## The US Financial System

## Overview

In this lesson, students will gain an understanding of the role banks play in the US economy through reading an informative comic book and completing an investment and banking webquest. Students will then participate in a simulation of the fractional reserve banking system and process money creation through lending.

## Grade

10

## NC Essential Standards for Civics and Economics

- CE.PFL.1.2- Explain how fiscally responsible individuals create and manage a personal budget that is inclusive of income, taxes, gross and net pay, giving, fixed and variable expenses and retirement
- CE.PFL.1.5- Analyze how fiscally responsible individuals save and invest to meet financial goals
- CE.E.1.6- Compare national, state and local economic activity
- CE.E.3.2- Explain how fiscal policy and the monetary policy influence overall levels of employment, interest rates, production, price level and economic growth
- CE.E.3.3- Analyze organizations in terms of their roles and functions in the United States economy


## Essential Questions

- What purpose do financial institutions serve in the US economy and what are the different types of financial institutions?
- What services do banks provide customers?
- What are some of the different types of investment accounts that banks offer?
- What is the fractional reserve banking system?
- How do banks create new money through loans?


## Materials

- "The Story of Banks" comic books. Comics are available free online at:
- http://www.newyorkfed.org/education/addpub/Comic Banks.pdf
- "The Story of Banks" Guided reading questions, attached
- Computers with internet access
- Types of Investments and Bank Scavenger Hunt Webquest, attached
- Money Creation Student Roles, attached
- Overhead projector, poster paper, marker, scissors
- Optional: Explanation of the Mortgage/ Real estate financial crisis video, Video is available at:
- http://www.pbs.org/newshour/bb/business/july-dec07/subprime 08-30.html
- Optional: Additional explanation of the 2008 financial crisis, with a special focus on real estate and credit. Video is available online at:
- http://vimeo.com/3261363
- Research Current Economic Events in the News, attached


## Duration

1 block period

## Teacher Preparation

Before class, you will need to create multiple props for the "Fractional Reserve System and Money Creation" simulation; see Step \#5 under "Procedure" for details.

## Procedure

1. As a warm-up, on a piece of poster paper write the work "bank" at the top and below it create a K/ W/ L chart.

- Title the first column K and ask the students what they already know about banks. Record their responses in the K column.
- Title the second column W and ask the students what they want to know about banks or what they would like to know more about. Record their responses in the second column.
- Leave the L column blank. After talking about banks, return to this column and solicit concepts that they students have learned after the lesson about banks.

2. Pass out copies of "The Story of Banks" comic book and guided reading questions. Have students read the comic book and complete guided reading questions. (Comic books are available online at http://www.newyorkfed.org/publications/. A maximum of 30 copies are free per teacher and take approximately two- three weeks to arrive.) The teacher should review answers to questions with the students after class has had sufficient time to read and answer. Note:

- As you discuss the difference between commercial banks and credit unions (\#1 \& 2 on the Guided Reading Questions), give the students definitions for the 3 major types of private financial institutions.

1. Commercial banks- this is what people normally call a "bank". Commercial banks offer checking and savings accounts for depositors and make various loans to borrowers. The term "commercial" is used to distinguish it from an investment bank.
2. Savings and loans- also known as a Thrift, is a financial institution that specializes in accepting savings deposits and making mortgage loans.
3. Credit unions- a cooperative financial institution that is privately owned and controlled by its members.

- As you discuss the different services provided by financial institutions (\#3-5 on the Guided Reading Questions), give the students descriptions for the main services provided by private financial institutions to customers.
- Checking
- Savings
- Safety deposit boxes
- Loans
- Overdraft checking
- Automatic deposit
- Automatic payment

3. Using computers with internet access, students will complete "Types of Investments and Bank Comparison Activity". Provide the following website to assist student online research. Review correct answers to Part I after students have completed assignment.

- www.wikipedia.com
- www.about.com
- http://www.federalreserveeducation.org/PFED/
- www.bankofamerica.com
- www.ncsecu.org
- www.bbt.com

Review your expectations for behavior in the computer lab and appropriate use of technology. Remind students to try their best and take the simulation seriously. Circulate around the room to assist and regulate student activities while using the internet.

