Accounting Equation

Unit: Technical Skills

Problem Area: Financial Accounting and Reporting

Lesson: Accounting Equation

Student Learning Objectives.
Instruction in this lesson should result in students achieving the following objectives:

1. **Summarize asset account types and characteristics.**
2. **Summarize liability account types and characteristics.**
3. **Relate equity accounts to revenue and expenses.**
4. **Summarize the relationship between assets, liabilities, and owner's equity in the accounting equation.**

Resources.
The following resources may be useful in teaching this lesson:

E-unit(s) corresponding to this lesson plan. CAERT, Inc. http://www.mycaert.com.

"Accounting Equation," *AccountingCoach*. Accessed Jan. 9, 2016. http://www.accountingcoach.com/accounting-equation/explanation.

"Assets, Liabilities & Equity," *Accountingbase*. Accessed Jan. 9, 2016. http://www.accountingbase.com/IntroALE1.html.

"Balance Sheet Accounts," *Bean Counter*. Accessed Jan. 11, 2016. http://www.dwmbeancounter.com/tutorial/coabal.html.

"What Are Assets?," *Accounting Basics for Students*. Accessed Jan. 9, 2016. http://www.accounting-basics-for-students.com/what-are-assets.html.

"What Is a Liability?," *AccountingCoach*. Accessed Jan. 9, 2016. http://www.accountingcoach.com/blog/what-is-a-liability.

“What Is Owner’s Equity?,” *AccountingCoach*. Accessed Jan. 9, 2016. http://www.accountingcoach.com/blog/what-is-owners-equity.

Equipment, Tools, Supplies, and Facilities

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

Key Terms.

The following terms are presented in this lesson (shown in bold italics):

- accounting equation
- accounts
- accounts payable
- accounts receivable
- asset
- cash account
- current assets
- current liabilities
- equity
- expenses
- fixed assets
- intangible assets
- intellectual property
- inventory
- investments
- liability
- liquidity
- long-term assets
- long-term liabilities
- owner’s equity
- prepaid insurance
- prepaid rent
- revenue
- salaries and wages payable
- supplies

■ **Interest Approach.** Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

> *Businesses use unique language to communicate accounting and financial information. Understanding the language of any business makes one feel more comfortable in that environment. The foundation for accounting is the accounting equation; this lesson is a snapshot of its related concepts. Soon these terms will become common vocabulary, and finding relationships between accounting terms in accounting and accounting terms in other settings will become easier. The fundamental accounting terms and the accounting equation will continue to be referenced in all future lessons.*

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Summarize asset account types and characteristics.

Anticipated Problem: What is an account? What is an asset account? What are characteristics of an asset?

I. Asset account types and characteristics

   A. The ***accounting equation*** is Assets = Liabilities + Owner's Equity. This equation is the foundation of double-entry accounting. The equation indicates that a company can pay for a purchase with assets (e.g., purchase a $400 phone with $400 in cash) or the company can pay for the purchase by borrowing. Liabilities can also be paid with assets (cash) or by taking on more liability (debt).

   B. ***Accounts*** are records or statements that organize and summarize transactions in the form of credits, debits, accruals, and adjustments that have occurred and that have an effect on assets, equity, liabilities, or revenue. Typically, an account is financial assets held by an organization (bank, credit union, accounting service, financial advisory firm) for a customer. In accounting, similar items or transactions are recorded in accounts. Different account types help organize transactions.

   C. An ***asset*** is a company-owned resource that has future economic value that can be measured and expressed in dollars. Asset account categories include current assets and long-term assets.

