

Money and Time: math lesson, Grade 2 – download the PDF

Every time you buy a snack, save your allowance, or check what time recess starts, you are using math. In this chapter you will learn the value of each coin, count money, and read both analog and digital clocks. Let's get started!

1. Meet the coins

In the United States, money is counted in **dollars** and **cents**. The symbol for cents is ¢. You will see four coins most often.

D Coin values

A **penny** is worth 1¢. A **nickel** is worth 5¢. A **dime** is worth 10¢. A **quarter** is worth 25¢.



penny



nickel



dime



quarter



Size does not tell the value

A dime is smaller than a penny and a nickel, but it is worth more than both. Always read the value, never judge by size.

2. Counting mixed coins

When you have different coins, counting is easier if you follow a plan. Sort the coins, put the biggest value first, and keep a running total.



How to count mixed coins

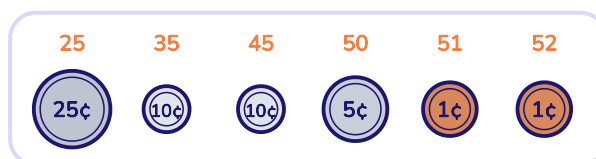
1. Sort the coins from the greatest value to the least value.
2. Count the quarters by 25s, the dimes by 10s, and the nickels by 5s.
3. Count the pennies by 1s.
4. Say the total out loud and write it with the cent sign.



Example 1

You have 1 quarter, 2 dimes, 1 nickel, and 2 pennies. Count: 25, 35, 45, 50, 51, 52.

$25 + 10 + 10 + 5 + 1 + 1 = 52$. The coins are worth 52¢.



E**Example 2**

You have 3 nickels and 4 dimes. Start with the dimes: 10, 20, 30, 40. Then count the nickels by 5s: 45, 50, 55. The total is 55¢.

!**Zyro's tip**

Zyro, the alien explorer, says: "On my planet we count stones, but on Earth you can count coins by skip counting. Say 25, 50, 75 for quarters and 10, 20, 30 for dimes!"

3. Dollar bills and cents

A dollar is worth 100 cents. A dollar bill, four quarters, ten dimes, and one hundred pennies all make the same amount.

D**Dollars and cents**

1 dollar = 100 cents. We write money with a dollar sign and a **decimal point**. The decimal point separates the dollars from the cents.



E**Example 3**

You have 135¢. Think: $135 = 100 + 35$. That is 1 dollar and 35 cents, which we write \$1.35.

Bigger bills help us count faster. A \$5 bill is worth 5 dollars, and a \$10 bill is worth 10 dollars. So 2 five-dollar bills and 1 one-dollar bill make \$11.

**Hold the place with zero**

If you have 2 dollars and 7 cents, write \$2.07, not \$2.7. There must always be two digits after the decimal point.

4. Money word problems

In a money word problem you add to find a total, or you subtract to find how much is left or how much change you get. **Change** is the money the cashier gives back when you pay with more than the price.

M**Solving a money word problem**

1. Read the problem and find the numbers.
2. Decide: do I put amounts together (add) or take away (subtract)?
3. Solve, then check that the answer makes sense.
4. Write a sentence with the unit: ¢ or \$.

E**Example 4**

Noah buys an eraser for 35¢ and a pencil for 45¢. How much does he spend?

$35 + 45 = 80$. Noah spends 80¢.

E**Example 5**

Noah pays with a one-dollar bill. How much change does he get?

$100 - 80 = 20$. Noah gets 20¢ in change.

5. Reading an analog clock

An **analog clock** has a round face with the numbers 1 to 12 and two hands. The **short hand** is the hour hand. The **long hand** is the minute hand. There are 60 minutes in 1 hour.

When the minute hand points straight up at the 12, it is an **o'clock** time. If the hour hand points to the 4, the time is 4:00, or four o'clock.

6. Telling time to five minutes

The minute hand moves around the whole clock in 60 minutes. Each number on the clock stands for 5 minutes, so you count by 5s as you go around.



Minute hand
on

1 2 3 4 5 6 7 8 9 10 11 12

Minutes

after the 5 10 15 20 25 30 35 40 45 50 55 0
hour

D Special times

When the minute hand is on the 3, it is **quarter past** the hour (15 minutes). When it is on the 6, it is **half past** the hour (30 minutes). When it is on the 9, it is 45 minutes after the hour.

E Example 6

The hour hand is between the 8 and the 9, and the minute hand points to the 8. Count by 5s to the 8: 5, 10, 15, 20, 25, 30, 35, 40. The time is 8:40.

Look at the hour hand carefully. It has not reached the next number yet, so you use the smaller hour. At 8:40 the hour is still 8.

7. Analog and digital clocks

A **digital clock** shows the time with numbers. The number before the colon is the hour. The two numbers after the colon are the minutes.



E Example 7

A digital clock shows 6:45. On an analog clock, the minute hand points to the 9 because $9 \times 5 = 45$. The hour hand is almost at the 7, but the hour is still 6.



Do not forget the zero

Five minutes after three is written 3:05, not 3:5. The minutes always use two digits.

8. a.m. and p.m.

A day has 24 hours, but a clock face shows only 12 of them. The clock goes around twice every day. We use **a.m.** and **p.m.** to tell the two trips apart.



a.m. and p.m.

a.m. means the time from midnight to just before noon. **p.m.** means the time from noon to just before midnight.

Eating breakfast at 7:30 a.m. happens in the morning. Eating dinner at 6:00 p.m. happens in the evening. Noon is 12:00 p.m., and midnight is 12:00 a.m.

Key takeaways

- Penny = 1¢, nickel = 5¢, dime = 10¢, quarter = 25¢.
- To count mixed coins, start with the greatest value and skip count.
- 100¢ = \$1. Write money with a decimal point, such as \$1.35 or \$2.07.
- In a word problem, add to find a total and subtract to find change.
- The short hand shows the hour. The long hand shows the minutes.
- Each number on the clock is 5 minutes more: count by 5s.
- a.m. is from midnight to noon. p.m. is from noon to midnight.



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