

LEVELED BOOK • Z<sup>2</sup>

# Money, Money, Money

MULTI  
LEVEL  
X•Z<sup>1</sup>•Z<sup>2</sup>

Written by Lisa Ing

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## Focus Question

How has money changed over time?

## Words to Know

barter  
bullion  
circulation  
coinage  
counterfeit  
currency  
denomination  
dichroic  
encoded

fiat money  
hyperinflation  
incised  
intrinsically  
malleable  
mint  
mutilated  
oxidizes  
viable

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Money is worth much more than the paper it's printed on.

## Introduction

An ordinary piece of paper isn't worth much at all, but a piece of paper money can be worth several thousand dollars. A check can be worth millions. Each printed bill is worth much more than the paper it's printed on. But why? Where did money come from, what makes money so valuable, and why do people want it?

Money is valuable because the people who make and use it agree on its determined value. The government that issues it, the engraving agency that designs it, the **mint** that strikes or prints it, the banks that hold it, and the people who buy and sell things with it all agree that the money they accept is worth a specific amount.

The history of money is the fascinating story of how people who traded valuable objects began to trade items that represented their valuables. The story also explains how technology creates “invisible money” that allows people to trade goods and services around the world without being in the same place as each other.

## Bartering

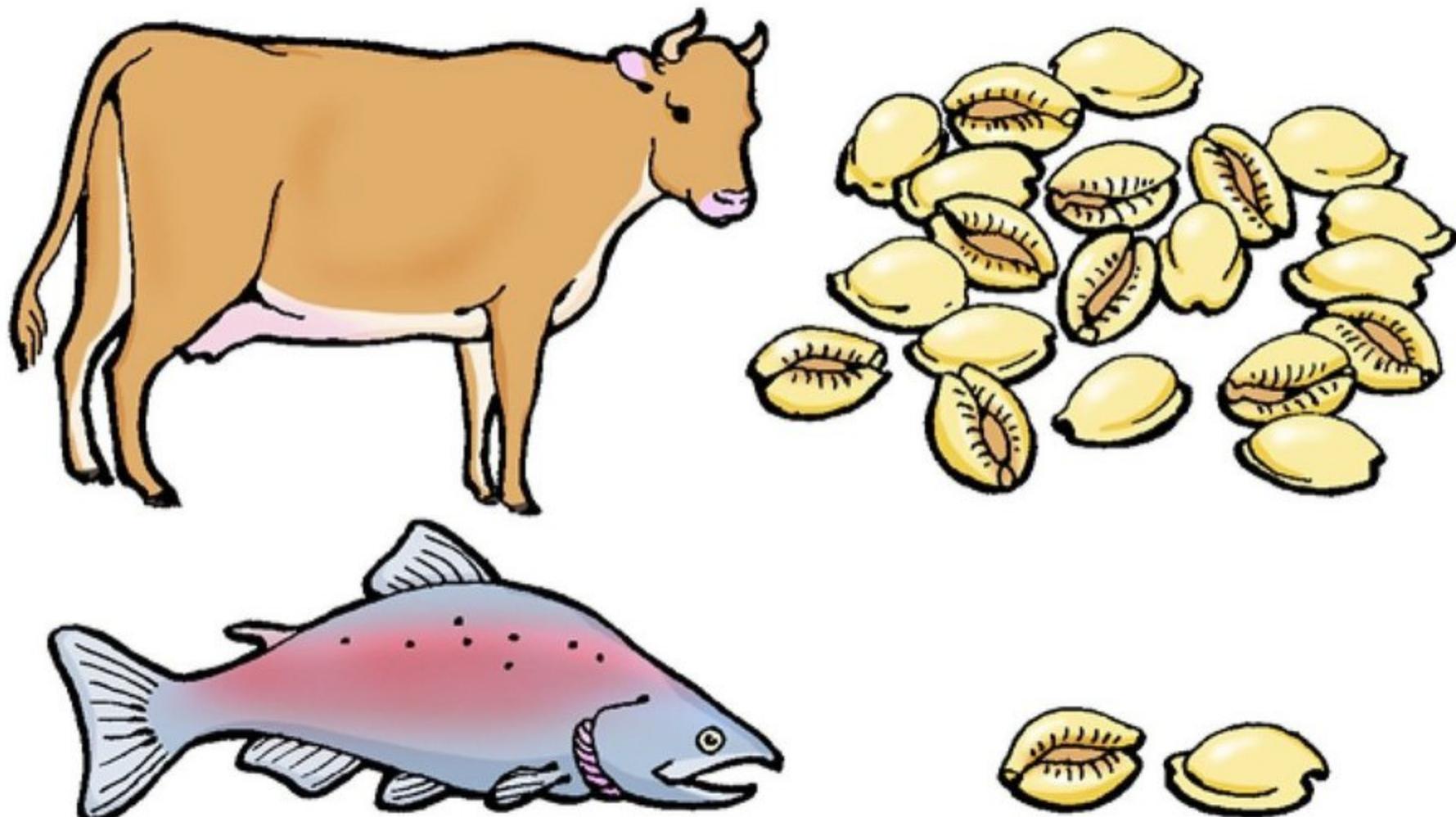
Several thousand years ago, people used to **barter** in order to get what they didn't have or couldn't make. People living near the ocean had fish, salt, and shells, which they traded with people living near the mountains who had fruits, wood, and furs. People still barter with each other today. If you trade an apple from your lunch for the candy bar in someone else's lunch, you are bartering.

