Accounting Lesson to Prepare for UIL Accounting Contest

Lesson Plan Title: The Accounting Equation for the Corporation

Goal of Lesson: To analyze the components of the accounting equation from the beginning of a fiscal period to the end of the fiscal period for the type of business organization referred to as a corporation.

Grade Level/Course: Accounting I

TEKS Addressed:

(1B) Apply basic accounting concepts and terminology. (AI)
(1C) Demonstrate the effects of transactions on the accounting equation, for example, T accounts. (AI)
(1I) Update accounts through adjusting and closing entries. (AI)
(3B) (11A) Calculate answers to problems using addition, subtraction, division, multiplication, percentages, and decimals. (R) (AP)
(5C) Identify the various accounting functions involved with each from of business organization. (AI)
(1C) Apply related accounting procedures to the different types of business organizations. (AII)
(2D) Apply related accounting procedures to the organization of capital stock. (AII)
(2E) Apply related accounting procedures to determine taxes, dividends, and retained earnings. (AII)
(5A) (9B) Compare the various forms of business organization. (AI) (IntroB)
(5C) (1C) Identify and apply the various accounting functions involved with each form of business organization. (AI) (AII)
(7B) (5A) (4A) Develop time management skills by setting priorities for completing work as scheduled. (AI) (AII) (R)
(4D) (1A) Organize ideas logically and sequentially. (BSS) (BC)
(1B) Locate and interpret written information. (BC)

Overview of Lesson:

The teacher will review the accounting equation and the type of business organization referred to as a corporation, analyze the structure of the various equity accounts, have students solve sample exercises, assign students to independently identify similar problem formats, and assign students to solve a complex equation puzzle problem.

Materials Needed:

1. Exercises (attached)
2. Computers with Internet access to UIL Accounting website, Archived Exams (or printed versions of UIL tests from prior years)
3. Problems (attached)

Procedures and Activities:

The teacher will—

- state the components of the accounting equation for a corporation (A = L + Capital Stock + Paid-In Capital in Excess of Par + Retained Earnings)
- review the detail of the components that affect Retained Earnings (Dividends, +/- net income/net loss)
- compare Retained Earnings to a sole proprietor's Capital account
- emphasize that owner investments in a corporation are not recorded in Retained Earnings; rather there are separate accounts for corporate stock

- have students solve for the unknown dividend amount using the T-account for Retained Earnings in the Exercise: Ways to Increase/Decrease Retained Earnings
- have students solve for the unknown net income or net loss in the Exercise: Complex Equation Puzzle (Corporation)

Independent Practice:

The teacher will—

- provide students with access to the Internet website for UIL Accounting's Archived Exams (or printed versions of prior year contest materials)
- assign students to investigate prior year contest exams to find any 3 problems similar to the ones in the exercises of this lesson (attention should be given to each of the three entity types)
- have students print those problems, solve independently, compare answers to the keys provided online, and correct as needed
- have students demonstrate to the class how to solve one of the problems they found in prior UIL contest materials
- assign students to solve the Problem at the end of this lesson

Assessment:

- evaluation of the 3 problems selected by the student
- evaluation of the Problem assigned

Exercise: Ways to Increase/Decrease Retained Earnings (Corporation)

Retained Earnings	
	260,100
?	90,250
	297,850 *(footing after closing entries)*

Exercise: Complex Equation Puzzle (Corporation)

What is the amount of net income or loss?

	ABC Corp
Beginning of the Year	
Assets	**548,260**
Liabilities	**194,320**
Capital Stock	**200,000**
Paid-In Capital in Excess of Par	**?**
Retained Earnings	**105,210**
End of the Year	
Assets	**496,815**
Liabilities	**71,500**
Capital Stock	**?**
Paid-In Capital in Excess of Par	**?**
Retained Earnings	**?**
During the Year:	
Stock issued at par	**10,000**
Paid in Capital in Excess of Par	**3,695**
Net Income<Loss>	**?**
Dividends	**35,000**

Assigned Problem:

Group 1
Use the following information to solve questions 1 through 3.

