

# " WE' RE IN THE MONEY"

ITV SERIES

NOVA

*Secrets of Making Money*

WG2314

GRADES 7-9

## PREVIEWING ACTIVITIES

"Today we are going to begin our lesson by talking about money; where it comes from, who makes it and how it is made. Everything you wanted to know and then some. . ."

"Who is pictured on the \$1, \$5, \$10, \$20, \$50, \$100?" Let students guess their answers and then tell students the correct answers.

"Today we are going to focus on the \$100 bill. Does anyone know what is different about this bill?" Most students know the bill was changed, but do not know exactly what was changed. Let some discussion take place.

"Have any of the other denominations changed? What about the \$2? Or the Susan B. Anthony dollar?" More general discussion should take place to get the students thinking about money.

"I am going to pass around an old and new \$100 bill so that you can begin to see first hand the differences between the two bills. As you look at the money think about why the money had to be made to look different." Bring the discussion around to the topic of counterfeiting.

"Who can define counterfeiting? Wait for the correct answer. Good, it is (illegally making or changing money.)" More discussion.

Pass out a copy of the \$100 bills to each student. "Before we begin to watch this video on money look at the two bills you have in front of you and write down what is the same and what is different about them. As we watch the video you will be able to check to see how many changes you were able to pick out."

"Let's watch, "Secrets of Making Money".

## OVERVIEW

Students seem intrinsically motivated to work on a lesson dealing with money so this lesson has a great deal of built in interest. Students will first discover how money is made by watching video segments and will then discover how science combats counterfeiting with the four new security features on the \$100 bill. As well as working with science, students will use applied math to calculate a personal budget to show dollar value of money.

All of the video segments are to be used as an anticipatory set for a lesson on personal budgets to get students thinking about what goes into making money and the great lengths that are taken to discourage counterfeiters. This lesson should follow discussions of fixed and flexible expenses as well as income versus costs.

# " WE' RE IN THE MONEY"

## LEARNING OBJECTIVES

Students should be able to:

- Identify the four security features represented on the \$100 bill.
- Explain why counterfeiting will always exist.
- List at least five ways of identifying money.
- Define finance/budget vocabulary.
- Calculate a personal budget into monthly expenses and income.
- Figure monthly income tax.

## MATERIALS

- 1 copy per student of an old and new \$100 bill (front and back), enlarged to 150%. Optional: I use actual money and pass around a new and old \$100 bill so that they can feel the money as well as hold it up to the light, etc. but the copies work fairly well, too.
- 1 copy of Money Worksheet per student
- 1 newspaper per student
- 1 budget vocabulary overhead
- 1 budget worksheet per student

## FOCUS FOR VIEWING

To give the students a specific responsibility while viewing: Students will raise their hands each time they hear a name for money. Students will look for examples of how the \$100 bill was changed to see if this data matches what they wrote down earlier.

*Note: Give students a copy of the Money Worksheet to use during the video, and have students be responsible for telling the teacher when to pause the video as they find the answers to their worksheet questions.*

## VIEWING ACTIVITIES

*Note to the teacher: This is an excellent video lasting approx. 50 minutes. At some time during this unit, you may want to go back and show the rest of the video that was not used for this lesson, because the information presented is worthy of the additional time.*

**START THE VIDEO** at the point where the Crane Paper Company is shown.

**PAUSE THE VIDEO** when the narrator explains that the feel of money could not be changed. Ask the students why the feel of money might be so important. ( Explain that the feel is the most universally recognized feature of money. Especially for bankers and store clerks.) **RESUME THE VIDEO.**

**PAUSE THE VIDEO** as the cotton is being dumped into the cauldron. Ask the students if they have ever been to a different country and felt their money. What does it feel like? Does American money feel different? **RESUME THE VIDEO.**

**PAUSE THE VIDEO** when the narrator explains that red and blue fibers are added. Ask the students if they can see any fibers in any money they might have in their pockets or on the \$100 bills that were passed around earlier? Discuss that this is another added feature to make the money more secure from counterfeiters. **RESUME THE VIDEO.**