However, there are several problems with bartering because not everyone has the same wants or needs. You might want some goods or valuable objects from someone, but they might not want the goods that you have, or vice versa. Additionally, many items are heavy, hard to carry, or don't last long. Figuring out how many of one item equals a certain number of another item can be difficult. It can also be difficult to determine the value of raw materials versus that of finished

goods. Is a stack of logs worth the same amount as the table and chairs made from those logs?

Bartering allowed people to trade for products they could not get on their own.





Currency allowed people to trade objects without carrying them around.

## Currency

To solve the problems of bartering, people invented **currency**—objects that represented certain values. For example, a group of people might agree that a cow was worth twenty shells and a large fish was worth two shells. People could trade goods for currency and vice versa as long as everyone in the transaction agreed upon the value of the currency being traded.

Each culture around the world chose a different type of currency to represent the value of its goods. The objects people used were usually light enough to carry, but rare enough that people couldn't just pick them up off the ground. The rarer the item used for currency and the more work it took to find it, the more valuable people decided it was.

Some of the items used as currency in ancient times were bright or colorful stones, striped or spotted shells, particular leaves, certain birds' feathers, lumps of silver and gold, salt, honey, bread, spices, and gems or pieces of glass. In ancient Rome, a soldier's salary was paid in bags of salt. From Africa to Asia, people traded with rare speckled shells that were only found on a few islands in the Indian Ocean. The ancient Egyptian government paid its workforce in quantities of honey and bread. Some Native Americans used wampum—beads made from clam shells—to trade and make treaties. Other Native Americans used eagle feathers. The Chinese used bundles of tea leaves, and European colonists in North America used tobacco leaves as their currency.

The problem with currency of this type was that it was hard to decide how much a particular object was worth. If one shell was much larger than another shell, shouldn't it be worth more? Did the different stripes or dots on the shells mean something different? And what if you met somebody who didn't think your shells were worth anything at all? For trade to be **viable**, both parties had to want what the other had and agree on its value.



These ancient coins were stamped with the king's picture.

## Coins

One solution to the problems of using ordinary objects as currency was to create coins out of precious metals. Precious metals, especially gold, silver, and copper, are rare and valuable across many cultures, and they are easier to shape and weigh than shells or feathers. Metals are heavier than shells and feathers but last longer and don't readily react with the elements, although copper **oxidizes** when exposed to extreme moisture. These metals are chosen for **coinage** because they are **malleable** and durable.