	XYZ Corp
Beginning of the Year	
Assets	**?**
Liabilities	**37,416**
Capital Stock	**310,000**
Paid-In Capital in Excess of Par	**4,265**
Retained Earnings	**?**
End of the Year	
Assets	**?**
Liabilities	**26,055**
Capital Stock	**?**
Paid-In Capital in Excess of Par	**?**
Retained Earnings	**279,416**
During the Year:	
Stock issued at par	**60,000**
Paid in Capital in Excess of Par	**8,748**
Net Income<Loss>	**126,290**
Dividends	**55,000**

1. What is the amount of Retained Earnings at the beginning of the year?

2. What are total assets at the beginning of the year?

3. What are total assets at the end of the year?

Answers to Exercises:

Ways to Increase/Decrease Retained Earnings (Corporation)

Solution: 260,100 + 90,250 net income – 297,850 = **52,500**

Complex Equation Puzzle (Corporation)

	Assets	=	Liabilities	+	Capital Stock	+	PIC	Retained Earnings
Beg.	**548,260**		**194,320**		**200,000**		*48,730*	**105,210**
					10,000		**3,695**	**?**
								<35,000>
End	**496,815**		**71,500**		*210,000*		*52,425*	*162,890*

Solution Steps:

1. Write down the facts from the problem (entered above in bold)
2. Solve beginning balance of PIC (Paid-In Capital in Excess of Par): 548,260 – 194,320 - 200,000 – 105,210 = 48,730
3. Solve ending balance of PIC: 48,730 + 3,695 = 52,425
4. Solve ending balance of Capital Stock: 200,000 + 10,000 = 210,000
5. Solve ending balance of Retained Earnings: 496,815 – 71,500 – 210,000 – 52,425 = 162,890
6. Solve for the unknown net income or net loss: 105,210 – 35,000 (view calculator screen at this point 70,210 to determine if result will be income or loss) (it is net income because it will take an increase to Retained Earnings to get from 70,210 to 162,890) - 162,890 = **92,680 net income**

Answers to Problem:

Group 1

	Assets	=	Liabilities	+	Capital Stock	+	PIC	Retained Earnings
Beg.	*559,807*		**37,416**		**310,000**		**4,265**	*208,126*
	128,677		*<11,361>*		**60,000**		**8,748**	**126,290**
								<55,000>
End	*688,484*		**26,055**		*370,000*		*13,013*	**279,416**

Solution:

1. Solve beginning Retained Earnings: 279,416 + 55,000 – 126,290 = **208,126**
2. Solve ending Capital Stock: 310,000 + 60,000 = 370,000
3. Solve ending Paid in Capital in Excess of Par: 4,265 + 8,748 = 13,013
4. Solve beginning assets: 37,416 + 310,000 + 4,265 + 208,126 = **559,807**
5. Solve ending assets: 26,055 + 370,000 + 13,013 + 279,416 = **688,484**

Double Check Back Door:

1. Solve change in assets: 688,484 – 559,807 = 128,677 increase
2. Solve change in liabilities: 37,416 – 26,055 = 11,361 decrease
3. Does equation balance for the changes during the year?
   126,290 – 55,000 + 8,748 + 60,000 – 11,361 = 128,677 (which equals the increase in assets)

Accounting Lesson to Prepare for UIL Accounting Contest

Lesson Plan Title: The Accounting Equation for the Partnership

Goal of Lesson: To analyze the components of the accounting equation from the beginning of a fiscal period to the end of the fiscal period for the type of business organization referred to as a partnership.

Grade Level/Course: Accounting I

TEKS Addressed:

(1B) Apply basic accounting concepts and terminology. (AI)
(1C) Demonstrate the effects of transactions on the accounting equation, for example, T accounts. (AI)
(1I) Update accounts through adjusting and closing entries. (AI)
(3B) (11A) Calculate answers to problems using addition, subtraction, division, multiplication, percentages, and decimals. (R) (AP)
(5C) Identify the various accounting functions involved with each from of business organization. (AI)
(1C) Apply related accounting procedures to the different types of business organizations. (AII)
(2C) Apply related accounting procedures to the division of profits and losses. (AII)
(7B) (5A) (4A) Develop time management skills by setting priorities for completing work as scheduled. (AI) (AII) (R)
(4D) (1A) Organize ideas logically and sequentially. (BSS) (BC)
(1B) Locate and interpret written information. (BC)

Overview of Lesson:

The teacher will review the accounting equation and the type of business organization referred to as a partnership, analyze the structure of the partners' capital accounts, compare structure to the sole proprietorship, have students solve sample exercises, assign students to independently identify similar problem formats, and assign students to solve a complex equation puzzle.