## Fractional Reserve System and Money Creation Simulation

4. The students will participate in a simulation based on the Fractional Reserve Banking system and how money is created by banks. First, the teacher will preview some essential definitions. Many of these definitions were also discussed in "The Story of Money" comic boards and guided reading questions.

- Remind students that when people deposit money in a bank, banks hold on to some of the deposited money as reserves but lend the rest of it. Banks make money by charging a higher rate of interest on the loans they make than the rate they pay on deposits. This is called fractional reserve banking. A Fractional Reserve Banking System is a banking system in which only a fraction of the total deposits managed by a bank must be kept in reserve.
- Remind students that in the United States, there are reserve requirements set by the Federal Reserve. Reserve Requirement is a bank regulation that sets the minimum reserves each bank must hold to customer deposits and notes. These reserves are designed to satisfy withdrawal demands, and would normally be in the form of cash stored in a bank vault or with the Federal Reserve. While banks do not hold reserves simply because they are required to and they may choose to hold more reserves than they are required to, in this activity students should assume that banks hold only the reserves they are required to and lend the rest of the money they have on deposit. Point out that the highest required reserve ratio in the United States today is 10 percent, but to make the activity work more easily, students are going to assume a 20 percent required reserve ratio in this activity.

5. Teacher pre-class instructions: Before class, you will need to create multiple props for the simulation.

- The first important prop for the simulation is an oversized check. To do this, create an overhead transparency sheet using Visual 1. Using the overheard transparency, project the visual onto a large sheet of poster paper and trace the check.
- Create an overhead transparency sheet using Visual 2, Using the overheard transparency, project the visual onto the back of the oversized check described in part (b).
- Print Money Expansion Simulation on a transparency to project during simulation.
- You may also want to create name-tags for each student that is participating in the simulation based on the roles described below.

6. Have 14 students volunteer to take part in the simulation. Print out the attached "Money Creation Simulation Student Roles" and cut the roles into slips of paper for the student. Give the participants a few moments to read over their roles. Part of the class will act as bank customers, either borrowers or depositors, and the other part of the class will act like banks that take deposits and make loans. Students not participating in the simulation should follow along on the "Money Expansion Simulation" worksheet. In each round, a bank will make a loan to a borrower who will spend the money with a business. The business with deposit the loan in a new bank and the new round will begin. Explain the following instructions to students participating:
"Each of you has been given a sheet of paper. On this sheet of paper, you are given a role that you will play during the simulation. You must follow the instructions on the role exactly as it is written. You must also pay attention closely so you will know when you will be participating in the simulation." The instructor will be responsible for keeping the simulation running smoothly.

