



Pardon Me. Do You Have exChange for a Dollar?

Npt Educational
Services

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TEACHERS

LESSON TITLE **Pardon me.
Do You Have exChange for a Dollar?**

GRADE LEVELS This lesson targets students in grades 5 – 8, but can be adapted to other grade levels.

TIME ALLOTMENT This lesson will take five 45-minute class sessions to complete.

OVERVIEW Students are all too familiar with United States currency – dollars and cents. But when asked to compare it with currency of another country, students are usually unable to do so. In this lesson, students will explore currencies of various countries using the Internet, video, and hands-on activities. They will convert United States currency to foreign currency and vice versa using algebraic formulas created by the student.

SUBJECT MATTER Mathematics and Social Studies

LEARNING OBJECTIVES Students will be able to:

- Use multiplication and division skills with decimals to convert foreign currency.
- Write and solve algebraic expressions.
- Multiply and divide whole numbers and decimals.
- Apply computation skills to solve problems.
- Read and round numbers to the nearest thousandth place.

STANDARDS **NATIONAL STANDARDS**
National Council for Teachers of Mathematics web site
<http://standards.nctm.org>
Mathematics - Students will:
Work with decimals to solve problems.
Select appropriate methods and tools for computing with decimals.
Solve problems that arise in math and in other contexts.



Use algebraic concepts to represent and solve problems.
Evaluate algebraic expressions and formulas for given values of the variable using technology and pencil/paper.
Give place value for each digit for decimal numerals
Round a decimal to a specified place.
Evaluate expressions involving multiplication and division of whole numbers.

Social Studies -

From the National Council for Social Studies web site

[Http://www.ncss.org/standards/teachers/standards.html](http://www.ncss.org/standards/teachers/standards.html)

Work independently and cooperatively within groups to accomplish goals.

Understand the role of specialization and exchange in economic processes.

MEDIA COMPONENTS

VIDEO

ITV Series

Eddie Files: "Fake Money Caper" #204

Mathemedia: "Decimals" #2

TECHNOLOGY TOOLS

Access to spreadsheet

Calculators

WEB SITES

Universal Currency Converter

<http://www.xe.com/ucc/>

This site contains a universal currency converter that lists all major currencies and countries.

World Paper Money Homepage

<http://aes.iupui.edu/rwise>

This site contains visuals of over banknote links and over 7,000 bank notes. There is at least one bank note example for all current banknote-producing countries, some examples going back to the 1700's.

AAnotes

<http://www.aanotes.com>

Foreign bank notes from all over the world can be purchased on this site. The banknotes used in this lesson were purchased here.

History of Money

<http://woodrow.mpls.frb.fed.us/econed/curric/history.html>

This Federal Reserve site provides pictures of coins, such as Lydian coins, Greek Drachma, and paper money.

MATERIALS PER CLASS: World map, Chart Tablet, Spreadsheet program

PER COOPERATIVE GROUP: (4 or 5 students)

Magazines and/or newspaper circulars with prices for culminating activity, supplies for student made money (stickers, markers, paper, rulers, scissors, glue, tape), dollar bills, Foreign currency/bank notes (These can be ordered on-line or shown to students via the web-site <http://aes.iupui.edu/rwise>), chart paper

**PREP FOR
TEACHERS**

Bookmark web site for use with the students.

Preview all videos and set to appropriate starting points.

Gain access to foreign currency either by purchasing it on-line or printing it off of the Internet.

Find daily exchange rates for foreign currencies either via the Internet or newspaper

Gain access to a spreadsheet. (A handout is provided if spreadsheet application is unavailable.)

Prepare student materials for use with the creating money activity and the culminating activity.

**INTRODUCTORY
ACTIVITY:
SETTING THE
STAGE**

Step 1. The following activity will familiarize students with the idea of trading or exchanging goods and service without use of money. Give students a card that lists an occupation and a service or good this occupation can provide. The following are a list of possible occupations and services or goods each provide. Modify these to fit the needs of your class.

