

Kindergarten Coins

Intended for Grade: Kindergarten

Subject: Math

Description: This project introduces the four major coins currently circulating in the United States (Penny, Nickel, Dime, and Quarter).

Objective: The student will be able to recognize and identify, and manipulate the four most commonly circulated U.S. coins.

Mississippi Frameworks addressed:

- Math Framework 4a - Collect data, model, and construct graphs using real objects
- Math Framework 4b - Interpret and analyze data in graphical form (e.g. bar graphs, pictographs)
- Math Framework 5d - Sort and name coins by physical characteristics (Penny, Nickel, Dime).
- Math Framework 6a - Count and model a set of objects 0 to 10 (or greater).
- Math Framework 6b - Count forward and backward 1 to 10 (or greater)
- Math Framework 6f - Apply mathematical language by telling when a certain number is "too many", "not enough", "just right", "more than", "less than", or "equal to" for a given situation.
- Math Framework 6g - Introduce fraction terms and concepts including fraction, whole, all, part, some, none.

National Standards addressed:

- Math Standard: Data Analysis and Probability
- Math Standard: Measurement
- Math Standard: Number and Operations

Materials:

- Large blow-up pictures of the 4 major coins (Penny, Nickel, Dime, Quarter)
- Worksheets (found at end of this document): *Coin Contents*, *Coin Connections*, *Coin Labelling*, *Coin Counting*, *Coin Toss Recording*, and *Coin Toss Graphing*
- Toy plastic coins (for sorting, identifying, counting)
- Boxes (for sorting coins into)
- Coin toss recording sheet (found at end of document)
- Coin toss graphing sheet (found at end of document)

Background:

The United States Mint has existed almost as long as the United States itself. The United States Mint was established during the Coinage Act, passed by Congress on April 2, 1792, slightly less than four years after the ratification of the Constitution of the United States of America. The Constitution grants Congress the power to establish and regulate the Mint.

The very first coins produced by the mint were silver "half Dimes" stamped from silverware which was likely donated by George and Martha Washington. The first Director of the Mint was David Rittenhouse, appointed by President George Washington. The first coins shipped by the mint were copper cents with the first shipment containing 11,178 individual cent pieces. Copper for early cents was provided by a metal company owned by Paul Revere. Although earlier in the Mint's history, all coins were produced of copper, silver, or gold, modern circulating coins contain no silver or gold and only a small amount of copper.

The four most common and best known coins in circulation are the Penny, Nickel, Dime, and Quarter. The first two, the Penny and Nickel, are officially referred to by the Mint as the Cent and Five Cent coins, respectively. The terms Penny and Nickel are unofficial and do not appear in official Mint documents. Though there are four minting facilities in the United States, only the facilities in Denver and Philadelphia currently produce coins for circulation. The other two minting facilities are in San Francisco and West Point which produce only commemorative coins.

The Penny has a value of 1/100 of a dollar, or one cent. The Penny was first produced in 1793, as a much larger coin, roughly the size of the current

half-dollar coin. Abraham Lincoln, the sixteenth president of the United States, first appeared on the Penny in 1909, and currently is still on the Penny. In 1959 the reverse of the Penny was changed to the Lincoln Memorial, and the Penny has not changed in design since then

The Nickel has a value of $\frac{1}{20}$ of a dollar, or five cents. The Nickel was first produced after the American Civil War in 1866. The Nickel went through several changes before the first commonly recognized Nickel was produced in 1913, the Buffalo or Indian Head Nickel. These were produced until 1938 when the current Nickel went into production, featuring Thomas Jefferson, the third president of the United States. The reverse of the current Nickel features a picture of Monticello, Jefferson's home in Virginia. Recently, the U. S. Mint has released several new Nickel designs, including two new reverse sides in 2004, which are part of the "Westward Journey" series, commemorating the journey of Lewis and Clark and the Louisiana Purchase. In 2005, the Mint released an additional Westward Journey Nickel, this time featuring the Pacific Ocean, and the words "Ocean in view! O! The joy!", words taken from William Clark's diary, recorded when he reached the west coast. The mint also released an updated, modern profile of Jefferson which is used on a new Buffalo Nickel, featuring Jefferson on the front, and an American Bison on the reverse.

