

## Accounting Equation

An accounting **transaction** is a business activity or event that causes a measurable change in the accounting equation. An exchange of cash for merchandise is a transaction. Merely placing an order for goods is not a recordable transaction because no exchange has taken place. In the coming sections, you will learn more about the different kinds of financial statements accountants generate for businesses.

In the previous section we described specific types of accounts that business activities fall into, namely:

1. Assets (what it owns)
2. Liabilities (what it owes to others)
3. Equity (the difference between assets and liabilities or what it owes to the owners)

These are the building blocks of the **basic accounting equation**. The accounting equation is:

### **ASSETS = LIABILITIES + EQUITY**

For Example: A sole proprietorship business owes \$12,000 and you, the owner personally invested \$100,000 of your own cash into the business. The assets owned by the business will then be calculated as: \$12,000 (what it owes) + \$100,000 (what you invested) = \$112,000 (what the company has in assets)

Assets	=	Liabilities	+ Equity
112,000	=	12,000	100,000

In a sole-proprietorship, equity is actually Owner's Equity. If the business in question is a corporation, equity will be held by stockholders, which uses stockholder's equity but the basic equation is the same:

### **ASSETS = LIABILITIES + EQUITY**

#### **For Example:**

A business owes \$35,000 and stockholders (investors) have invested \$115,000 by buying stock in the company. The assets owned by the business will then be calculated as: \$35,000 (what it owes) + \$115,000 (what stockholders invested) = \$150,000 (what the company has in assets)

<b>Assets</b>	<b>=</b>	<b>Liabilities</b>	<b>+ Equity</b>
150,000	=	35,000	115,000

Since each transaction affecting a business entity must be recorded in the accounting records based on a detailed account (remember, file folders and the chart of accounts from the previous section), analyzing a transaction before actually recording it is an important part of financial accounting. An error in transaction analysis could result in incorrect financial statements.

To further illustrate the analysis of transactions and their effects on the basic accounting equation, we will analyze the activities of Metro Courier, Inc., a fictitious corporation. Refer to the chart of accounts illustrated in the previous section.

### 1. Owners invested cash

Metro Courier, Inc., was organized as a corporation on January 1, the company issued shares (10,000 shares at \$3 each) of common stock for \$30,000 cash to Ron Chaney, his wife, and their son. The \$30,000 cash was deposited in the new business account.

Transaction analysis:

- The new corporation received \$30,000 cash in exchange for ownership in common stock (10,000 shares at \$3 each).
- We want to increase the asset Cash and increase the equity Common Stock.

	<b>Assets</b>	<b>Equity</b>
<b>Transaction</b>	<b>Cash</b>	<b>Common Stock</b>
1. Owner invested cash	+ 30,000	+ 30,000

Let's check the accounting equation: Assets \$30,000 = Liabilities \$0 + Equity \$30,000

### 2. Purchased equipment for cash

Metro paid \$ 5,500 cash for equipment (two computers).

Transaction analysis:

- The new corporation purchased new asset (equipment) for \$5,500 and paid cash.
- We want to increase the asset Equipment and decrease the asset Cash since we paid cash.

Transaction	Assets		Equity
	Cash	Equipment	Common Stock
1. Owner invested cash	+ 30,000		+ 30,000
2. Purchased equipment for cash	<u>- 5,500</u>	<u>+5,500</u>	
Balance:	24,500	5,500	30,000

Let's check the accounting equation: Assets \$30,000 (Cash \$24,500 + Equipment \$5,500) = Liabilities \$0 + Equity \$30,000

### 3. Purchased truck for cash

Metro paid \$ 8,500 cash for a truck.

Transaction analysis:

- The new corporation purchased new asset (truck) for \$8,500 and paid cash.
- We want to increase the asset Truck and decrease the asset cash for \$8,500.