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## VIEWING ACTIVITIES (continued)

**PAUSE THE VIDEO** on the definition of raised note. Ask the students to explain this concept. Then review the definition with the students, ("A raised note is when a counterfeiter bleaches a bill and then copies a higher denomination onto it"). **RESUME THE VIDEO.**

**PAUSE THE VIDEO** when the security thread is introduced as a way to stop people from raising notes. At this point have the students hold their money up to the light to see the security thread. Discuss which denominations have the security thread and have the students guess how the thread is put into the money. **RESUME THE VIDEO.**

**PAUSE THE VIDEO** when the announcer explains that we are not allowed to see how the security thread is put into money. Ask students if they can remember how thick the thread is. (.042 in.) **FAST FORWARD THE VIDEO** to the pictures of Ben Franklin.

**PAUSE THE VIDEO** on the pictures of Ben Franklin. Ask the students why the picture of Ben Franklin remained on the new money. (Explain that it is because his face is currently recognized and the idea behind changing the money is to make the bill more secure, and not to worry about the aesthetics.) **RESUME THE VIDEO.**

**PAUSE THE VIDEO** as the words that are micro printed on Franklin's collar are shown close-up. Ask the students why this is important. (It is difficult for a counterfeiter to photocopy the tiny letters and numbers). **RESUME THE VIDEO.**

**PAUSE THE VIDEO** while the hologram is taken through the torture chambers so that the students can begin to think about how much abuse the average bill goes through in its lifetime. **RESUME THE VIDEO.**

**PAUSE THE VIDEO** on the hi-tech colors that were added. Ask the students if they think that this security feature will help deter counterfeiters. Discuss their answers. **RESUME THE VIDEO.**

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## ACTION PLANS

Visit a bank to understand where money goes, how it is stored and what the vault looks like.

Invite a guest speaker from a bank or a loan officer to talk about loans and budgets.

Invite a speaker from a bank to talk about counterfeiting and bring in sample counterfeit bills.

Write a letter to a loan officer asking for a loan.

Survey the students in the school asking who they would put on the ten dollar bill.

Invite a guest speaker from the police department in charge of counterfeiting.

## VIEWING ACTIVITIES (continued)

**PAUSE THE VIDEO** as each of the 4 security features are shown once again. (These come one right after the next, so be prepared to pause quickly.) Ask the students to identify each of these features on the bills in front of them. Ask the students which security feature they believe is the most effective. **STOP THE VIDEO.**

## POST VIEWING ACTIVITIES

"Now that you've seen how money is made and how money is counterfeited why do you think so many people still try to counterfeit?" Discuss their thoughts.

Review with the students the different names that money can be called ie: bill, dollar, cash, note, legal tender, dough, change, moolah, and ask the students if they think that this new \$100 bill is less likely to be counterfeited. Discuss their thoughts.

"Now that you better understand physical attributes of the \$100 bill let's discuss the monetary value of money and discover how well you'll be able to budget that money."

"Which one of your parents pays the bills and is generally in charge of your family's money?" Discuss their answers.

"Can anyone define budget?" Call on students to generate ideas. "You're all right, a budget is a way of keeping track of money spent and received. Most families budget their money on a monthly basis. Take out a sheet of paper and copy these vocabulary words as I discuss each one in more detail." Put up the budget vocabulary overhead and uncover one term at a time while discussing and giving examples. The students usually like to tell personal stories which leads to a nice class discussion.

"Today you are going to begin a personal budget as if you were an 18-year-old who has just moved out of your parent's home. You only have a high school diploma, no experience at anything with no apartment, transportation, furniture or job! You are going to use a worksheet and a newspaper to complete this budget."

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## POST VIEWING ACTIVITIES (continued)

Pass out the budget worksheets and go over instructions with the students. Show an example of a finished budget. Ask the students if they have any initial questions and then hand out a newspaper to each student and let them begin!