Teacher – tutoring service

Preacher –preaching service

Carpenter – building service

Cook - cooked meals

Farmer – vegetables

Tailor – clothes

Mother – handmade dolls

Shoemaker – shoes

Blacksmith - metal

Tanner – leather

Woodcutter – lumber

Candle maker – candles

Store owner – “help wanted” sign in his window

Postman – provide travel

Mill worker – flour

Bee Keeper – wax

Doctor – medical services

Dentist – dental services

Have students tape their cards to their shirts where others will be able to see them. Without talking, students walk around the room observing the other goods and services that are available. On the “How can we help each other” handout, they are to write 5 of the goods or services that would benefit them and explain how. They must also explain how their service, or goods, would benefit the other person.

Step 2. Discuss several of the student exchanges and the benefits to involved parties. Then, discuss the difference between a single exchange and the complications of multiple exchanges using this example: *“You catch fish for your food supply, but you're tired of eating it every day. Instead you want to eat some bread. Fortunately, a baker lives next door. Trading the baker some fish for bread is an example of barter, the direct exchange of one good for another. However, barter is difficult when you try to trade with someone that doesn't want what you have. How do you get shoes if the shoemaker doesn't like fish? Brainstorm possible solutions to the problem. The series of trades required to obtain shoes could be complicated and time consuming.*

Step 3. Use the “5 Steps to a Shoemaker” handout to create an in-class flowchart that shows the pathway between multiple trades. For example, how would you trade from a Candle Maker to a Shoemaker?

Step 4. Lead students to the understanding that there has not always been paper currency or coins. Ask students to search their memories to compare and contrast the currency of past and present. What are other items people have used to trade over the years? (possible answers: seashells, beads, tea, fishhooks, fur, cattle and even tobacco.) What do we do now instead of having to trade items? (We use money.)

Step 5. Has the currency of money always been dollars and cents like we use now? Show students the History of Money web site to show examples of past coinage such as Lydian coins from 700 BC and Greek Drachma from 400 BC.

<http://woodrow.mpls.frb.feb.us/econed/curric/history.html>

LEARNING ACTIVITIES

Step 1. Students will design their own money using the provided materials. They are to name the money (Example in America it is the dollar, in Mexico the peso, etc.) and give it a value. Students can share this with the class. (See sample money design).

Step 2. Pass out examples of paper currency from different countries for student groups to inspect. Let students discuss their findings in small groups. Pass out American dollar bills for students to compare and contrast to their group's foreign currency. Write similarities and differences on chart board. When student(s) describe their money, have them identify the country represented by the currency. Use a spreadsheet to display the information. If a spreadsheet is not available, students may fill out the provided currency/country handout. TEACHER NOTE: Foreign bank notes can be purchased on-line or you can use a web site to show the students the various foreign bank notes.

Step 3. Remind students that in our money system, we use dollars and coins. Ask them to explain the relationship between dollars and "cents." (The "cents" or change is a fraction of a dollar.) Draw some relationships together. For example: What fraction of a dollar is 25¢? ($\frac{1}{4}$) How is this written as a decimal? (.25) What fraction of a dollar is 10¢? ($\frac{1}{10}$) How is this written as a decimal? (.1 or .10) What fraction of a dollar is 67¢? ($\frac{67}{100}$) How is this written as a decimal? (.67)

Step 4. Write \$28.17 on the board. Identify the place value of each number. (2 is in tens place, 8 is in ones place, 1 is in tenths place, and 7 is in the hundredths place) Add numbers in the decimal places up to ten -thousandths place so that there are four digits to right of the decimal. (28.1749) Identify the value of each digit. (2 has a value of 20, the 8 has a value of 8, the 1 has a value of one-tenths (.1), the 7 has a value of seven-hundredths (.07), the 4 has a value of four-thousandths, and the 9 has a value of nine ten-thousandths)

Step 5. Ask students why we need money and when we use money. Accept all reasonable responses. Each student should receive a copy of the "Video Focus Questions" handout. Explain that they will be watching a few short video clips and will be asked to answer the questions asked at the appropriate times. Explain to students that in the video Eddie Files, Miss Tolliver (a.k.a. Miss T) will be "selling" some supplies to her students. **PROVIDE STUDENTS WITH A FOCUS FOR MEDIA INTERACTION** by asking them to identify the items Miss T is selling and be able to explain how her students will be allowed to purchase the items. Students will record responses on the handout.