Materials Needed:

1. Exercises (attached)
2. Computers with Internet access to UIL Accounting website, Archived Exams (or printed versions of UIL tests from prior years)
3. Problems (attached)

Procedures and Activities:

The teacher will—

- state the components of the accounting equation for a partnership with two owners (A = L + Partner One, Capital + Partner Two, Capital)
- emphasize that each partner has a separate capital account and review the components that change a capital account (same rules as sole proprietorship)
- review the ways net income and net loss may be shared by partners
- have students solve for the unknown amount of drawing for Partner One using the T-accounts in the Exercise: Ways to Increase/Decrease Partner Capital
- have students solve for the unknown amount of the investment made by Partner One during the fiscal year in the Exercise: Complex Equation Puzzle (Partnership)
- Use the Complex Equation Puzzle (Partnership) to explore alternative solving approaches. Use a timer to determine the fastest method.

Independent Practice:

The teacher will—

- provide students with access to the Internet website for UIL Accounting's Archived Exams (or printed versions of prior year contest materials)
- assign students to investigate prior year contest exams to find any 3 problems similar to the ones in the exercises of this lesson (attention should be given to each of the three entity types)
- have students print those problems, solve independently, compare answers to the keys provided online, and correct as needed
- have students demonstrate to the class how to solve one of the problems they found in prior UIL contest materials
- assign students to solve the Problems at the end of this lesson

Assessment:

- evaluation of the 3 problems selected by the student
- evaluation of the Problems assigned

Exercise: Ways to Increase/Decrease Partner Capital

Partner One, Capital			Partner Two, Capital	
	75,410	Beg. Bal.		52,480
	5,000			10,000
	80,410	footing		*62,480*
?	18,643	share NI equally	6,500	18,643
	89,453			*74,623*

Exercise: Complex Equation Puzzle (Partnership)

At the beginning of the fiscal year, a partnership's assets were $286,310 and Partner Two's capital balance was $62,595. During the year, assets increased by $16,850 while liabilities decreased by $41,150. Partner One withdrew $4,000 and Partner Two withdrew $15,000. Partner Two invested $5,000 in the business during the year. The total partnership net income for the year was $62,000 and the partners will share net income equally. At the end of the fiscal year, Partner One had a capital balance of $98,290. How much did Partner One invest in the business during the fiscal year?

Assignment Problem:

Group 1

Consider the following information; then answer questions 1 and 2.

The partnership had a total net income of $120,000. The partnership agreement states that Partner One is entitled to 60% of the profit or loss; Partner Two is entitled to 40% of the profit or loss.

Beginning of the Year:	
Assets	172,615
Liabilities	24,986
End of the Year:	
Assets	282,778
Liabilities	26,149
Partner One, Capital	144,215
During the Year, Partner One:	
Partner One Investments	10,000
Partner One Withdrawals	25,000
During the Year, Partner Two:	
Partner Two Investments	16,000
Partner Two Withdrawals	12,000

1. What is the amount of beginning capital for Partner One?

2. What is the amount of beginning capital for Partner Two?

Answers to Exercises:

Ways to Increase/Decrease Partner Capital

Partner One, Capital			Partner Two, Capital	
	75,410	Beg. Bal.		52,480
	5,000			10,000
	80,410	footing		***62,480***
?	18,643	share NI equally	6,500	18,643
	89,453			***74,623***

Solution Steps:

	Beginning balance of Partner One, Capital	75,410
+	Partner One's investment	5,000
+	Partner One's share of net income	18,643
-	Ending balance of Partner One, Capital	89,453
=	Partner One's drawing	9,600

Points of Consideration:

1. Partners might share net income or net loss in other ways besides equally.
2. Partners will not always draw equal amounts.
3. Partners often have different capital balances.
4. The partnership agreement outlines acceptable practices by partners.
5. In the solution steps, the footing of $80,410 could have been a short-cut starting point.

