Art of Multiplication

Coin Rubbing

x1 x5 x10 +25

FREE SAMPLE

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Hello Teachers,

Thank you for downloading this handout. After decades of teaching, now I'm sharing activities I designed for my classes and some new ones as well.

Please visit UnCommon-Core.com. While you are there, sign up for your free copy of **Colorful Collections:** *A Mindful Exploration of Proper Fractions.*

In addition to **Colorful Collections**, you will receive a Wednesday morning email with teacher tips, educational ideas, or a free version of whatever I'm working on at the moment. You get to use it for free, and I benefit from your questions and comments.

Also, visit my Teachers Pay Teachers store Uncommon-Core dot com.

Thank you again. All the best,

Isabelle

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Activity Ideas

Make rubbings of many items with texture to get used to the process. ask art teacher for hints/support. let kids experiement with materials and techniques needed to achieve the most detail possible.

- leaves or plants
- keys, flat household items, paper clips
- textured paper, or paper cutouts
- coins, naturally
- puzzles or puzzle pieces
- combs, hair clips,
- spell name with washi tape and make a rubbing of that

Tell the specialists that your class will be talkng about money in case they want to do so also.

For each coin help students make academic (math, history, science), cultural and personal connections:

- idioms using coins: penny for your thoughts, a dime a dozen, pinching pennies, here's my two cents, turn on a dime, in for a penny; in for a pound, or don't take any wooden nickels.
- songs including the coins: pennies from heaven, Shave and a hair cut
- Why Illinois is the only state that still accepts pennies in tollbooths: hint land of Lincoln.
- costs more to produce a penny than its value!! yes really!
- what coins could buy 100 or 200 years ago
- introduce ideas of saving money
- identify personal savings goals
- relate to concepts of place value and fractions
- what is each coin made of?
- how did the coins get their names?

Extensions:

Science:

Let students weigh the coins in grams. Check the US mint website for specifictions. Then have them multiply to find the weight of 5 coins, or 10 and so on.

Invite students to measure the thickness of each type of coin. Then, use multiplication to calculate the height of 5 or 10 coins and so on.

Compare each of the above experiements with the actual data from the US mint. Have them create a mini poster (8.5 x 11 in) to convey their results.

History

Read up on pieces of eight and find out why coins have markings on their edges (no one can shave off a bit of gold). Discuss the difference between numanistic value of a coin vs. monetary value or spot price.

Discuss the names and carreers of the people whose portraits are on the coins.

Place value

Have a group of students make a chart of how many pennies equal:
1 dollar, $10, $100, $1,000 and so on! Have other groups do the same calculations with dimes, and dollar coins.

Everyday life:

Set up a 'coin shop' in your class. Let pairs of students visit, one as the one as the shop owner and the other as an assistant. The assitant picks a baggie full of coins and instructions and the two play out the scene. They may have to weigh a coin or verify its authenticity based on standards from US mint, determine its 'spot value' or numanistic value. Finally, they add the coin to the shop catalog and others can comment or question their work.

Activities

The follow pages include an introduction for each coin from pennies to quarters and activity pages that require students to multiply by the value of each coin.

Consider how you want your students to complete the activities.

- You might have them write the value by each coin and show how adding the values results in the same answer as multiplication, because multiplication is repeated addition.

- You may have them organize the images of coins into arrays to more easily see if the answers are correct.

- Another requirement you could add to the instructions would be to have your students write out the completed number sentence in English. If the number sentence says 1¢ x 25 = 25¢, then the students would write something such as; It takes twenty-five pennies to match the value of a quarter.

- While this activity is built around making rubbings of coins, you could decide to have students use stamps or stickers instead. If your students will be making rubbings of coins, let them practice on recycling pages before doing these activities.

- Tell your students what kind of information you want them to include in their descriptions. Make sure they know where to find out the type of information you want them to include.

Penny

name:

Heads:	Value:	Tails:

Description:

How many pennies are needed to trade for a nickel?
Make a rubbing of the coins to show your answer.

Nickel

name:

Heads:	Value:	Tails:

Description:

How many nickels are needed to trade for a quarter?
Make a rubbing of the coins to show your answer.

Dime

name:

Heads:	Value:	Tails:

Description:

How many dimes are needed to trade for a dollar?
Make a rubbing of the coins to show your answer.

Quarter

name:

Heads:	Value:	Tails:

Description:

How many quarters are needed to trade for a dollar?
Make a rubbing of the coins to show your answer.

Pennies

name:

1. Make rubbings of the pennies needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

$1¢ \times \square = 25¢$

Nickels

name:

1. Make rubbings of the nickels needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

$5¢ \times \square = 50¢$

Dimes

name:

1. Make rubbings of the dimes needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

$10¢ \times \square = \$0.70$

Quarters

name:

1. Make a rubbing of the quarters needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

$25¢ \times \square = \$2.00$

Pennies

name:

1. Make a rubbing of the coins needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

$1¢ \times \square = 32¢$

Nickels

name:

1. Make a rubbing of the coins needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

$5¢ \times \square = 100¢$

Dimes

name:

1. Make a rubbing of the coins needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

$10¢ \times \square = \$1.50$

Quarters

name:

1. Make a rubbing of the coins needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

25¢ x ☐ = $1.50

Answer Key

The following pages show the type of responses that students might write when describing coins or multiplication using coins. These answers will vary depending on your students and the instructions they were given.