Step 6. **BEGIN** Eddie Files: “Fake Money Caper” #204 after the audio of Eddie saying, “So Miss T opened her store so we could shop for school supplies.” The visual is Miss T lifting a black tablecloth off of a table in her classroom. **PAUSE** to elicit responses after Eddie says, “To buy the supplies she gave us some money.” Ask students what some of the items were that Miss T was selling. (She was selling school supplies: paper, glue, pictures, stars, markers, stickers) Ask students what Miss T is giving the students to buy the school supplies. (money)

Step 7. **PROVIDE STUDENTS WITH A FOCUS FOR MEDIA INTERACTION** for the next portion of the video by asking them to identify what kind of money Miss T gives the students and if there is any thing unusual about the money. They are to answer their question “With what kind of money are they going to buy the items?” on their handout. **RESUME** video. **PAUSE** the video to check for comprehension when Miss T says, “Can you buy in my store?” Ask students what kinds of money or different forms of currency Miss T gave her students. (Shillings, marks, yen, pesos, pounds) Continue to use the spreadsheet started early to display the currency and country. **REWIND** and **REPLAY** to validate student responses.

Step 8. **PROVIDE STUDENTS WITH A FOCUS FOR MEDIA INTERACTION** by asking them to watch the same section of video for a third time to identify the countries associated with the different currencies. Students are to write their responses to the “Money from where. . . ?” on their question sheet. **REWIND** and **REPLAY**. **STOP** and remove the video after Miss T says, “Can you buy in my store?” Ask students to identify the different countries associated with the different forms of currency. (shillings, Kenya; marks, Germany; yen, Japan; pesos, Mexico; pounds, England). Fill in this information on the spreadsheet. Ask students if they are familiar with any other forms of foreign currency. Include these additions on the spreadsheet, as well.

Step 9. Miss T asked if her students could buy in her store. Ask students to address this question and explain their answers. (They will have to exchange their foreign currency with American currency) To elicit critical thinking and as a prompt to the next student activity, solicit student responses to the following questions. What does it mean to exchange currency? How do we know we will not be cheated out of getting a fair amount? Where can we go to exchange our money?

Step 10. Explain to students that in the next video, they will be introduced to other currencies. **PROVIDE STUDENTS WITH A FOCUS FOR MEDIA INTERACTION** by asking them to listen and look for currency that we have yet not listed on our spreadsheet. Students are to answer the question “Any other countries?” on their handout. **BEGIN Mathemedia:** “Decimals” #2 at the beginning with the segment entitled “Let’s Trade.” The visual is of traders on Wall Street. **PAUSE** after the audio of “If you’ve ever traveled to other countries” to solicit information. Ask the students to identify any other countries and currencies to add to the spreadsheet. (Denmark – Kron, India – Rupee, Israel – shekel, France – franc, Italy – lira) **REWIND** and **REPLAY**, if necessary.

Step 11. Ask students to listen for the price of the car in the next segment of the video. Ask them to also identify the country and currency associated with the purchase. Students are to answer the question “How about that car?” on their handout. **RESUME** video. **PAUSE** to elicit responses when the audio is: “Sounds expensive doesn’t it?” Ask students what country and currency was discussed (Japanese Yen) and the price of the car (1,614,750 Yen). Add Japan and Yen to the spreadsheet.