## 7. Begin the Simulation:

- Inform the students that you recently received your monthly pay check and hold up the oversized check that you created. Tell them that you are going to deposit the check in the NC State Employees Credit Union (Bank A). Inform the students that all new deposits count as part of the money supply and direct them to record this on the chart when necessary. The reserve requirement is $10 \%$, meaning that banks must keep $10 \%$ of each new deposit, and can then lend out the rest.
- Ask students how much of the $\$ 1,000$ does NC State Employees Credit Union (Bank A) have to loan out from the original deposit? (Answer- Bank A can loan out \$900.)
- Instruct Borrower 1 to come forward and request a loan from Banker A. Instruct Banker A to tear of one square from the check and to give Borrower 1 the larger portion of the bill and retain the smaller portion as reserves. Point out that in real life Borrower 1 might actually be more than one individual or business.
- Direct Business 1 to come forward and have Borrower 1 pass off the check.
- Direct Banker B to come forward. Direct Business 1 to deposit the $\$ 900$ in Bank of America (Bank B). Instruct Banker B to take the $\$ 900$ bill from Borrower 1 and have the class record the $\$ 900$ deposit on the worksheet in the space for Bank B.
- Ask the students what the size of the money supply is now. (Total deposits $=\$ 1,000+\$ 9000=$ $\$ 1,900$ ).
- Ask the Economist to calculate the required reserves associated with the $\$ 900$ deposit into Bank of America (Bank B) and have the class record it on the worksheet. ( $\$ 900 \times 10 \%=\$ 90$ )
- Ask what Bank of America (Bank B) will do now. (Loan out $\$ 810$.)
- Instruct Borrower 2 to come forward and request a loan from Banker B. Instruct Banker B to tear of a square from the check and give Borrower 2 the larger portion of the bill and retain smaller portion as reserves. Direct Business 2 to come forward and have Borrower 2 pass off the check.
- Direct Banker C to come forward. Direct Business 2 to deposit the $\$ 810$ in Chase (Bank C). Instruct Banker $C$ to take the $\$ 810$ bill from Borrower 2 and have the class record the $\$ 810$ deposit on the worksheet in the space for Bank C.
- Ask the students what the size of the money supply is now. (Total deposits = \$1,000 + \$900 + $\$ 810=\$ 2,710$ ).
- Ask the Economist to calculate the required reserves associated with the $\$ 810$ deposit into Chase (Bank C) and have the class record it on the worksheet. ( $\$ 810 \times 10 \%=\$ 79$ )
- Ask what Chase (Bank C) will do now. (Loan out \$729.)
- Instruct Borrower 3 to come forward and request a loan from Banker C. Instruct Banker C to tear of a square from the check and give Borrower 3 the larger portion of the bill and retain smaller portion as reserves. Direct Business 3 to come forward and have Borrower 3 pass off the check.
- Direct Banker D to come forward. Direct Business 3 to deposit the $\$ 729$ in JP Morgan (Bank D). Instruct Banker D to take the $\$ 729$ bill from Borrower 3 and have the class record the $\$ 729$ deposit on the worksheet in the space for Bank D.
- Ask the students what the size of the money supply is now. (Total deposits $=\$ 1,000+\$ 900$ $+\$ 810+\$ 729=\$ 3.439$ ).
- Ask the Economist to calculate the required reserves associated with the $\$ 729$ deposit into JP Morgan (Bank D) and have the class record it on the worksheet. ( $\$ 729 \times 10 \%=\$ 72.90$ ) Ask what JP Morgan (Bank D) will do now. (Loan out \$656.10.)
- Instruct Borrower 4 to come forward and request a loan from Banker D. Instruct Banker D to tear of a square from the check and give Borrower 4 the larger portion of the bill and retain smaller portion as reserves. Direct Business 4 to come forward and have Borrower 4 pass off the check.
- Direct Banker E to come forward. Direct Business 4 to deposit the $\$ 656.10$ in BB\&T (Bank E). Instruct Banker E to take the $\$ 656.10$ bill from Borrower 4 and have the class record the $\$ 656.10$ deposit on the worksheet in the space for Bank E.
- Ask the students what the size of the money supply is now. (Total deposits $=\$ 1,000+\$ 900$ $+\$ 810+\$ 729+\$ 656.1=\$ 4,095.10)$.

7. Debrief the simulation with the following questions:

- What would have happened to the money supply if we continued with the simulation?
- If a bank loans out money that has been deposited, what would happen if someone wants to take the money out of their bank account? Answer: Banks take in a lot of money in deposits, and it is very unlikely that everyone that has deposited money in a bank would withdraw it at the same time. The point of keeping reserves is to cover the amount that is usually withdrawn in a short period of time. During the Great Depression, people began rushing to banks to withdraw all their money and many banks went bankrupt.
- If making loans creates money, what do you think the effect would be when banks start calling loans in (people having the repay loans)?
- How was the simulation similar to reality? How was the simulation more simplistic than reality?
- What would happen to the money creation process if banks chose to keep more in reserves?
- What if banks kept all of a deposit in reserves?


## Additional Activity

- Using an LCD project connected to the internet, show the short clip that explains the how banks are involved in the current crisis. The video can be accessed at the following website: http://www.pbs.org/newshour/bb/business/july-dec07/subprime 08-30.html.