The Dime has a value of $\frac{1}{10}$ of a dollar, or ten cents. The Dime was first produced in 1796. In 1837 the size of the Dime was reduced to 17.9 millimeters, the current size. The Dime has always been a small coin, due to the fact that it was originally composed primarily of silver. The Dime is the only coin produced by the U. S. Mint without either the word "dollar" or "cent" on it. This, combined with the small size, often makes those unfamiliar with the Dime to assume it has a smaller value than the other coins. The word Dime (originally spelled "disme") comes from the French *dixième* meaning one tenth. Franklin Roosevelt, the thirty-second president, first appeared on the Dime in 1946, partly to commemorate his work with the "March of Dimes" campaign to fight polio. The reverse of the Roosevelt Nickel features a torch, an olive branch, and an oak branch, which symbolize liberty, peace, and strength and independence.

The Quarter has a value of $\frac{1}{4}$ dollar or twenty-five cents. The Quarter was first produced in 1796. Since 1932, the Quarter has featured George Washington, the first president of the United States. The reverse features an eagle. In 1999, the Mint unveiled its new statehood Quarters program. Until 2009, the mint is releasing 5 new Quarter designs every

year, one for each state, in the order that the states joined the United States. The new Quarters feature a design specific to each state on the back and the traditional Washington profile on the front. The first statehood Quarter released was Delaware. Mississippi's statehood Quarter was released on October 15, 2002, to commemorate Mississippi's statehood beginning in December 10, 1817. The Quarter is currently the largest denomination coin enjoying widespread use in the United States. The Quarter has ridges or "reeds" on the side, which were originally added to deter "shaving" of the edges in an attempt to retrieve precious metal from the coins. In modern times, the ridges act as an aid to the blind to help distinguish between Quarters and the one dollar Sacagawea coins

Know Your Coins

Procedure:

1. Explain that coins are parts of a dollar.
2. Display a blow-up picture of one of the four coins. Ask the students if they can identify the name of the coin.
3. Ask the students if they know how much the coin is worth, or if they know how many of the coin are required to equal one dollar.
4. Give a basic history of the coin, and explain what is on the front and reverse of the coin. Ask and explain how to identify the specific coin.
5. Repeat steps 2 through 4 for the other coins.
6. Ask how to tell the difference between the coins.
7. Using terms such as "more than" and "less than", help the students rank the coins from least to most valuable. (Penny, Nickel, Dime, Quarter)
8. Give each student several toy Quarters, Dimes, Nickels, and Pennies.
9. Ask the students to take one of each of the coins.
10. Ask them to place them in order from least valuable to most valuable.
11. Specifically, clarify that despite being the smallest, the Dime is not the least valuable.
12. Ask the students to count the total number of coins they have. Have the student record this number on the Coin Contents worksheet.
13. Give each student a container with four compartments (or four small, separate containers). The compartments should be labeled "1¢", "5¢", "10¢", and "25¢".

- 14.** Ask the students to separate the coins by value into the correct boxes.
- 15.** Ask the students to count how many coins are in each compartment. Ask the student to record these numbers on the *Coin Contents* worksheet.
- 16.** Give the students the *Coin Counting* worksheet and have them complete it.
- 17.** Collect boxes of sorted coins.
- 18.** Provide additional background information (other coins, history, materials) as time permits.
- 19.** Complete the *Coin Connections* worksheet. This sheet asks the student to match the value and name of the coins to their pictures. This sheet is simple and leads into the other well.
- 20.** Using the *Coin Labelling* worksheet, have the students provide the names and values of the coins.