Answers to Exercises (continued):

Complex Equation Puzzle (Partnership) First Solving Approach

	Assets	=	Liabilities	+	Partner One, Capital	+	Partner Two, Capital	Memo: Capital Components
Beg.	286,310						62,595	
					?		5,000	investment
	+ 16,850		<41,150>		4,000		15,000	drawing
					31,000		31,000	share of NI
End		=		+	98,290			

Solution Steps (there are other acceptable approaches):

1. Write down the facts from the problem (entered above in bold)
2. Solve for Partner One's investment using the changes in each component during the year: 16,850 + 41,150 - 5,000 + 4,000 + 15,000 - 62,000 total net income = 10,000

The solving approach shown above should prove to be the faster method. Below is a second solving approach to use for a timed comparison. Both yield the correct response. However, for contest purposes the fastest method should be practiced.

Complex Equation Puzzle (Partnership) Second Solving Approach

	Assets	=	Liabilities	+	Partner One, Capital	+	Partner Two, Capital	Memo: Capital Components
Beg.	286,310		*162,425*		*61,290*		62,595	
					?		5,000	investment
	+ 16,850		<41,150>		4,000		15,000	drawing
					31,000		31,000	share of NI
End	*303,160*	=	*121,275*	+	98,290		*83,595*	

Alternative Solution (see entries above in script font)

1. Solve ending Assets: 286,310 + 16,850 = 303,160
2. Solve ending balance of Partner Two, Capital: 62,595 + 5,000 – 15,000 + 31,000 = 83,595
3. Solve ending balance of Liabilities: 303,160 – 98,290 – 83,595 = 121,275
4. Solve beginning balance of Liabilities: 121,275 + 41,150 = 162,425
5. Solve beginning balance of Partner One, Capital: 286,310 – 162,425 – 62,595 = 61,290
6. Solve for Partner One's investment in the business during the year: 61,290 – 4,000 + 31,000 – 98,290 = 10,000

Answers to Problem:

Group 1

	Assets	=	Liabilities	+	Partner One, Capital	+	Partner Two, Capital	Memo: Capital Components
Beg.	172,615		24,986					
					10,000		16,000	investment
					25,000		12,000	drawing
					72,000		*48,000*	share of NI
End	282,778	=	26,149	+	144,215		*112,414*	

Solution: (there are other acceptable sequences)

1. Divide net income per the agreement: 120,000 x 60% = 72,000 to Partner One
2. Partner Two net income: 120,000 – 72,000 = 48,000 OR 120,000 x 40% = 48,000
3. Solve ending balance Partner Two, Capital: 282,778 – 26,149 – 144,215 = 112,414
4. Solve beginning balance Partner One, Capital: 144,215 – 72,000 + 25,000 – 10,000 = 87,215
5. Solve beginning balance Partner Two, Capital: 112,414, - 48,000 + 12,000 – 16,000 = 60,414

Accounting Lesson to Prepare for UIL Accounting Contest

Lesson Plan Title: The Accounting Equation for the Sole Proprietorship

Goal of Lesson: To analyze the components of the accounting equation from the beginning of a fiscal period to the end of the fiscal period for the type of business organization referred to as a sole proprietorship.

Grade Level/Course: Accounting I

TEKS Addressed:

(1B) Apply basic accounting concepts and terminology. (AI)
(1C) Demonstrate the effects of transactions on the accounting equation, for example, T accounts. (AI)
(1I) Update accounts through adjusting and closing entries. (AI)
(3B) (11A) Calculate answers to problems using addition, subtraction, division, multiplication, percentages, and decimals. (R) (AP)
(5C) Identify the various accounting functions involved with each from of business organization. (AI)
(1C) Apply related accounting procedures to the different types of business organizations. (AII)
(7B) (5A) (4A) Develop time management skills by setting priorities for completing work as scheduled. (AI) (AII) (R)
(4D) (1A) Organize ideas logically and sequentially. (BSS) (BC)
(1B) Locate and interpret written information. (BC)

Overview of Lesson:

The teacher will review the accounting equation and the type of business organization referred to as a sole proprietorship, analyze the structure of the owner's capital account, have students solve sample exercises, assign students to independently identify similar problem formats, and assign students to solve a complex equation puzzle problem and analyze the owner's capital account.