When most students are just about done explain that they have to pay 30% taxes on their income. Have the students refigure their new income to see if they now have enough money to pay all of their monthly bills.

After students complete their budgets discuss their difficulties and their triumphs. "Did you have to cut corners? Sacrifice? Change totals? Eliminate savings? How far does a monthly pay check actually go, especially without more education or training?"

Remind the students that if this was a real budget they would have had to pay cash for most of the items and they would not be able to make monthly payments on most of the items from the newspaper.

Bring the discussion around to the value of money and the importance of respecting their paychecks.

## EXTENSIONS

Science: Test money for strength and durability. (See NOVA teacher's guide).

Art: Design a new \$1 bill including security features.

Technology: Send E-mail to a bank asking about counterfeiting.

English: Write a letter to the State Treasury Department explaining thoughts on how to apprehend counterfeiters.

Speech/History/Technology: Use an electronic encyclopedia to look up changes in money in the US in the last 200 years. Present the information to the class in a unique presentation.

## VIDEO AVAILABLE FROM

*Nova: Secrets of Making Money* can be taped off-air. Consult your local PBS station for broadcast schedule. This video may also be purchased for \$19.95 plus \$3.95 for Shipping and Handling, from

WGBG Video

P.O. Box 2284-9040,

South Burlington, VT 05407-2284

phone 1-800-255-9424 x 9040 or

FAX 1-802-864-9846 Dept. 9040

# " WE' RE IN THE MONEY "

NAME \_\_\_\_\_

## OPEN BOOK QUIZ ON THE DOLLAR BILL

1. What is the serial number on your dollar bill? Why do you think it appears twice?
2. What president is pictured on the bill?
3. In what year was your bill printed?
4. Who was the Treasurer of the United State at the time your bill was printed?
5. Who was the Secretary of the United States Treasury?
6. How many times does the word "one" or the number "1" appear on your bill as designation of the bill's worth?
7. What is the name of the Federal Reserve Bank from which your bill originates?
8. What is the stated purpose of your dollar bill?
9. Look at the black circle with jagged edges on the front of your bill: What letter is inside the circle? What do you think the significance of this letter might be?
10. Look at the large circle on the left-hand side on the back of the dollar bill: What are the Latin words appearing above and below the pyramid? What do the words mean? What is the significance of the eye above the pyramid?
11. What are the Roman numerals below the pyramid? What is the Arabic numeral equivalent? What is the significance of this number?
12. What is the significance of the eagle appearing in the circle on the right-hand side of the front of the dollar?
13. What phrase is written under the circle on the left-hand side and continued under the circle on the right?
14. Write down as many things as you can think of that you can purchase with a dollar or less.

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## MONEY MONEY MONEY MONEY

1. Which company supplies the paper? \_\_\_\_\_

Since what year? \_\_\_\_\_

2. What could not change with the money? \_\_\_\_\_

3. Bills are made from \_\_\_\_\_ and \_\_\_\_\_.

4. What two colors of fibers are added? \_\_\_\_\_ and \_\_\_\_\_

5. Raised notes means? \_\_\_\_\_

6. \_\_\_\_\_ prevent someone from bleaching a bill and raising its denomination

7. How thick is the security thread? \_\_\_\_\_

8. What is the sole purpose for changing the design of the \$100.00? \_\_\_\_\_

9. \_\_\_\_\_ makes his own money art?