Coin toss

Procedure:

- 1.** Break the students into three or four groups. Preferably, have at least one helper per group.
- 2.** For each group, have a real quarter. Hand the quarter to one student in the group.
- 3.** Have the student flip the coin.
- 4.** Have all the students in the group record whether the coin landed on heads or tails on the Coin Toss Recording sheet.
- 5.** Pass the coin to the next student.
- 6.** Repeat steps 3 through 5 a total of ten times.
- 7.** Count the number of times the coin landed on heads and the number of times it landed on tails.
- 8.** Draw a bar graph to illustrate the results using the Coin Toss Graphing sheet.

Evaluation:

Students should be able to identify the four major coins when questioned. Additionally, students should be able to identify the relative values (from least to greatest) of the four coins. The worksheets act as further evaluation tools.

Extended Activities:

To learn about the state Quarter program, students may be given cutouts of the state Quarters and asked to place them on a map of the United States on the appropriate states. Alternatively, the Quarters may already be attached to the appropriate states, but with the states cut out. The objective would be to place the states in order to reconstruct the map. If such an activity is too time consuming, it may be wise to limit the states to those along the Mississippi River, placing them to complete an otherwise correct United States map.

To incorporate technology, have the students count coins using a calculator. They may either count only the number of coins, or actually sum the values of the coins. Alternatively, the students can use a cash register to handle the coins.

Toward the end of this document, a page containing coin sequencing cards can be found. It can be printed out (and colored), and the coins can be cut out and sorted by value. This sheet came from Enchanted Learning (see sources).

The last four pages of this document are a coloring book. The images were taken from Enchanted Learning (see sources).

Sources:

http://en.wikipedia.org/wiki/United_States_coinage

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[http://en.wikipedia.org/wiki/Dime_\(U.S._coin\)](http://en.wikipedia.org/wiki/Dime_(U.S._coin))

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<http://www.enchantedlearning.com/math/money/coins/>

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Name: _____

Coin Contents

Instructions:

Write down how many of each type of coin you have.

Total number of coins: _____



Penny



Nickel



Dimes



Quarter

Name: _____

Coin Connections

Instructions:

Draw a line from each coin to its value and its name.

5 Cents



Dime

25 Cents



Penny

10 Cents



Quarter

1 Cent











Nickel

Name: _____

Coin Labelling

Instructions:

For each of the following, write the name and value of the coin.

Name		Value
→		←
→		←
→		←
→	 	←
→	 	←

Word Bank (Names)

- Dime
- Quarter
- Penny
- Nickel

Word Bank (Values)

- 10 Cents
- 5 Cents
- 25 Cents
- 1 Cent

Name: _____

Coin Counting

Instructions:

In the blanks provided, write how many Pennies are in the group.











Name: _____

Coin Toss Recording

Instructions:

Flip the coin ten times. For each flip, write HEADS or TAILS on the correct blank.