## Differentiation

## Students with special needs

- Ensure that students are placed in mixed ability groups.
- Students who do not work well in small groups may work alone as legislative reports. They will visit different coalitions and compose a newspaper article about the different opinions about the gas tax holiday bill.
AIG
- Research alternative fuel sources such as ethanol and hydrogen. Have student create a cost analysis comparing the rising gasoline prices with that of alternative energy initiatives.

Name: $\qquad$

## "The Story of Banks" Guided Reading Questions

1. What is a commercial bank?
2. How are credit unions different from normal commercial banks?
3. When someone writes a check, where does the money come from?
4. What is overdraft?
5. What does ATM stand for?
6. Does a bank keep all the money it receives from deposits in the vault? If not, where is the money?
7. What is the reserve requirement?
8. Describe how money is created by banks making loans.
9. What agency insures bank deposits? How much money is insured?
10. What is the different between passbook saving accounts and Certificates of Deposits (CDs)?
$\qquad$

## Financial Investments and Bank Scavenger Hunt Webquest

Part I: Using the Internet, research the following terms. Match the definitions below with the correct term.

| Stocks | Certificate of Deposit <br> (CD) | Money Market Deposit <br> Account | US Savings Bond |
| :--- | :--- | :--- | :--- |
| Mutual Fund | Corporate Bond | Savings Account |  |

1. $\qquad$ Takes money from many investors and uses it to make growth or income investments based on stated investment objectives. Includes investment in a mixture of bonds, CDs, stocks, and real estate to balance risk.
2. $\qquad$ Similar to a savings account, this investment involves very little risk. They are different from savings accounts though because they have a specific, fixed term (often three months, six months, or one to five years), and, usually, a higher fixed interest rate.
3. $\qquad$ These accounts work like checking accounts, but the bank can limit the number of checks you can write a month or year. These accounts pay higher than a savings account, but lower than a CD. Usually this account requires a higher minimum balance compared to a savings account.
4. $\qquad$ This investment is a loan to the federal government for a specified time period with a set interest rate of return.
5. $\qquad$ This form of saving is essentially loaning a financial institution money for a set period of time and getting interest in return. Usually, these accounts offer a higher interest rate than savings bonds.
6. $\qquad$ Part ownership in a corporation. Generally a risky investment because you can potentially lose your money.
7. $\qquad$ These accounts are the most commonly used and tend to pay a low interest rate to the saver, but can be easily converted into cash.

Part II: Using the websites given to you, research the interest rate for each bank for the different types of investment accounts listed below.

| Type of Account/ <br> Loan | Bank of America | NC State Employees' <br> Credit Union | BB\&T |
| :--- | :--- | :--- | :--- |
| Checking Account |  |  |  |
| Savings Account |  |  |  |
| Money Market Account |  |  |  |
| 6-month CD |  |  |  |

## "The Story of Banks" Guided Reading Questions- ANSWER KEY

1. What is a commercial bank? A financial institution that takes deposits and makes loans.
2. How are credit unions different from normal commercial banks? Credit unions only offer financial services to members.
3. When someone writes a check, where does the money come from? The person's checking account.
4. What is overdraft? When someone writes check for more than is in the checking account, the bank will take money out of other account's the individual has so the check will not bounce.
5. What does ATM stand for? Automated Teller Machine
6. Does a bank keep all the money it receives from deposits in the vault? If not, where is the money?

No. The Federal Reserve.
7. What is the reserve requirement? Percent of a deposit the bank must legally keep in reserves.
8. Describe how money is created by banks making loans. People are able to spend the money that other people are saving.
9. What agency insures bank deposits? How much money is insured? FDIC; \$100,000
10. What is the different between passbook saving accounts and Certificates of Deposits (CDs)? CDs have a specific, fixed term and usually offer a higher interest rate.