Materials Needed:

1. Exercises (attached)
2. Computers with Internet access to UIL Accounting website, Archived Exams (or printed versions of UIL tests from prior years)
3. Problems (attached)

Procedures and Activities:

The teacher will—

- review the components and formula of the accounting equation (A = L + C)
- review that one missing component may be solved using the equation and the two known components
- have students solve for a single unknown in the Exercise: Simple Equation Puzzle
- review the fact that transactions within a fiscal period will cause the equation to change from the beginning of the fiscal period to the end of the fiscal period
- review the detail of the components that affect the capital account (owner's drawing, owner's additional investment, +/- net income/net loss)
- have students solve for net income using the T-account for Capital in the Exercise: Ways to Increase/Decrease Capital (Sole Proprietorship)
- have students solve for the unknown increase in liabilities during the year in the Exercise: Complex Equation Puzzle (Sole Proprietorship)

Independent Practice:

The teacher will—

- provide students with access to the Internet website for UIL Accounting's Archived Exams (or printed versions of prior year contest materials)
- assign students to investigate prior year contest exams to find any 3 problems similar to the ones in the exercises of this lesson
- have students print those problems, solve independently, compare answers to the keys provided online, and correct as needed
- have students demonstrate to the class how to solve one of the problems they found in prior UIL contest materials
- assign students to solve the Problems at the end of this lesson

Assessment:

- evaluation of the 3 problems selected by the student
- evaluation of the problems assigned

Exercise: Simple Equation Puzzle

27,000 = L + 20,000

Exercise: Ways to Increase/Decrease Capital (Sole Proprietorship)

Capital		
	25,485	
	10,000	
	35,485	***(footing before closing entries)***
12,500	?	
	60,195	***(footing after closing entries)***

Exercise: Complex Equation Puzzle (Sole Proprietorship)

Question: What is the amount of change in liabilities during the year?

Beginning of the Year:	
Assets	$ 26,910
Liabilities	5,375
End of the Year:	
Assets	49,615
Liabilities	?
During the Year:	
Owner Investments	8,000
Net Income (Loss)	24,049
Owner Withdrawals	10,000

Assignment Problems:

Group 1

Consider the following information; then answer question #1. A net loss must be indicated by brackets. At the beginning of the fiscal year, a company's assets were $82,749. During the year, assets increased by $18,697 and liabilities decreased by $4,284. At the end of the year, liabilities totaled $8,334. The owner made withdrawals of $15,250, and invested $3,000 in the business during the year.

1. What was the amount of net income or net loss?

Group 2 (taken from UIL Accounting District 2008-D2, Group 4)

The following T-account summarizes the activity for fiscal year end December 31, 2007 for a business that started in 1999. Revenues for 2007 were $62,430 and expenses were $64,240. The owner made one investment in the business during 2007 and also made withdrawals.

Kade Jefferson, Capital

	47,825	
	30,000	
	77,825	*(footing before closing entries)*
1,810		
18,000		
	58,015	*(footing after closing entries)*

For questions 2 through 11, write the identifying letter of the correct answer on your answer sheet using the following choices. A choice may be used more than once.

A	1,810
B	18,000
C	30,000
D	47,825

E	58,015
F	62,430
G	64,240
H	76,015

I	77,825
J	82,240
K	none

2. the amount of owner withdrawals for 2007
3. the amount of capital on January 1, 2007
4. net income for 2007
5. the amount of capital that would be found in the unadjusted trial balance column of the work sheet for 2007
6. the amount of owner investments made in 2007
7. the amount of ending capital that would be found on the balance sheet for December 31, 2007
8. the amount of total business expenses
9. net loss for 2007
10. the resulting amount of owner investments, owner withdrawals, net profits, and net losses from previous years only

11. the amount of capital extended to the balance sheet credit column of the work sheet

Answers to Exercises:

Simple Equation Puzzle:

27,000	=	L + 20,000
27,000 – 20,000	=	L
7,000	=	L

Ways to Increase/Decrease Capital (Sole Proprietorship):

	Beginning Capital Balance	25,485
+	Owner Investment	10,000
-	Owner Drawing	12,500
-	Ending Capital Balance	60,195
=	Net Income	37,210

Complex Equation Puzzle (Sole Proprietorship):

	Assets	=	Liabilities	+	Capital
Beg.	26,910		5,375		*21,535*
					8,000
	22,705		*656*		<10,000>
					24,049
End	49,615	=	*6,031*	+	*43,584*

Solution Steps (there are other acceptable approaches):