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

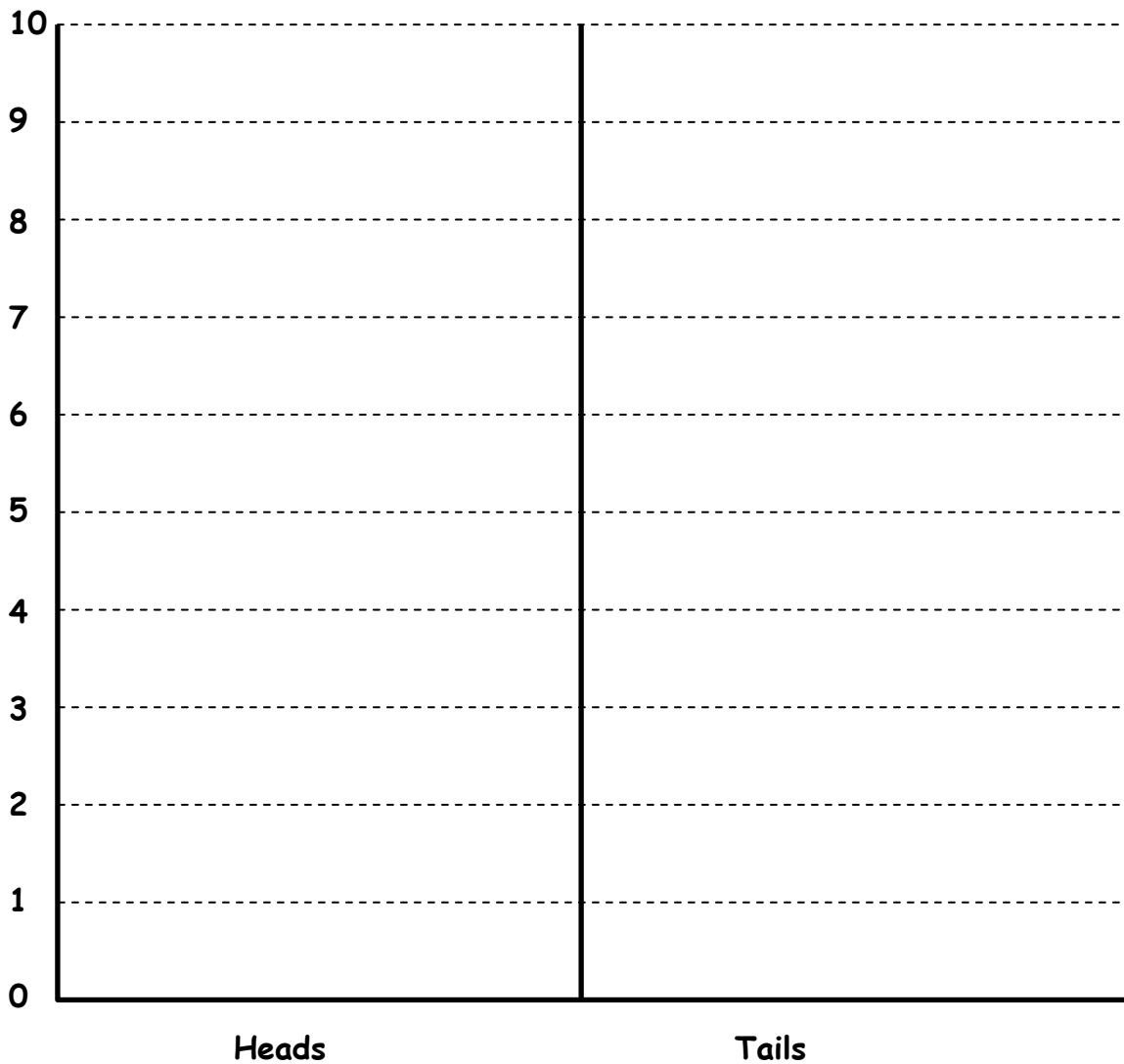
10 _____

Name: _____

Coin Toss Graphing

Instructions:

Create a bar graph to show the number of heads and tails that occurred when flipping the coin.



Dime



Nickel



Quarter



Penny



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The front of the penny pictures a right-facing profile of Abraham Lincoln, the 16th President of the United States of America.

The front reads, "IN GOD WE TRUST," "LIBERTY," and the year the coin was minted. The small initial under the date is the mint mark, denoting the location of the US mint that produced the coin (D means Denver, Colorado, S means San Francisco, California, and P means Philadelphia, Pennsylvania).

The back of the penny pictures the Lincoln Memorial, a monument to Abraham Lincoln located in Washington, D.C. If you look closely at a real penny, you can see a tiny picture of Lincoln sitting inside the Lincoln Memorial.

The back reads, "UNITED STATES OF AMERICA," "ONE CENT," and "E PLURIBUS UNUM" (which means, "Out of many, one"). This design was adopted in 1959, replacing one that pictured two stalks of wheat.