The first coins were minted, or produced, 2,600 years ago in Sardis, Lydia, now part of Turkey. Some of these coins had the head of a lion on them and were called *trites*. From Lydia, coins

quickly spread into the neighboring countries of Persia (now known as Iran) and Greece. The earliest coins were struck or cast in a natural combination of gold and silver called *electrum*. These coins were very rough and crude, with no patterns on the sides or standard sizes and weights. Later, coins were made from pure metals such as copper, silver, and gold. Mixed metals such as bronze, an alloy of copper and tin, were also used for coinage. The coins had standard weights, and the ruler's seal was stamped on one side to confirm the coin's quality.



These Greek coins had words, a picture of an owl, and a portrait of the goddess Athena.

In addition, to stop people from shaving the edges of coins to collect enough metal to make more coins, ridges were **incised** on the outer edges. This technique made it easier to determine when coins had been altered.

Early European coins usually had a god's head or symbol on one side and a seal from the maker on the other. Later coins pictured the heads of rulers on one side and elaborate symbols of the empire on the other. These pictures helped establish when, where, and by whom the coins were made. Even today, you can see the faces of presidents, kings, and queens on modern coins, and sometimes even the particular mint where the coins were struck.

The Chinese made coins by melting copper and pouring it into molds. This process is called *casting*. Chinese coins were cast with square holes in the centers, so that thousands could be carried on a ribbon or stick. Instead of pictures, the Chinese coins, called *cash*, had words telling their worth, or **denomination**. The Chinese also made coins using bronze, silver, or gold. Only the government could produce coins.



Chinese cash could be held on a string or stick for easy carrying.