1. Write down the facts from the problem (entered above in bold)
2. Solve for beginning Capital 26,910 – 5,375 = 21,535 (entered above in script font)
3. Solve for ending Capital 21,535 + 8,000 -10,000 + 24,049 = 43,584
4. Solve for ending Liabilities 49,615 – 43,584 = 6,031
5. Solve for the increase in Liabilities during the year 5,375 – 6,031 = 656

Back-door Double Check:

Assets Increased by 22,705 (calculated in this way: 49,615 – 26,910)
Capital Increased by 22,049 (calculated in this way: 8,000 – 10,000 + 24,049)
Therefore Liabilities increased by 656 (calculated in this way: 22,705 – 22,049)

Answers to Problems:

Group 1

	Assets	=	Liabilities	+	Capital	Memo: Capital Components
Beg.	82,749		*12,618*		*70,131*	
					3,000	investment
	18,697		<4,284>		<15,250>	withdrawals
					35,231	net income/loss
End	*101,446*	=	8,334	+	*93,112*	

Solution One:

18,697 + 4,284 + 15,250 – 3,000 = 35,231

Solution Two:

1. Solve for ending assets: 82,749 + 18,697 = 101,446
2. Solve for beginning liabilities: 8,334 + 4,284 = 12,618
3. Solve for beginning capital: 82,749 – 12,618 = 70,131
4. Solve for ending capital: 101,446 – 8334 = 93,112
5. Solve for net income/loss: 70,131 + 3,000 – 15,250 (look at calculator screen 57,881 to determine if net income or net loss) (it is net income because it will take an increase in capital to get from 57,881 to 93,112) – 93,112 = 35,231

Group 2

2	B
3	D
4	K
5	I
6	C
7	E
8	G
9	A
10	D
11	I

Accounting Lesson to Prepare for UIL Accounting Contest

Lesson Plan Title: Accrued Interest Payable on an Interest-Bearing Promissory Note

Goal of Lesson: To calculate the amount of accrued interest expense on a promissory note payable and journalize the accrual.

Grade Level/Course: Accounting I

TEKS Addressed:

(1B) Apply basic accounting concepts and terminology. (AI)
(1H) Calculate and record end-of-period adjustments. (AI)
(1I) Update accounts through adjusting and closing entries. (AI)
(3B) (11A) Calculate answers to problems using addition, subtraction, division, multiplication, percentages, and decimals. (R) (AP)
(4E) Calculate and record notes payable and notes receivable. (AI)
(4G) Calculate interest due and payable and journalize transactions involving notes payable and receivable. (AI)
(2I) Differentiate between the basics of a cash-basis accounting system and an accrued-basis accounting system. (AII)
(7B) (5A) (4A) Develop time management skills by setting priorities for completing work as scheduled. (AI) (AII) (R)

Overview of Lesson:

The teacher will briefly compare cash-basis accounting and accrual-basis accounting, differentiate an interest bearing and non-interest bearing note, identify the terms and definitions regarding notes, review the formula for calculating interest on a note, demonstrate the use of a time line in a sample problem, assign students to independently identify similar problem formats, and assign students to solve a problem independently.

Materials Needed:

1. Handout called “Using a Time Line to Divide Interest Expense Between Two Fiscal Years” (attached)
2. Computers with Internet access to UIL Accounting website, Archived Exams (or printed versions of UIL tests from prior years)
3. Problem Assignment (attached)

Procedures and Activities:

The teacher will—

- compare cash-basis accounting and accrual-basis accounting in the context of a promissory note payable
- differentiate between an interest-bearing note and a non-interest bearing note
- identify the terms associated with an interest-bearing promissory note (for example: face value, maturity value, maker, etc.)
- review the formula components for calculating interest (using a banker’s year of 360 days) (Interest = Principal x Rate x Time)
- use the handout provided to use a time line to divide interest expense into two fiscal reporting periods

Independent Practice:

The teacher will—

- provide students with access to the Internet website for UIL Accounting's Archived Exams (or printed versions of prior year contest materials)
- assign students to investigate prior year contest exams to find any 3 problems similar to the ones in the exercises of this lesson
- have students print those problems, solve independently, compare answers to the keys provided online, and correct as needed
- have students demonstrate to the class how to solve one of the problems they found in prior UIL contest materials
- assign students to solve the Problem at the end of this lesson

Assessment:

- evaluation of the 3 problems selected by the student
- evaluation of the Problem assigned

Using a Time Line to Divide Interest Expense Between Two Fiscal Years

Sample Problem (modified from UIL Accounting State 2011-S, Group 7)

On August 9, 2010, Banana Company borrowed $27,000 from Infinity Bank by signing a 180-day, 6% interest-bearing promissory note. (This is the only time the company has ever had to borrow money from any source.)