10. Why are they keeping Ben Franklin? \_\_\_\_\_

11. What does the engraver carve into? \_\_\_\_\_

12. What is micro printed in Franklin's collar? \_\_\_\_\_

13. What is on the right side of Franklin? \_\_\_\_\_

How can you see the watermark? \_\_\_\_\_

14. What is a Hologram? \_\_\_\_\_

15. How can a hologram be damaged? \_\_\_\_\_

16. What was used instead of the hologram? \_\_\_\_\_

17. What are the four security features on the new \$100?

A. \_\_\_\_\_

B. \_\_\_\_\_

C. \_\_\_\_\_

D. \_\_\_\_\_

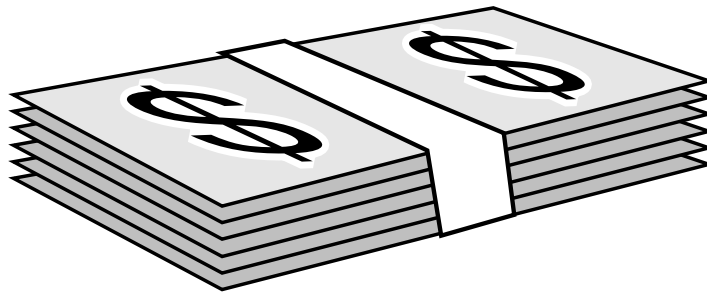
18. Is the new \$100 safe from being counterfeited? Why or why not?

19. List all of the different ways for saying money.



## BUDGET VOCABULARY

- **BUDGET** - plan for spending and saving your income
- **INCOME** - all of the money you earn
- **SALARY** - fixed amount an employee is paid, usually yearly
- **WAGES** - hourly pay for an employee



- **FIXED EXPENSES** - expenses you have every month (utilities, gas, food, rent)
- **LOAN** - money borrowed from a bank to be repaid gradually
- **FLEXIBLE EXPENSES** - expenses that change from month to month (entertainment, clothes, furniture)

# " WE' RE IN THE MONEY "

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## HOW MUCH MONEY DOES IT TAKE TO SURVIVE?

Here is the scenario – You are 18 years old and are finally on your own. You must move away from home, rent a place to live, buy furniture, buy a mode of transportation, and get a job that an 18 year-old with no experience could have.

1. Look in the newspaper to locate all of the items on the “Moving Out” worksheet that have\*\*\*\*\*.
2. Put the money amounts on the lines next to the items and then add up your totals for each section.
3. For all of the expenses that do not have a star, (utilities, phone, cable, gasoline, insurance, food, etc.) ask your parents for these dollar amounts to get a better idea of how much you'll spend each month.
4. Finally, because your parents love you so much they are going to give you \$1,500 as a “going away” present to help you get settled in your new surroundings!
5. Happy house and job hunting and get to work!

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## MOVING OUT

### I. INCOME

\*\*\*\*\*Job income \$ \_\_\_\_\_/month

**Total Income** \$ \_\_\_\_\_/month

### II. FIXED EXPENSES

\*\*\*\*\*Rent \$ \_\_\_\_\_/month

Gas \_\_\_\_\_ Electric \_\_\_\_\_ Garbage \_\_\_\_\_ Water \_\_\_\_\_ Sewer \_\_\_\_\_

Total Utilities \$ \_\_\_\_\_/month

Phone \$ \_\_\_\_\_/month

Cable \$ \_\_\_\_\_/month

\*\*\*\*\*Car Payment \$ \_\_\_\_\_/month

Car Insurance \$ \_\_\_\_\_/month

Gasoline \$ \_\_\_\_\_/month

Food \$ \_\_\_\_\_/month

**Total Fixed Expenses** \$ \_\_\_\_\_/month

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## III. FLEXIBLE EXPENSES

\*\*\*\*\*Couch \$ \_\_\_\_\_/month

\*\*\*\*\*Bed \$ \_\_\_\_\_/month

\*\*\*\*\*Chairs \$ \_\_\_\_\_/month

\*\*\*\*\*TV/Stereo \$ \_\_\_\_\_/month

\*\*\*\*\*Microwave \$ \_\_\_\_\_/month

Entertainment \$ \_\_\_\_\_/month

Clothes \$ \_\_\_\_\_/month

\*\*\*\*\*Other \$ \_\_\_\_\_/month

**Total Flexible Expenses** \$ \_\_\_\_\_/month

**TOTAL INCOME** \$ \_\_\_\_\_/month

Subtract

**TOTAL FIXED AND FLEXIBLE EXPENSES** \$ \_\_\_\_\_/month

**TOTAL LEFTOVERS** \$ \_\_\_\_\_/month