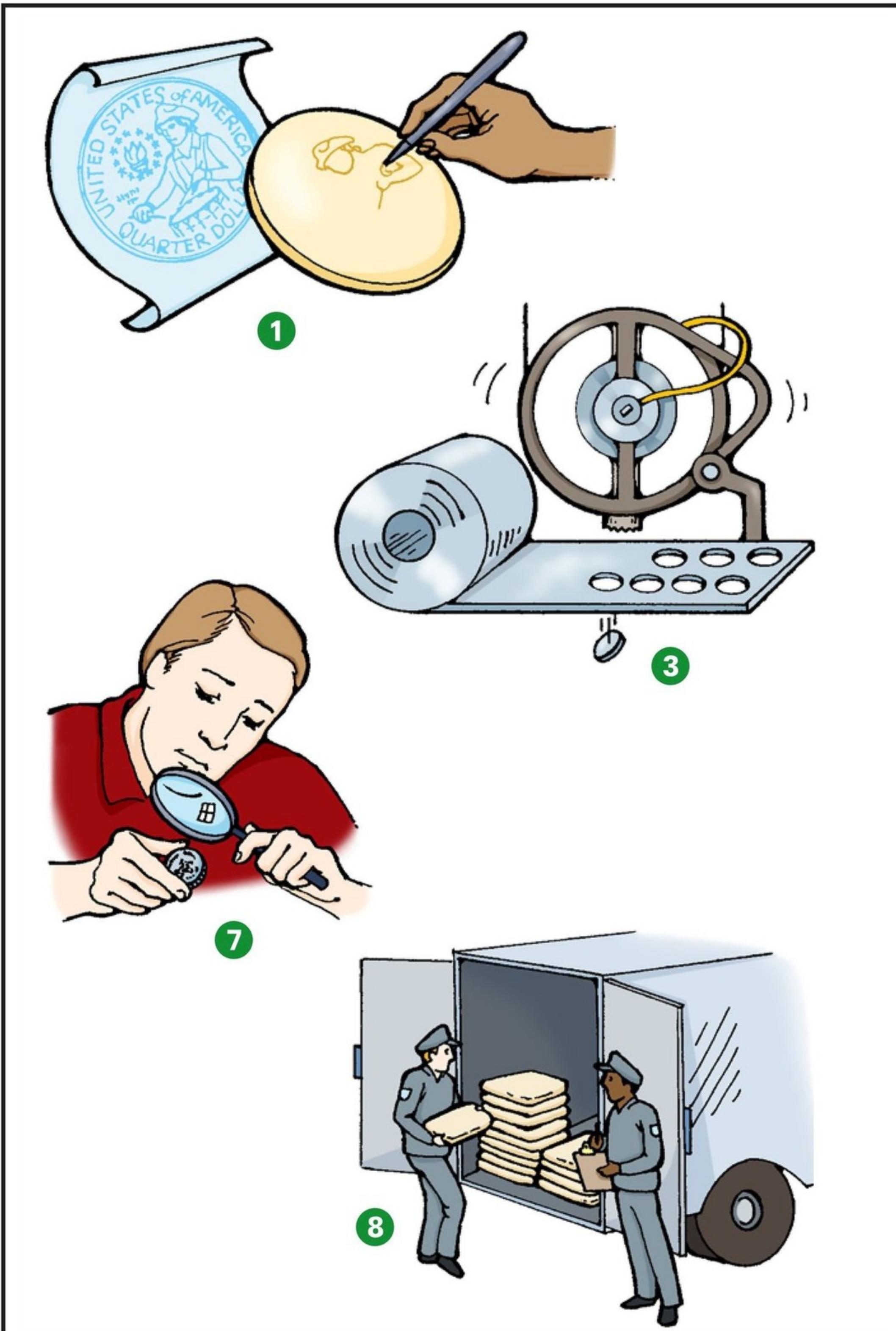
## Paper Money

A Chinese man named Ts'ai Lun invented paper 1,900 years ago. But it wasn't used for money until 700 years later when the Chinese government began to print paper money. The earliest paper money was created using a woodcut printing method. The specific designs and denominations were drawn on wooden blocks, and the background was carved away. Then the block was covered with ink and pressed onto uniformly sized rectangles of paper. Red and black inks were used, and the seals of the issuing banks were applied to parts of the bills. The officials who issued the currency put their names and seals on them. Although coins were still available, the lighter paper money quickly became more popular. The Chinese called it *flying cash* because it could blow away in a breeze.

In Europe, another invention changed the shape and widespread usage of currency. Johannes Gutenberg invented the movable-type printing

press in the mid-1400s. This press, which used metal type blocks, transferred images onto paper faster and better than the much older wooden-block presses. Gutenberg's press allowed people to print paper money by machine rather than by hand.





# Minting Coins

Coins are harder to make than you might think. Once the government decides to produce new coins, these are just some of the steps that must happen.

- 1 A designer draws a picture of the coin's two sides on a large piece of paper.
- 2 Sculptors make a large, three-dimensional model of the coin. An engraving machine uses the model to make a die, or coin stamp. The die is sent to mints, or factories that produce coins.
- 3 Mints cut blank coins, called *blanks*, from a rolled-up sheet of the right kind of metal. The sheet can be as long as five football fields.
- 4 The blanks are heated, cooled, washed, and dried.
- 5 A machine called an *upsetting mill* creates the raised edge of the coin.
- 6 The coin press stamps the pattern from the die into the coin.
- 7 Inspectors make sure that there are no mistakes in the coin. Incorrectly made coins get melted down and recycled.
- 8 The coins are sent out to banks in armored trucks.



Banks used to keep bars of gold that represented the sum of everyone's money.

## The Value of Money

Unlike metallic coinage, paper money is worth little by itself, mainly because people agree that metal is worth more than paper and ink. It costs only four U.S. cents to print a bill, including the cost of the paper, ink, and the printer's pay. So why is one bill worth a hundred dollars while another is worth only one?

The simple answer is that the government says so. In 1900, the U.S. Congress passed the Gold Standard Act requiring that for each dollar in **circulation**, there was one dollar's worth of gold

in a bank. The U.S. government used specific collection facilities, including the **bullion** depositories at Fort Knox, Kentucky, and West Point, New York, to store the nation's gold. Other collection facilities under the United States Mint are the Philadelphia Mint, the Denver Mint, and the San Francisco Assay Office.