      1. ***Current assets*** are cash and other resources expected to be converted into cash or be used up within one year. Current asset accounts are listed on the balance sheet in order of liquidity. ***Liquidity*** is the degree to which an asset or

security can be quickly bought or sold (converted into cash). Following are some current accounts and related terms.

a. A ***cash account*** is an account used to record the amount of money held in bank accounts.

b. ***Accounts receivable*** are the amounts due as the result of selling goods or services on credit (also called on account).

c. ***Inventory*** is items produced or purchased for resale.

d. ***Prepaid rent*** and ***prepaid insurance*** are the amount of future rent expense and the amount of future insurance expense, respectively, paid in advance of the rental or insurance period. The amount reported on the balance sheet is the amount that has not yet been used or has not expired.

e. ***Supplies*** are consumable items that commonly have shorter life spans than equipment and machines. Supplies are restocked for use as needed. Examples of supplies are pens, copy paper, paper clips, staplers, and sticky notes.

2. ***Long-term assets*** are resources not intended to be turned into cash or to be consumed within one year of the balance sheet date. ***Investments*** are part of a company's assets (such as stock in another company) purchased in hopes of generating future income. Investments are not consumed today but used in the future to create wealth. Funds held for construction are an example. Long-term asset categories include fixed assets and intangible assets.

   a. ***Fixed assets*** are tangible, long-term assets used in business operations: property, plant, and equipment (PPE). Except for land, fixed assets are depreciated (devalued) over their useful life. Among fixed assets are:

      (1) Land

      (2) Buildings

      (3) Machinery

      (4) Office equipment / computer equipment / furniture

   b. ***Intangible assets*** are intellectual property and typically not physical (tactile) in nature. ***Intellectual property*** is a set of intangibles owned and legally protected by a company from outside use or implementation without consent. Included are:

      (1) Copyrights

      (2) Patents

      (3) Goodwill

      (4) Trade names and trademarks

      (5) Trade secrets (e.g., the Coca-Cola formula)

      (6) Ideas

Teaching Strategy: *Many techniques can be used to help students master this objective. Use VM–A. Have students review the assets and classify each into an account category: current or long-term.*

Objective 2: Summarize liability account types and characteristics.

Anticipated Problem: What is a liability account? What are characteristics of a liability?

II. Liability account types and characteristics

A. A ***liability*** is an obligation or amount owed, usually to a lender or supplier. A liability often has the word "payable" in the account title, signifying the amount is payable to another party.

1. ***Current liabilities*** are obligations coming due within one year. The amounts will be paid with current assets (cash or accounts receivable that have been paid and thus converted to cash). Accounts payable and salaries and wages payable are among current liabilities.
   a. ***Accounts payable*** are amounts owed to suppliers.
   b. ***Salaries and wages payable*** are amounts owed to employees for time worked.
2. ***Long-term liabilities*** are obligations coming due after one year. Examples of long-term liabilities are:
   a. A five-year loan on a vehicle
   b. A 20-year mortgage on a building
   c. Pension obligations

Teaching Strategy: *Many techniques can be used to help students master this objective. Project VM–B to review liability characteristics. Discuss other liabilities a business may have, and record that list on the board. Elaborate on those liabilities that are valid examples.*

Objective 3: Relate equity accounts to revenue and expenses.

Anticipated Problem: What is equity? What is revenue? What is an expense? How do equity accounts relate to revenue and expenses?

III. Equity accounts

A. ***Equity*** is the value of an asset less the value of all liabilities on that asset. The formula to calculate equity is Equity = Asset Value – Liabilities.

B. ***Owner's equity*** is the proprietor's investment in the business, item, or project. It is the difference between assets and liabilities. Owner's equity accounts include:
1. Capital account (tracks additions)
2. Drawing account (tracks withdrawals)

C. ***Revenue*** is the income generated from the sale of goods or services associated with the main operations of an organization.
1. Revenue is essentially sales less any returns or sales discounts.

2. Revenue increases owner's equity.

D. ***Expenses*** are monies spent or costs incurred in an organization's efforts to generate revenue; they represent the cost of doing business.

1. Any item that represents the cost of doing business can have an expense account associated with it. The business manager decides the level of detail necessary for the organization. Examples are:
   a. Advertising expense
   b. Communication expense
   c. Supplies expense
2. Expenses decrease owner's equity.