## Financial Investments and Bank Scavenger Hunt Webquest- ANSWER KEY

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| Stocks | Certificate of Deposit <br> $(\mathrm{CD})$ | Money Market Deposit <br> Account | US Savings Bond |
| :--- | :--- | :--- | :--- |
| Mutual Fund | Corporate Bond | Savings Account |  |

1. Mutual Fund Takes money from many investors and uses it to make growth or income investments based on stated investment objectives. Includes investment in a mixture of bonds, CDs, stocks, and real estate to balance risk.
2. Certificate of Deposit Similar to a savings account, this investment involves very little risk. They are different from savings accounts though because they have a specific, fixed term (often three months, six months, or one to five years), and, usually, a higher fixed interest rate.
3. Money Market Deposit Account These accounts work like checking accounts, but the bank can limit the number of checks you can write a month or year. These accounts pay higher than a savings account, but lower than a CD. Usually this account requires a higher minimum balance compared to a savings account.
4. US Savings Bond This investment is a loan to the federal government for a specified time period with a set interest rate of return.
5. Corporate Bond This form of saving is essentially loaning a financial institution money for a set period of time and getting interest in return. Usually, these accounts offer a higher interest rate than savings bonds.
6. Stocks Part ownership in a corporation. Generally a risky investment because you can potentially lose your money.
7. Savings Account These accounts are the most commonly used and tend to pay a low interest rate to the saver, but can be easily converted into cash.

Visual 1


Visual 2

| Tear Off $1^{\text {st }}$ | Tear Off $2^{\text {nd }}$ | Tear Off $3^{\text {rd }}$ | Tear Off $4^{\text {th }}$ | Tear off $5^{\text {th }}$ |
| :---: | :---: | :---: | :---: | :---: |
| Required Reserves: <br> 10\% of Deposit <br> \$ to Loan: 900 | Required Reserves: $10 \%$ of $\$ 900$ Deposit <br> \$ to Loan: 810 | Required Reserves: $10 \%$ of $\$ 810$ Deposit <br> \$ to Loan: 729 | Required Reserves: $10 \%$ of $\$ 729$ Deposit <br> \$ to Loan: 656 | Required Reserves: <br> $10 \%$ of Deposit <br> \$ to Loan: 590 |
| Tear Off ${ }^{\text {ith }}$ | Tear Off $7^{\text {th }}$ | Tear Off $8^{\text {1 }}$ | Tear Off $9^{\text {1 }}$ | Tear Off $10{ }^{\text {ir }}$ |
| Required Reserves: $10 \%$ of Deposit | Required Reserves: 10\% of Deposit | Required Reserves: <br> $10 \%$ of Deposit | Required Reserves: <br> 10\% of Deposit | Required Reserves: <br> 10\% of Deposit |
| \$ to Loan: 531 | \$ to Loan: 478 | \$ to Loan: 430 | \$ to Loan: 387 | \$ to Loan: 348 |

## Money Creation Simulation Student Roles

| Economist | You will need to help the teacher and class with math. Bring a calculator with you |
| :---: | :---: |
| Instructor (Depositor \#1) | You have just received your monthly paycheck and decide to open a checking account at NC State Employees Credit Union Bank (Bank A) |
| NC State Employees Credit Union (Bank A) | You will take your teacher's (Depositor \#1)'s check. Rip 10\% of the check to keep in reserves and then offer to loan the rest out to someone in the public that wants it. Announce to the class your bank name and how much you have available to loan. |
| Tonya Eastman (Borrower \#1) | You have decided to buy a Prius and you need to take out a loan from Wachovia. You are willing to borrow as much as possible to help pay for your want. |
| Toyota (Business \#1) | You will take money from Tonya Eastman in exchange for a Prius and deposit the money in your bank, which is the Bank of America. |
| Bank of America (Bank B) | Rip $10 \%$ of the check to keep in reserves and then offer to loan the rest out to someone in the public that wants it. Announce to the class your bank name and how much you have available to loan. |
| Tom Schaffer (Borrower \#2) | You want to borrow money from Bank of America to buy a new couch from IKEA. You are willing to borrow as much as possible to help pay for your want. |
| IKEA (Business \#2) | You will take money from Tom Schaffer in exchange for a couch and deposit the money in your bank, which is the Bank of America. |
| Chase (Bank C) | Rip $10 \%$ of the check to keep in reserves and then offer to loan the rest out to someone in the public that wants it. Announce to the class your bank name and how much you have available to loan. |
| Christie Hinson (Borrower \#3) | You have an upcoming wedding in Hawaii and need a loan from Chase Bank to help pay for the plane tickets. You are willing to borrow as much as possible to help pay for your want. |
| Southwest (Business \#3) | You will take money from Christie Hinson in exchange for a plan tickets and deposit the money in your bank, which is the Bank of America. |
| JP Morgan (Bank D) | Rip $10 \%$ of the check to keep in reserves and then offer to loan the rest out to someone in the public that wants it. Announce to the class your bank name and how much you have available to loan. |
| Kelley O'Brien (Borrower \#4) | You are tired of paying so much for gas and have decided to take out a loan from JP Morgan to buy a Vespa to drive to work. |
| Vespa (Business \#4) | You will take money from Tonya Eastman in exchange for a Prius and deposit the money in your bank, which is the Bank of America. |
| BB\&T (Bank E) | Rip $10 \%$ of the check to keep in reserves and then offer to loan the rest out to someone in the public that wants it. Announce to the class your bank name and how much you have available to loan. |