Most countries have not participated in the gold standard since 1971. There is simply too much currency needed in circulation. The bills represent more wealth, goods, and valuables than there is gold in the world. Britain officially stopped using the gold standard in 1931, and the United States stopped forty years later. Today, governments keep track of how many goods and resources there are in a country and circulate enough currency to represent those goods and resources. Depending on how many goods and resources a country produces and how successful its businesses are, the value of a country's money can rise or fall compared to other countries' currencies. This is called a *floating currency system*. The currencies themselves are called **fiat money** because they are **intrinsically** worthless and are used only as a method of exchange. Those currencies have only the values that their issuing governments say they have.

## Keeping Money Real

Many agree that only governments can create currency because they keep track of the actual goods and resources that the currency represents. Governments usually collect **mutilated** bills and replace them with new bills to keep the correct ratio between the amount of currency in circulation and the country's gross domestic product (GDP)—the amount of finished goods and services available within a country. Sometimes governments print more currency than their GDP can support, which results in **hyperinflation**. During periods of hyperinflation, prices can more than triple in a single day.

But what if people try to produce money on their own? Fake money, called **counterfeit**, isn't worth anything because it isn't backed up by goods or resources and is not created by a government. Banks, stores, restaurants, and other companies do not allow anyone to use counterfeit money. Worse, having counterfeit money in circulation devalues the genuine currency in circulation—if there is fake money around, how do you know whether or not your money is real?

In order to defeat counterfeiters, most countries make their currency using special hard-to-copy techniques. Since 1879, the paper for all U.S.

currency has been made by one company, Crane & Co., in Dalton, Massachusetts. Bills are printed on paper that is made using a secret formula. U.S. dollars are made of a mixture of about one-quarter linen and three-quarters cotton, with some red and blue silk fibers sprinkled throughout. However, the Bureau of Engraving and Printing (BEP) keeps the exact formula a secret, the way Coca-Cola protects the secret recipe for its famous soda pop. A special thread below the portrait glows in ultraviolet, or “black,” light. The ink on genuine bills is slightly raised so you can feel it when you run your finger over the printing. Raised printing is called *intaglio* (in-TAL-ee-o) printing, from the Italian word meaning “to cut,” because the image is cut into the background of the printing plate. Banks and some stores use special pens with ink that turns from black to yellow on real cotton and linen bills, but stays black on fake bills copied on cellulose, or wood-based, paper.