Step 12. **PROVIDE STUDENTS WITH A FOCUS FOR MEDIA INTERACTION** by asking them to use the next video segment to help them define “exchange rate.” They can write the definition beside the word DEFINE on their handout. **RESUME** video and **PAUSE** to check for comprehension after the definition of exchange rate is given. Ask students to define exchange rate. (The difference in the value of two currencies)

Step 13. Ask students to watch and listen carefully to the next video segment so they will be able to tell you how many yen are in one dollar and how many dollars are in one yen. Ask students to be able to express cost of the car in dollars. Students are to fill in the following parts of the handout: 1 dollar = ?, 1 yen = _____ dollar, and “The car cost . . . **RESUME** video and **STOP** after the audio is: “A fairly inexpensive car.” Ask the students how many yen are in one dollar. (1 dollar = 107.65 yen). Ask the students how many dollars are in one yen. (1 yen = less than one cent). Ask the students the cost of the car in dollars (The cost of the car is about \$15,000). Tell students to remember the cost information because they will need it soon.

Step 14. Describe the relationship between yen and the dollar. It takes 107.65 yen to equal 1 dollar. Or, if you were to trade one dollar for 107.65 yen it would be a fair trade. Write this

equivalency on the board: 1 dollar = 107.65 yen.

Step 15. Give students the “Convert This!” handout. Students will be making conversions between foreign currency and US currency, and vice versa. Students will be asked to define D write a formula, and solve for Y. Students will make conversions in the US Dollar to Yen chart. For example, if 107.65 yen are traded for 1 dollar then how many yen would you receive for 2 dollars? (215.3 Yen) How many yen would you receive for 3 dollars? (322.95) (NOTE: Throughout the lesson, students will round their answers to the nearest thousandths place.) Refer back to the video, how many US Dollars did the car cost? (\$15,000). How many yen will this be at this exchange? (1,614,750 Yen). Continue to fill in the conversion chart with the students.

Step 16. **PROVIDE STUDENTS WITH A FOCUS FOR MEDIA INTERACTION** by asking them to use the on-line currency converter (<http://www.xe.com/ucc/>) to exchange US Dollars for Shillings. (If the Internet is not available, make the current exchange rates available for the students.) The formula and conversion will depend on the daily exchange rate. Emphasize that bankers must use the exchange rate for **that day** to solve for their Y. After doing the first conversion from US Dollars to Shillings, allow students to use their calculators to make the conversions if they do not have access to the Internet. Have students round their answers to the nearest thousandths place value. Ask students which answer would be more accurate and why: rounding to the tenths place or to the thousandths place.

(**Teacher Note:** The exchange rates for currencies change daily. It might be beneficial to have students chart exchange rates for at least a week prior to this activity. Exchange rates for 5 days for each currency used in the activity are provided as examples.)

Step 17. **INSERT Eddie Files:** "Fake Money Caper" #204. Ask students to remember Eddie from the earlier video. Explain that in the next video clip, Uncle Johnny gives Eddie money. **PROVIDE STUDENTS WITH A FOCUS FOR MEDIA INTERACTION** by asking them to identify the type and quantity of currency received. They are to answer the question “What did Johnny give Eddie?” on their handout. **START** video at audio of Johnny saying, “Speaking of money Eddie, I delivered a package today to the Italian embassy.” The visual

is a giant fan blowing in Johnny's garage. **STOP** video after the audio cue "Hey! Why don't you keep these for your files, you being a hero and all?" Ask students to tell you what type of money Eddie received and how much it was worth. (Two 2,000 Lira bill worth about \$1.25 each= \$2.50.)

Step 18. Have students add these amounts to the "Convert This!" Chart. They will again need to use the on-line currency converter (<http://www.xe.com/ucc/>) to find a current exchange rate. Round again to the thousandth place. Again, discuss how rounding affects accuracy. NOTE: The conversions may not be exactly as in the video due to the varying daily exchange rates. Have the students complete "Convert This!" after locating the current exchange rate for British Pounds. They may use their calculators. Round currency conversions to the thousandth place.