Teaching Strategy: *Many techniques can be used to help students master this objective. Use VM–C and VM–D to illustrate the concept of equity. Have students solve the car purchase equity scenario in VM–C to visualize the concept of equity. Assign LS–A and LS–B.*

Objective 4: Summarize the relationship between assets, liabilities, and owner's equity in the accounting equation.

Anticipated Problem: What is the relationship between assets, liabilities, and owner's equity in the accounting equation?

IV. The relationship between assets, liabilities, and owner's equity in the accounting equation

A. The accounting equation's relationship between assets, liabilities, and owner's equity must always remain in balance. The prior objectives in this lesson further explain details of the accounting equation concept.

B. The basic equation, as cited earlier, is Assets = Liabilities + Owner's Equity.

1. Recall that revenue increases owner's equity.
2. Recall that expenses decrease owner's equity.
3. Like any equation, the accounting equation can be manipulated as long as it stays in balance. For example, the following equation is also valid because it is in balance: Assets – Liabilities = Owner's Equity.

Teaching Strategy: *Many techniques can be used to help students master this objective. Use VM–E to demonstrate how two basic transactions are translated into the accounting equation. Only a basic introduction showing how the accounting equation balances is demonstrated in VM–E. Review the previous example of a car purchase (VM–C and VM–D).*

Review/Summary. Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. If a textbook is being used, questions at the ends of chapters may also be included in the Review/Summary.

Application. Use the included visual masters and lab sheets to apply the information presented in the lesson.

Evaluation. Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

Answers to Sample Test:

Part One: Matching

1. e
2. d
3. f
4. a
5. c
6. b
7. g
8. h

Part Two: True/False

1. T
2. T
3. F
4. T
5. F
6. T

Part Three: Completion

1. liquidity
2. intellectual property
3. balance
4. decrease
5. salaries and wages payable
6. current

Sample Test

Name ________________________________

Accounting Equation

Part One: Matching

Instructions: **Match the term with the correct definition.**

a. accounts receivable
b. asset
c. current assets
d. current liabilities
e. expenses
f. intangible assets
g. inventory
h. revenue

_____1. Monies spent or costs incurred in an organization's efforts to generate revenue; represent the cost of doing business

_____2. Obligations coming due within one year

_____3. Intellectual property and typically not physical (tactile) in nature

_____4. The amounts due as the result of selling goods or services on credit (also called on account)

_____5. Cash and other resources expected to be converted into cash or be used up within one year

_____6. A company-owned resource that has future economic value that can be measured and expressed in dollars

_____7. Items produced or purchased for resale

_____8. The income generated from the sale of goods or services associated with the main operations of an organization

Part Two: True/False

Instructions: **Write *T* for true or *F* for false.**

_____1. The accounting equation is Assets = Liabilities + Owner's Equity.

_____2. An example of an intangible asset is a patent.

_____3. A building is a current asset.

_____4. A cash account represents the amount of money a business has in the bank.

_____5. Revenue decreases owner's equity.

_____6. It is expected that supplies will be used up within one year.

Part Three: Completion

Instructions: **Provide the word or words to complete the following statements.**

1. The degree to which an asset or security can be quickly bought or sold (converted into cash) is called _________________________.
2. A set of intangibles owned and legally protected by a company from outside use or implementation without consent is called _________________________.
3. The relationship between assets, liabilities, and owner's equity must always remain in _________________________.
4. Expenses cause an owner's equity account to _________________________.
5. The amounts owed to employees for time worked are _________________________.
6. Supplies are considered a/an _________________________ asset.

ASSETS MATCH: CURRENT OR LONG-TERM

Label each asset account as a **current asset** (C) or a **long-term asset** (LT).

_____ Accounts receivable

_____ Buildings

_____ Cash

_____ Copyrights

_____ Furniture

_____ Goodwill

_____ Inventory

_____ Investments

_____ Land

_____ Machinery

_____ Office equipment

_____ Patents

_____ Supplies

_____ Trademarks

LIABILITIES

A **liability** is an obligation or amount owed, usually to a lender or supplier. A liability often has the word "payable" in the account title, signifying the amount is payable to another party. A **current liability** is an obligation coming due within one year. A **long-term liability** is an obligation coming due after one year.