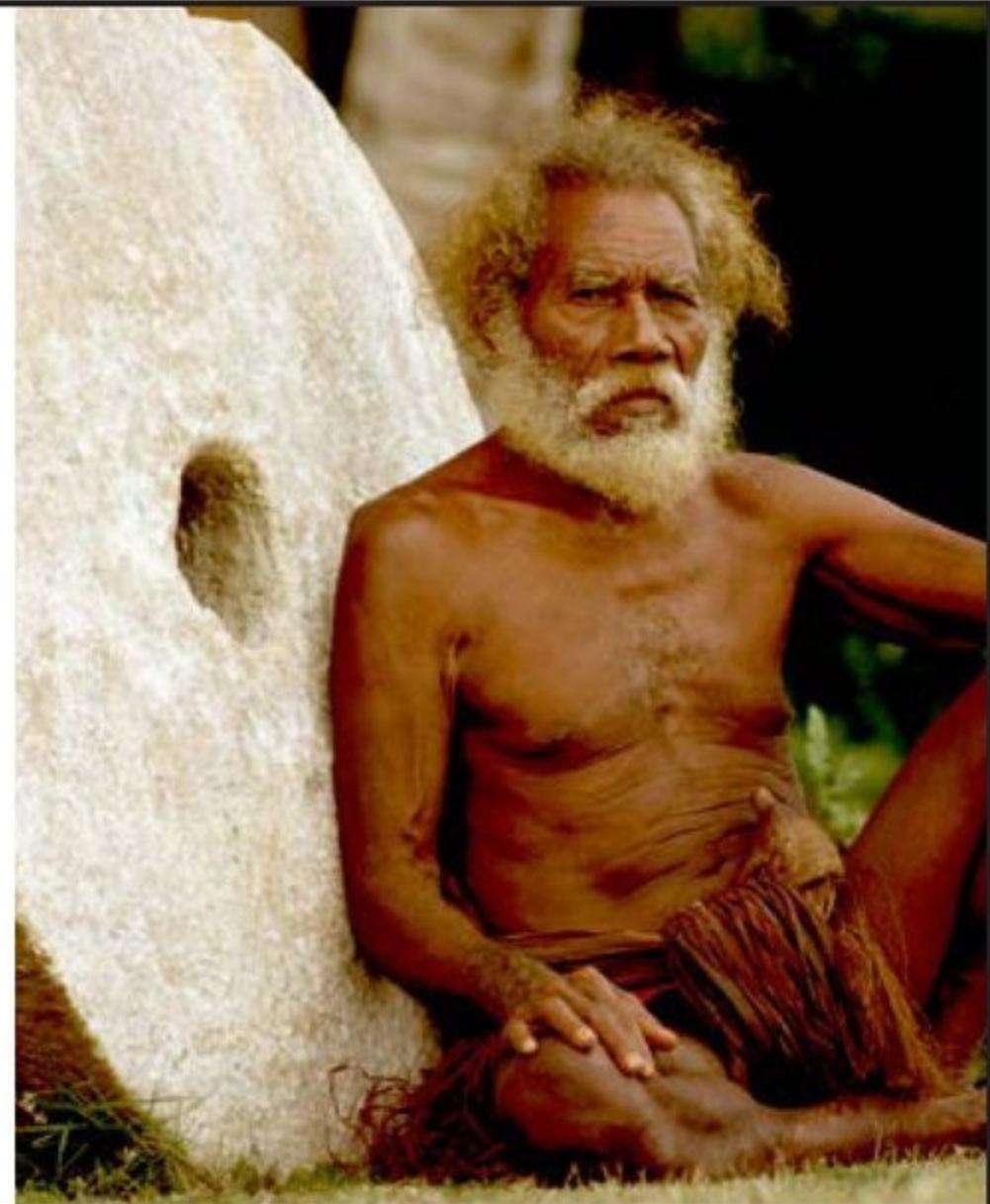
## Do You Know?

It can be a bother to change currency every time you travel from one country to another. Most of Europe's nations have joined together to form the European Union. Many of them standardized their money so that the euro is worth the same amount in each nation. Each country mints euros. The tail side of the euro has a picture that symbolizes the country that made it.



## Do You Know?

The biggest currency in the world is used by the Yap Islanders, who live on an equatorial island near Indonesia. They make coins of giant stones that weigh as much as full-grown Asian elephants. The stones have holes in them, and the Yap Islanders move the stones by putting sticks through the holes and rolling the coins.



The pictures and print on bills are designed to prevent easy copying. The portrait is large and detailed, placed slightly off-center, and made of fine dashed lines. The patterns on the bill are small and complicated; they are difficult to see and even more difficult to reproduce. Each bill has a serial number that appears twice on the face of the bill, showing when and where it was printed.

In addition, many bills are printed with various ink colors, magnetic inks, and **dichroic** inks that change color depending on the angle you look at them. Just as the paper has a special formula, the ink formulas are kept secret by the government. Some bills have holograms or watermarks that reveal other images only when you hold the bills up to a light source.

## Invisible Money: Checks and Credit Cards

Most adults have a checking account. Banks keep track of how much money a person has in his or her account. When the person writes checks—official notes that stand for a certain amount—the bank reduces the total in the person's account by that same amount. Checks can represent a large amount of money on a single piece of paper. Many checking accounts are connected to debit cards that people can use to take cash from their accounts at automatic teller machines (ATMs) or pay for things at shops and restaurants.

Credit cards work like debit cards and checking accounts except that instead of drawing from their deposit accounts, people borrow money from the bank. People can use credit cards to buy items that cost more than they have saved in the bank. Then, when they pay back the money, they have to pay an additional fee called *interest*. If someone takes a long time to pay back the money, the interest can accumulate into larger amounts. It can become expensive if you regularly borrow on a credit card and don't pay off the balance in a relatively short period of time.