Step 19. When students are finished, have several items displayed on the table with correct prices in US Dollars posted in front of each item. Each student will receive a copy of the "Conversion Super Store" handout. Students are to predict the correct price of each item. The sheet gives the possible prices in various currencies. They are to hold onto this sheet until they complete their next task.

Step 20. Assign each group (of 2 or 4 students) to one foreign currency. They are to take the prices of the items on the table and convert it into the group's currency. Each group should receive a copy of the "Conversions Super Store II" sheet. They will need to use the on-line currency converter (<http://www.xe.com/ucc/>) again to find the daily exchange rate, or rates, provided by the teacher. Students should write the formula they used to find the new price of the items and round answers to the thousandths place. When student groups are finished, students will need to post their findings on a piece of chart paper and place it on the wall for other students to use as a reference.

The following are only a partial list of countries and their currencies.

Japan – Yen

Germany – Marks

France – Francs

Mexico – Pesos

Greece – Drachma

India- Rupees

Israel – Shekels (New Sheqalim)

England (Great Britain) – Pounds

Finland – Markkaa

Kenya – Shillings

CULMINATING ACTIVITY

Step 21. Using the provided web site list, have student groups answer questions about their currency on the “A Little Currency Information” handout. Student presentations are at the teacher’s discretion.

Students are to create a sales catalogue for their country using newspaper circulars and magazines. They are to cut out pictures of the items, or draw the items, and write both the price of the item in US Dollars as well as in the foreign exchange amount.

CROSS- CURRICULAR EXTENSIONS

Science

Study the science behind counterfeiting. The chemistry involved includes the mixing of certain colors to obtain a bill that appears black when looked at in one direction and green when looked at in another.

Art

Design a billboard to advertise one or two catalogue items or complete a papermaking activity.

Language Arts

Discuss various propaganda techniques in advertising such as bandwagon, persuasive, testimonials, etc. Depict each in the above advertising campaign.

Write a story about a day without money.

Explain the meaning of one of the attached money quotes.

Social Studies

Research the history of one form of currency.

Create a map that depicts all of the countries that use one form of currency.

Compare and contrast American and Canadian currencies.

Research what makes something “legal tender”.

Math

Cook a dish that is native to one country. Determine the cost of the meal in that country’s currency.

Measure the diameter, circumference, area, or perimeter of the currencies of different countries.

Discuss metric measurement of other countries.

Create a line graph of a particular country’s currency rate over a two-week period of time.

COMMUNITY CONNECTIONS

Invite an ESL family into your class to discuss the currency of their country and the possible difficulties in learning a new money system.

Visit a bank or invite a banker into the classroom to discuss how changing exchange rate affect the stock market.

Invite a numismatist (coin collector) into the classroom to show and explain their collection.

Invite a detective into your classroom to discuss counterfeiting in your community.

STUDENT MATERIALS

How Can We Help Each Other?

Occupation _____

Good or service _____

After looking at the other occupations and services or goods, list 5 services or goods you could use. Then tell why your service or good would be a benefit to the person with whom you will be trading.

Services I can use:

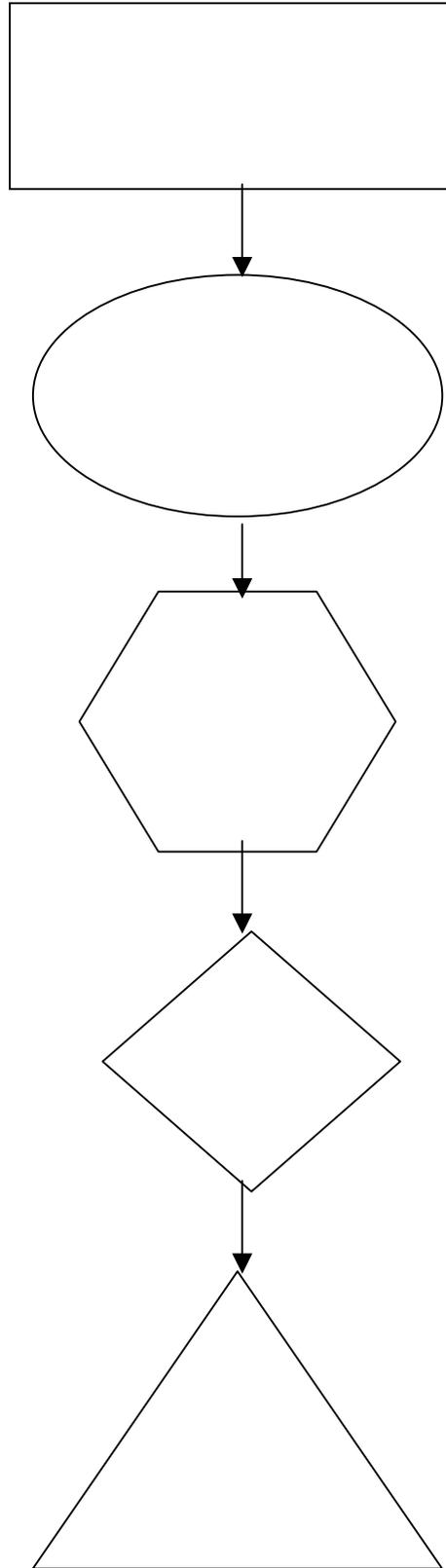
- 1.
- 2.
- 3.
- 4.
- 5.

My service would benefit them because:

Sample of Student Currency



5 Steps to a Shoemaker



Video Focus Questions:

What's for sale?

With what kind of money are they going to buy the items?

Money from where?

Any other countries?

How about that car?

DEFINE:

1 dollar = _____ = 1 yen

The car costs _____.

What did Johnny give Eddie?

CONVERT

THIS!

<u>American Dollar</u> (D)	<u>Conversion Formula</u> D x 107.65	<u>Yen</u> (Y)
1	1 x 107.65	107.65
2	__ x 107.65	215.3
3		

<u>American Dollar</u> (D)	<u>Conversion Formula</u>	<u>Shillings</u> (Y)

Formula:
y=d 107.65

Fact:
1 US Dollar = _____ Yen

Formula:

Fact:
1 US Dollar = _____ Shillings

<u>Lira</u> (Y)	<u>Conversion Formula</u>	<u>American Dollar</u> (D)
2000		

<u>Pounds</u> (D)	<u>Conversion Formula</u>	<u>American Dollar</u> (D)

Formula:

Fact:
1 Lira = _____ US \$\$

Formula:

Fact:
1 Pound = _____ US \$\$

Conversion Super Store

Circle what you believe to be the correct price of each item.

1. Car \$17,395	4.87735 Marks	820,000.30 Ruppees	52,753.23 drachmae
2. Box of pencils \$0.93	115.077 Yen	30.4674 pounds	5,848.65 Francs
3. Potato mix \$2.19	50.3400 Shekels	4.87735 Marks	.788500 Shillings
4. Couch \$783	115.077 Yen	5,848.65 Francs	887.749 pesos
5. Lamp \$12	30.4674 pounds	820,000.30 Ruppees	50.3400 Shekels
6. Tennis shoes \$96.99	887.749 pesos	.788500 Shillings	40.5606 Markkaa
7. College text book \$43.50	887.749 pesos	30.4674 pounds	5,848.65 Francs
8. Gold earrings \$135.95	820,000.30 Ruppees	887.749 pesos	40.5606 Markkaa
9. Cell phone \$0.01 (special deal)	.788500 Shillings	4.87735 Marks	30.4674 pounds
10. 24-case of Coke \$5.99	40.5606 Markkaa	50.3400 Shekels	115.077 Yen

Conversion Super Store II

Determine the price of each of the following items in _____.