Transaction	Assets			Equity
	Cash	Equipment	Truck	Common Stock
1. Owner invested cash	+ 30,000			<u>+ 30,000</u>
2. Purchased equipment for cash	<u>- 5,500</u>	<u>+5,500</u>		
3. Purchased truck for cash	<u>- 8,500</u>		<u>+8,500</u>	
Balance:	16,000	5,500		30,000

Let's check the accounting equation: Assets \$30,000 (Cash \$16,000 + Equipment \$5,500 + Truck \$8,500) = Liabilities \$0 + Equity \$30,000

### 4. Purchased supplies on account.

Metro purchased supplies on account from Office Lux for \$500.

Transaction analysis:

- The new corporation purchased new asset (supplies) for \$500 but will pay for them later.
- We want to increase the asset Supplies and increase what we owe with the liability Accounts Payable.

Transaction	Assets=				Liabilities+	Equity
	Cash	Supplies	Equipment	Truck	Accounts Payable	Common Stock
1. Owner invested cash	+ 30,000					<u>+ 30,000</u>
2. Purchased equipment for cash	<u>- 5,500</u>		<u>+5,500</u>			
3. Purchased truck for cash	- 8,500			<u>+8,500</u>		
4. Purchased supplies on Account.		<u>+500</u>			<u>+500</u>	
Balance:	16,000	500	5,500	8,500	500	30,000

Let's check the accounting equation: Assets \$30,500 (Cash \$16,000+ Supplies \$500 + Equipment \$5,500 + Truck \$8,500) = Liabilities \$500 + Equity \$30,000

## 5. Making a payment to creditor.

Metro issued a check to Office Lux for \$300 previously purchased supplies on account.

Transaction analysis:

- The corporation paid \$300 in cash and reduced what they owe to Office Lux.
- We want to decrease the liability Accounts Payable and decrease the asset cash since we are not buying new supplies but paying for a previous purchase.

Transaction	Assets=				Liabilities+	Equity
	Cash	Supplies	Equipment	Truck		
1. Owner invested cash	+ 30,000					<u>+ 30,000</u>
2. Purchased equipment for cash	- 5,500		<u>+5,500</u>			
3. Purchased truck for cash	- 8,500			<u>+8,500</u>		
4. Purchased supplies on Account.		<u>+500</u>			+500	
5. Making a payment to creditor	<u>-300</u>				<u>-300</u>	
Balance:	15,700	500	5,500	8,500	200	30,000

Let's check the accounting equation: Assets \$30,200 (Cash \$15,700 + Supplies \$500 + Equipment \$5,500 + Truck \$8,500) = Liabilities \$200 + Equity \$30,000

## 6. Making a payment in advance.

Metro issued a check to Rent Commerce, Inc. for \$1,800 to pay for office rent in advance for the months of February and March.

Transaction analysis (to save space we will look at the effects of each of the remaining transactions only):

- The corporation prepaid the rent for next two months making an advanced payment of \$1,800 cash.
- We will increase an asset account called Prepaid Rent (since we are paying in advance of using the rent) and decrease the asset cash.

Transaction	Assets	
	Cash	Prepaid Rent
Previous Balance	\$15,700	
6. Making a payment in advance.	<u>-1800</u>	<u>+1800</u>
Balance:	13,900	1,800

The only account balances that changed from transaction 5 are Cash and Prepaid Rent. All other account balances remain unchanged. The new accounting equation would be: Assets \$30,200 (Cash \$13,900 + Supplies \$500 + Prepaid Rent \$1,800 + Equipment \$5,500 + Truck \$8,500) = Liabilities \$200 + Equity \$30,000

## 7. Selling services for cash.

During the month of February, Metro Corporation earned a total of \$50,000 in revenue from clients who paid cash.

Transaction analysis:

- The corporation received \$50,000 in cash for services provided to clients.
- We want to increase the asset Cash and increase the revenue account Service Revenue

Transaction	Assets	Revenues
	Cash	Service Revenue
Previous Balance	\$13,900	
7. Selling service for cash	<u>-50,000</u>	<u>+50,000</u>
Balance:	\$63,900	\$50,000

Wait a minute...the accounting equation is  $ASSETS = LIABILITIES + EQUITY$  and it does not have revenue or expenses...where do they fit in? Revenue – Expenses equals **net income**. Net Income is added to Equity at the end of the period. Assets \$80,200 (Cash \$63,900 + Supplies \$500 + Prepaid Rent \$1,800 + Equipment \$5,500 + Truck \$8,500) = Liabilities \$200 + Equity \$80,000 (Common Stock \$30,000 + Net Income \$50,000). Note: This does not mean revenue and expenses are equity accounts!