Debit and credit cards are made of durable plastic. The person's name and an individually

assigned number are stamped onto one side, along with the name of the bank that issued the account. A magnetic strip across the back has special **encoded** information about the person's bank account. Newer debit and credit cards have microchip technology, called *radio frequency identification* (RFID) chips, embedded into the cards. These chips carry personal information about the cardholder's account in addition to what is on the magnetic strips. When the card is swiped through a card-reading machine, the machine electronically contacts the bank to verify that the account has enough money or enough available credit. If the money or credit is there, the money is withdrawn from the person's account and deposited into the store's, restaurant's, or company's account. It is easier to carry around one piece of plastic than it is to carry many bills. Since cards have the account holder's name and information on them, the money is harder to steal than bills are. Credit and debit cards make a person's money more secure. If the cards are lost or stolen, a phone call to the bank can cancel them and new cards can be issued. That system is impossible with cash.



Debit and credit cards

However, credit cards can be dangerous because people forget that they must pay back the money they borrowed. Many people who use credit cards irresponsibly owe so much money to the banks that the banks take back, or repossess, the things the person bought. If that happens, a negative note is made on the person's credit history, and he or she may not be able to borrow again for a long time.

Plastic cards are less visible than money, but they can buy the same goods. Our invisible money allows us to trade with people around the world. With the help of catalogs and the Internet, people can use credit cards to buy goods from a person or company in another country. The money is automatically changed into a currency the other person can use.

Shopping online with a credit card can instantly send money across oceans.



## Conclusion

Three thousand years ago, people bartered to trade goods or services with each other. Today, people trade with each other using bills, coins, checks, and even invisible money such as debit and credit cards. What sort of money do you think we'll have in another three thousand years?



At a stock market, people buy and sell stock, or pieces of companies. Stock costs more or less depending on the value of the company. But until the stock is sold, the money in it is not real.

## Glossary

<b>barter</b> ( <i>v.</i> )	to exchange goods or services without using money (p. 5)
<b>bullion</b> ( <i>n.</i> )	bars of gold, silver, or another metal not yet made into coins (p. 15)
<b>circulation</b> ( <i>n.</i> )	the condition of being in use and passed from person to person (p. 14)
<b>coinage</b> ( <i>n.</i> )	money in coin form; the process of making coins (p. 8)
<b>counterfeit</b> ( <i>n.</i> )	a copy of something, especially money, that is made to look like the real thing (p. 16)
<b>currency</b> ( <i>n.</i> )	money, in any acceptable form, used to represent the value of goods and resources (p. 6)
<b>denomination</b> ( <i>n.</i> )	the face value of a type of currency (p. 10)
<b>dichroic</b> ( <i>adj.</i> )	showing different colors from reflected or transmitted light; displaying color-changing properties (p. 18)

<b>encoded</b> ( <i>adj.</i> )	communicated in a special code (p. 20)
<b>fiat money</b> ( <i>n.</i> )	paper currency that cannot be traded for coins or has no value except that determined by the issuing government (p. 15)
<b>hyperinflation</b> ( <i>n.</i> )	a general price increase occurring at a high rate over a short period of time (p. 16)
<b>incised</b> ( <i>v.</i> )	cut a surface to leave marks or decorations (p. 9)
<b>intrinsically</b> ( <i>adv.</i> )	in a natural or essential way; inherently (p. 15)
<b>malleable</b> ( <i>adj.</i> )	able to be shaped or changed by stretching, bending, or pounding (p. 8)
<b>mint</b> ( <i>n.</i> )	a facility where coins are made (p. 4)
<b>mutilated</b> ( <i>adj.</i> )	badly damaged (p. 16)
<b>oxidizes</b> ( <i>v.</i> )	combines with oxygen and creates a chemical change, such as rust (p. 8)
<b>viable</b> ( <i>adj.</i> )	able to be done, used, or completed successfully (p. 7)

# Money, Money, Money

A Reading A-Z Level Z2 Leveled Book

Word Count: 2,635



## Connections

### Writing

Write a report summarizing the different forms of money that have been used throughout history.

### Social Studies

Research one historical figure or landmark depicted on money. Create a trading card for the figure or landmark with a picture and label on the front and at least five fun facts on the back.



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