1 US Dollar = _____

1. Car \$17,395	
2. Box of pencils \$0.93	
3. Potato mix \$2.19	
4. Couch \$783	
5. Lamp \$12	
6. Tennis shoes \$96.99	
7. College text book \$43.50	
8. Gold earrings \$135.95	
9. Cell phone \$0.01 (special deal)	
10. 24-case of Coke \$5.99	

What formula did you use to determine the price?

Y = _____

A Little Currency Information

Name(s) _____
Country _____
Continent _____
Currency _____

Answer the following about your country's currency:

1. Has the name of the currency changed over the last several hundred years? If so, name the various currencies.
2. Why do you think currencies change names?
3. What are the most common denominations of your currency? (ex: 1, 10, 50, etc.)
4. Identify at least 5 characteristics from the front of the banknote. (people, colors, words you know, etc).
5. Identify at least 5 characteristics from the back of the banknote.
6. On the back of the paper, compare and contrast the back and front of the banknote with that of an American dollar bill.

Web-sites for currency research

JAPAN: <http://aes.iupui.edu/rwise/countries/japan.html>
GERMANY: <http://aes.iupui.edu/rwise/countries/germany.html>
FRANCE: <http://aes.iupui.edu/rwise/countries/france.html>
MEXICO: <http://aes.iupui.edu/rwise/countries/mexico.html>
GREECE: <http://aes.iupui.edu/rwise/countries/greece.html>
INDIA: <http://aes.iupui.edu/rwise/countries/india.html>
ISRAEL: <http://aes.iupui.edu/rwise/countries/israel.html>
ENGLAND: http://aes.iupui.edu/rwise/countries/great_britian.html
FINLAND: <http://aes.iupui.edu/rwise/countries/finland.html>
KENYA: <http://aes.iupui.edu/rwise/countries/kenya.html>

Five-Day Exchange Rates (1 US Dollar = __)

Country	Day 1	Day 2	Day 3	Day 4	Day 5
Japan					
Germany					
France					
Mexico					
Greece					
India					
Israel					
England					
Finland					
Kenya					

Money Quotes

Money talks but all mine ever says is goodbye. Anonymous

I inherited my ability from both of my parents: my mother's ability for spending money and my father's ability for not making it. – Anonymous

Death pays all debts.

I have all the money I'll ever need if I die by 4 today. – Henny Youngman

Envy never enriched any man. He is rich that he has few wants.

Money is the key that opens all doors.

It is not the employer who pays the wages. Employers only handle the money. It is the customer who pays the wages. – Henry Ford

Those who have some means think that the most important thing in the world is love. The poor know that it is money. – Gerald Brenan

Money burns a hole in the pocket.

A candidate is a person who gets money from the rich and votes from the poor to protect them from each other.

If women didn't exist, all the money in the world would have no meaning. – Aristotle

Remember that time is money. – Ben Franklin Money gone, friends gone.

Money is like a sixth sense, without which you cannot make a complete use of the other five.
– W. Somerset Maugham

All I ask for is the opportunity to prove that money doesn't buy happiness.

A man is usually more careful of his money than he is of his principles. –Edgar Watson Howe

A liberal is a man who is willing to spend somebody else's money. – Carter Glass

Money is the barometer of a society's virtue. – Ayn Rand

There was a time when a fool and his money were soon parted, but now it happens to everybody.
– Adlai E. Stevenson

If you do anything just for the money, you don't succeed. – Barry Hearn

Money is the most egalitarian force in society. It confers power on whoever holds it. - Roger Starr

No horse goes as fast as the money you bet on him. – Anonymous

Money is like manure. You have to spread it around or it smells. – J. Paul Getty

No man is rich enough to buy back his past. – Oscar Wilde

It is easier to get money than to keep it. The abundance of money ruins youth.

Money may kindle, but it cannot buy itself, and for very long, burn. –Igor Stravinski