## Bank Ledger

## NC State Employees Credit Union

(Bank A)
Deposit \$
Required Reserves (10\%) \$ $\qquad$
Amount Available for Loans \$ $\qquad$

## Bank of America (Bank B)

Deposit \$ $\qquad$ $\longrightarrow$
Required Reserves (10\%) \$ $\qquad$
$\qquad$
\$ $\qquad$
Amount Available for Loans \$ Increase in the Money Supply


Deposit \$ $\qquad$


Required Reserves (10\%) \$ $\qquad$
Amount Available for Loans \$ $\qquad$

JP Morgan (Bank D
Deposit \$

\$
\$ $\qquad$

Required Reserves (10\%) \$ $\qquad$
Amount Available for Loans \$ $\qquad$

BB\&T (Bank E)
Deposit \$ $\qquad$


Required Reserves (10\%) \$ $\qquad$
Amount Available for Loans \$ $\qquad$

1. Which best describes the difference between a commercial bank and a credit union?

A commercial banks offer lower interest rates for loans
B credit union issue credit cards
C commercial banks only offer savings accounts
D credit unions offer services only to members based on set criteria
2. Getting cash at an ATM or using a debit card to purchase an item would be most similar to which of the following?

A counterfeiting currency'
B using a credit card to purchase an item
C depositing currency into your saving account
D writing a check against your demand deposit account
3. What type of investment is similar to a basic savings account but has a specific, fixed term and usually offers a higher fixed interest rate?

A certificate of deposit
B stock
C money market deposit account
D mutual fund
4. Which is the primary role of the FDIC?

A Regulate saving and loans
B Advise the Secretary of Treasury
C Insure citizens' deposits made at commercial banks
D Provide financial support for home mortgage borrowers
5. If the reserve requirement is 8 percent, how much of a $\$ 100$ deposit must be kept by a customer's bank and not loaned to other customers?

A $\$ 8.00$
B $\$ 92$
C $\$ 80$
D $\$ 12$
6. Which best describes the fractional reserve banking system?

A banks must keep gold in their vaults as reserves against their deposits
B banks hold only a part of their deposits in reserves
C reserves must exceed deposits
D banks are allowed to make loans, but do not take deposits
7. What would most likely happen to the money supply if banks lend some excess reserves to borrowers?

A money supply grows
B money supply stabilizes
C money supply is deflated
D money supply becomes volatile.
8. What would happen of a commercial bank decided to hold more than required reserves?

A decrease in checking accounts
B decrease the amount of potential loans made by the bank
C increase the interest rate offered by the bank
D decrease the reserve ratio of the banking system

## Practice EOC Multiple Choice Questions- ANSWER KEY

1. Which best describes the difference between a commercial bank and a credit union?

A commercial banks offer lower interest rates for loans
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