Penny

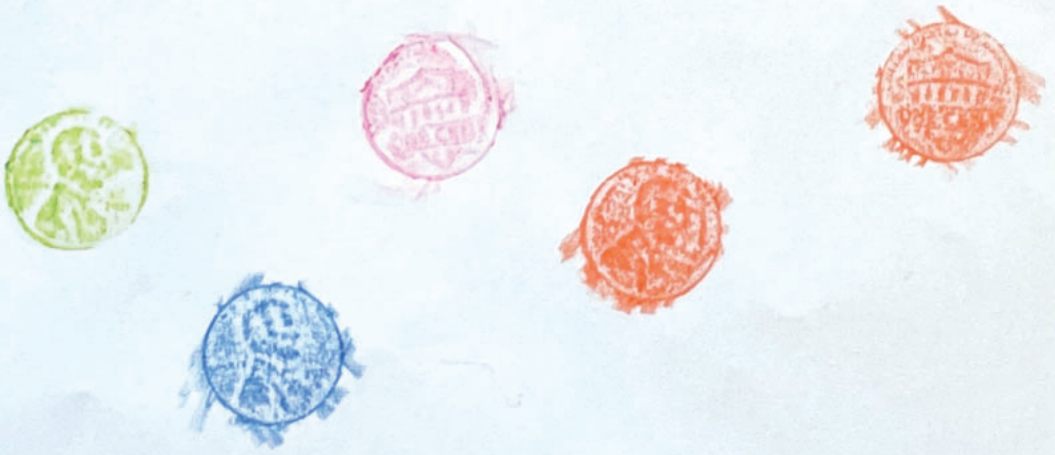
Answers

Heads:	Value:	Tails:
	1¢ $0.01	

Description:

The penny is worth one cent. There is a portrait of Abraham Lincoln on the front and a shield on the back. The shield has thirteen stripes representing the original colonies. The coin is minted out of copper plated zinc. The edge of a penny is smooth all the way around. It takes 100 pennies to make a dollar, because 100x1=100.

How many pennies are needed to trade for a nickel? 5
Make a rubbing of the coins to show your answer.



Nickel

Answers

Heads:

Value:

5¢

$0.05

Tails:

Description:

The nickel is worth five cents. There is a portrait of Thomas Jefferson on the front and an image of his home, Monticello on the back. Also on the back are the words "E PLURIBUS UNUM" which means out of many, one. The coin is made of a mix of copper and nickel. The edge of a nickel is smooth all the way around.

It takes 20 nickels to make a dollar, because 20x5=100.

How many nickels are needed to trade for a quarter? 5

Make a rubbing of the coins to show your answer.

Dime

Answers

Heads:	Value:	Tails:
	10¢ $0.10	

Description:

The dime is worth ten cents. There is a portrait of Franklin D. Roosevelt on the front. The back shows a torch for liberty, with branches from an olive tree for peace, and an oak for strength. Dimes are made of copper and nickel. There are lots of lines running around the edge. It takes 10 dimes to make a dollar, becuase 10x10=100.

How many dimes are needed to trade for a dollar? 10
Make a rubbing of the coins to show your answer.

Quarter

Answers

Heads:

Value:

25¢

$0.25

Tails:

Description:

George Washington and the word "Liberty" are on the front. The American Eagle is on the back with "Quarter dollar."

How many quarters are needed to trade for a dollar?
Make a rubbing of the coins to show your answer.

Pennies

Answers

1. Make rubbings of the pennies needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

answers will vary

1¢ x ☐ = 25¢

25 pennies

Nickels

Answer

1. Make rubbings of the nickels needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

I used different colors. Also, I made five heads and five tails.

5¢ x 10 = 50¢

Dimes

Answers

1. Make rubbings of the dimes needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

answers will vary

$10¢ \times \square = \$0.70$

7 dimes

Quarters

Answers

1. Make a rubbing of the quarters needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

answers will vary

25¢ x ☐ = $2.00

8 quarters

Pennies

Answers

1. Make a rubbing of the coins needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

answers will vary

1¢ x ☐ = 32¢

32 pennies

Nickels

Answers

1. Make a rubbing of the coins needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

answers will vary

$5¢ \times \square = 100¢$

20 nickels

Dimes

Answers

1. Make a rubbing of the coins needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

answers will vary

10¢ x ☐ = $1.50

15 dimes

Quarters

Answers

1. Make a rubbing of the coins needed to make the number sentence true.
2. Complete the number sentence.
3. Explain some of the decisions you made during this process.

answers will vary

25¢ x ☐ = $1.50

6 quarters

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