## 8. Selling services on credit.

Metro Corporation earned a total of \$10,000 in service revenue from clients who will pay in 30 days.

Transaction analysis:

- Metro performed work and will receive the money in the future.
- We record this as an increase to the asset account Accounts Receivable and an increase to service revenue.

Transaction	Assets	Revenues
	Accounts Receivable	Service Revenue
Previous Balance		\$50,000
8. Selling service on credit	<u>+10,000</u>	<u>+10,000</u>
Balance:	\$10,000	\$60,000

Remember, all other account balances remain the same. The only changes are the addition of Accounts Receivable and an increase in Revenue. Assets \$90,200 (Cash \$63,900 + Accounts Receivable \$10,000 + Supplies \$500 + Prepaid Rent \$1,800 + Equipment \$5,500 + Truck \$8,500) = Liabilities \$200 + Equity \$90,000 (Common Stock \$30,000 + Net Income \$60,000).

## 9. Collecting accounts receivable.

Metro Corporation collected a total of \$5,000 on account from clients who owned money for services previously billed.

Transaction analysis:

- Metro received \$5,000 from customers for work we have already billed (not any new work).

- We want to increase the asset Cash and decrease (what we will receive later from customers) the asset Accounts Receivable.

Transaction	Assets	
	Cash	Accounts Receivable
Previous Balance	\$63,900	\$10,000
9. Collecting accounts receivable	<u>+5,000</u>	<u>-5,000</u>
Balance:	\$68,900	\$5,000

Assets \$90,200 (Cash \$68,900 + Accounts Receivable \$5,000 + Supplies \$500 + Prepaid Rent \$1,800 + Equipment \$5,500 + Truck \$8,500)= Liabilities \$200 + Equity \$90,000 (Common Stock \$30,000 + Net Income \$60,000).

## 10. Paying office salaries.

Metro Corporation paid a total of \$900 for office salaries.

Transaction analysis:

- The corporation paid \$900 to its employees.
- We will increase the expense account Salaries Expense and decrease the asset account Cash.

Transaction	Assets	Expenses
	Cash	Salary Expense
Previous Balance	\$68,900	
10. Paying office Salaries	<u>-900</u>	<u>+900</u>
Balance:	\$68,900	\$5,000

Remember, net income is calculated as Revenue – Expenses and is added to Equity. The new accounting equation would show: Assets \$89,300 (Cash \$68,000 + Accounts Receivable \$5,000 + Supplies \$500 + Prepaid Rent \$1,800 + Equipment \$5,500 + Truck \$8,500)= Liabilities \$200 + Equity \$89,100 (Common Stock \$30,000 + Net Income \$59,100 from revenue of \$60,000 – expenses \$900).

## 11. Paying utility bill.

Metro Corporation paid a total of \$1,200 for utility bill.

### Transaction analysis:

- The corporation paid \$1,200 in cash for utilities.
- We will increase the expense account Utility Expense and decrease the asset Cash.

	Assets	Expenses
Transaction	Cash	Utilities Expense
Previous Balance	\$68,900	
11. Paying utility bill	<u>-1,200</u>	<u>+1,200</u>
Balance:	\$66,800	\$1,200

The final accounting equation would be: Assets \$88,100 (Cash \$66,800 + Accounts Receivable \$5,000 + Supplies \$500 + Prepaid Rent \$1,800 + Equipment \$5,500 + Truck \$8,500) = Liabilities \$200 + Equity \$87,900 (Common Stock \$30,000 + Net Income \$57,900 from revenue of \$60,000 – salary expense \$900 – utility expense \$1,200).