What obligations, or payables, might a business have?

EQUITY: BUYING A NEW CAR

You buy a car—an asset—for $20,000.

You pay $15,000 in cash and take out a loan—a liability—for $5,000.

What is your **owner's equity** in the vehicle?

EQUITY: BUYING A NEW CAR—SOLUTION

Since you do not "fully" own the car, your ownership, or equity, in the car is not a full $20,000.

The ownership equity is the value of the car (an asset), $20,000, less the amount of the loan (a liability), $5,000. So, your **owner's equity is $15,000.**

SAMPLE TRANSACTIONS INVOLVING THE ACCOUNTING EQUATION

Transaction 1. Your business purchases a car for $20,000. The business pays $15,000 cash and takes out a loan for $5,000. How does this transaction affect the accounting equation?

Assets = Liabilities + Owner's Equity

Assets	Liabilities	Owner's Equity
The car increases assets by $20,000. The cash payment decreases assets by $15,000.	The loan increases liabilities by $5,000.	

The equation is in balance: Balance of assets = $5,000; balance of liabilities and owner's equity = $5,000.

Transaction 2. The business makes a sale of $2,000. The business is paid in cash. How does this action affect the accounting equation?

Assets = Liabilities + Owner's Equity

Assets	Liabilities	Owner's Equity
Receiving cash increases assets by $2,000.		A sale is considered revenue, so revenue increases owner's equity by $2,000.

The equation is in balance: Balance of assets = $2,000; balance of liabilities and owner's equity = $2,000.

LS–A

Name ____________________________________

Asset Classification

Purpose

The purpose of this activity is to accurately classify different asset types.

Objectives

1. Select asset-related category terms.
2. Classify asset-related terms into the appropriate categories.

Materials

- lab sheet
- writing utensil

Procedure

1. Review your class notes about the accounting equation, key terms, and concepts.
2. Read the list of asset-related terms below.
   - Accounts receivable
   - Buildings
   - Cash
   - Copyrights
   - Current assets
   - Fixed assets
   - Furniture
   - Goodwill
   - Intangible assets
   - Inventory

- Investments
- Land
- Long-term assets
- Machinery
- Office equipment
- Patents
- Property, plant, and equipment
- Supplies
- Trademarks

3. Identify those terms that are “categories,” and write those terms on the lines in the boxes provided. (You may or may not need all six boxes.)
4. Then, sort each of the remaining asset-related terms into one of the categories. (Choose the narrowest category possible.)

Category: ___________________________	Category: ___________________________
Category: ___________________________	Category: ___________________________
Category: ___________________________	Category: ___________________________

5. Participate in a discussion of category titles and entries in each asset category.
6. Turn your completed lab sheet in to your instructor.

LS–B

Name ________________________________

Matching Accounts to the Five Basic Types

Purpose

The purpose of this activity is to accurately assign accounts to the five basic account types.

Objectives

1. Determine whether each account is an asset, liability, owner's equity, revenue, or expense account.
2. Identify current assets and current liabilities.

Materials

- lab sheet
- writing utensil

Procedure

1. Review your class notes about accounts and types of accounts.
2. Match each account listed below to one of the following types. [**NOTE**: There is only one correct answer for each account.]

A = Asset	L = Liability	OE = Owner's equity
R = Revenue	E = Expense	

_______ Accounts payable

_______ Accounts receivable

_______ Advertising expense

_______ Capital

_______ Cash

_______ Communication expense

_______ Drawing

_______ Furniture

_______ Interest payable

_______ Investments

_______ Land

_______ Patents

_______ Salaries and wages payable

_______ Sales

_______ Sales discounts

_______ Supplies

3. From the accounts you selected as assets and as liabilities, further classify each as a current asset or a current liability.

   a. List below the asset accounts considered current assets.

   b. List below the liability accounts considered current liabilities.

4. Participate in a discussion this activity. Be prepared to defend your responses.

5. Turn your completed lab sheet in to your instructor.