these profits are captured in private pockets.*

Computations:

1. On a 1-year loan of \$100, the cost of lending is 7%, the default rate is 2% and the transaction fee is \$20.
  - a. How much money should the lender charge the borrower in order to break even? **(100 + 7 + 2 + 20 = \$129)**
  - b. What is the annual interest rate to the borrower? **(29%)**
2. On a 1-year loan of \$1,000, the cost of lending is 7%, the default rate is 2% and the transaction fee is \$20.
  - a. How much money should the lender charge the borrower in order to break even? **(1000 + 70 + 20 + 20 = \$1110)**
  - b. What is the annual interest rate to the borrower? **(11%)**
3. Given the same cost of lending, default rate, and transaction fee, is the interest rate the same for every loan? How does the amount of money you borrow affect your interest rate? **(Since the transaction fees are fixed, the more money you borrow the lower**

***the interest rate since you will have to pay that fee no matter if you borrow \$100 or \$1000)***

4. On a 1-year loan of \$400, the MFI charged an interest rate of 23.7% to the borrower.
  - a. If the default rate in the region is 1% and the transaction fee is \$30, what is the cost of lending? (***15.2%: 23.7% of \$400 is \$94.80, so \$94.80 – \$4 – \$30 = \$60.80, which is 15.2% of \$400***)

### **Tying It all Together:**

#### Whole Class Discussion: (5 mins)

1. What is the role of microfinance?
2. How do interest rates compare to typical interest rates in the US?
3. Why is this the case?
4. Is it fair?
5. Would you invest in microfinance? Why or why not?

### **Practice Outside of the Classroom:**

Check out some of the microfinance websites, for example:

- [www.grameenfoundation.org](http://www.grameenfoundation.org)
- [www.kiva.org](http://www.kiva.org)
- [www.poverup.org](http://www.poverup.org)

What are some similarities and differences?

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