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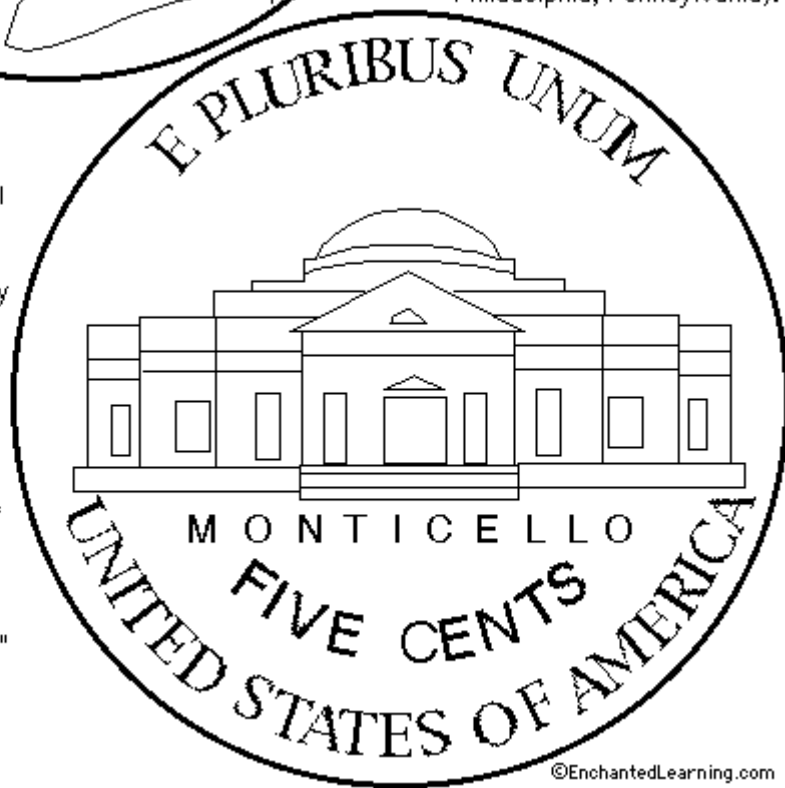


The front of the nickel pictures a left-facing profile of Thomas Jefferson, the third President of the United States of America and the principal author of the Declaration of Independence.

The front reads, "IN GOD WE TRUST," "LIBERTY," and the year the coin was minted. The small initial after the date is the mint mark, denoting the location of the US mint that produced the coin (D means Denver, Colorado, S means San Francisco, California, and P means Philadelphia, Pennsylvania).

The back of the nickel pictures Monticello, Jefferson's house (which was designed by Jefferson himself), located in Virginia, USA.

The back reads, "E PLURIBUS UNUM" (which means, "Out of many, one"), "MONTICELLO," "FIVE CENTS," and "UNITED STATES OF AMERICA."



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The front of the dime pictures a left-facing profile of Franklin Delano Roosevelt, the only four-term President of the United States of America. This coin was minted the year after the death of President Roosevelt; it was designed by John Ray Sinnock, the US Mint's Chief Engraver at the time.

The front reads, "LIBERTY," "IN GOD WE TRUST," and the year the coin was minted. The small initial over the date is the mint mark, denoting the location of the US mint that produced the coin (D means Denver, Colorado, S means San Francisco, California, and P means Philadelphia, Pennsylvania).

The back of the dime pictures a torch with an olive branch to the left and an oak branch to the right.

The back reads, "UNITED STATES OF AMERICA," "E PLURIBUS UNUM" (which means, "Out of many, one"), and "ONE DIME."



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The front (obverse) of the quarter pictures a left-facing profile of George Washington, the first President of the United States of America. This coin was minted in 1932; it was designed by John Flannagan.

The front reads, "LIBERTY," "IN GOD WE TRUST," and the year the coin was minted. The small initial by Washington is the mint mark, denoting the location of the US mint that produced the coin (D means Denver, Colorado, S means San Francisco, California, and P means Philadelphia, Pennsylvania).

The back (reverse) of the quarter used to picture the presidential coat of arms (an eagle with outstretched wings).

The back reads, "UNITED STATES OF AMERICA," "E PLURIBUS UNUM" (which means, "Out of many, one"), and "QUARTER DOLLAR."



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