Banana Company has the following accounting policies and procedures:

- Uses the accrual basis of accounting
- Fiscal year-end December 31
- Adjusting & closing entries are prepared only at fiscal year-end
- Uses 360-day year for promissory note calculations

Use the above information to solve the following questions.

1. What is the date the note was signed?
2. What is the date of Banana's fiscal year-end?
3. What is the maturity date of the note?
4. How many total days are there in the note?
5. How many days are there between the date the note was signed and the end of Banana's fiscal year-end?
6. How many days are there between Banana's fiscal year-end and the maturity date of the note?
7. What is the face value of the note?
8. What is the total amount of interest on this entire note?
9. What amount of interest expense is incurred in 2010?
10. What amount of interest expense is incurred in 2011?
11. What is the journal entry to record the accrual for interest expense in 2010?

_____ days	_____ days	Totals: =____days
$_____	$_____	=$_____
fiscal year 2010	fiscal year 2011	

Assignment Problem:
(modified from UIL Accounting State 2009-S, Group 6)

On August 4, 2008 Express Video borrowed $15,000 from Best Bank by signing a 180-day, 6% interest-bearing promissory note. (This is the only time the company has ever had to borrow money from any source.)

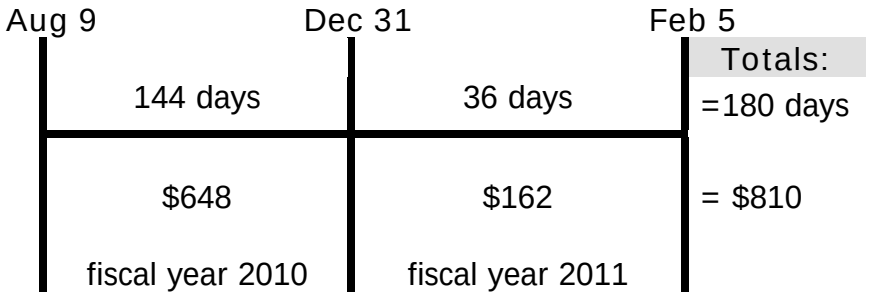
Express Video has the following accounting policies and procedures:

- Uses the accrual basis of accounting
- Fiscal year-end December 31
- Adjusting entries are prepared only at fiscal year-end
- Closing entries are prepared only at fiscal year-end
- Uses 360-day year for promissory note calculations

1. What is the maturity date of the note?
2. How many days are there between the date the note was signed and the end of Express Video's fiscal year-end?
3. How many days are there between Express Video's fiscal year-end and the maturity date of the note?
4. What is the face value of the note?
5. What is the total amount of interest on this entire note?
6. What amount of interest expense is incurred in 2008?
7. What amount of interest expense is incurred in 2009?
8. What is the journal entry to accrue interest expense on December 31, 2008?

Bonus:
9. What is the journal entry when the maturity value is paid on the due date?

Solutions to Time Line for Banana Company:



Solution Steps:

1. What is the date the note was signed? (given Aug 9, enter on the time line)
2. What is the date of Banana's fiscal year-end? (given Dec 31, enter on the time line)
3. What is the maturity date of the note?

Total Days in Note = 180			Days Remaining	How to Calculate Days Remaining
Aug 31 - 9	=	22	158	180 - 22
Sept	=	30	128	158 - 30
Oct	=	31	97	128 - 31
Nov	=	30	67	97 - 30
Dec	=	31	36	67 - 31
Jan	=	31	Feb 5	36 - 31

enter on time line

4. How many total days are there in the note? (given 180, enter on time line)
5. How many days are there between the date the note was signed and the end of Banana's fiscal year-end?

Aug 31 - 9	=	22
Sept	=	30
Oct	=	31
Nov	=	30
Dec	=	31
		144

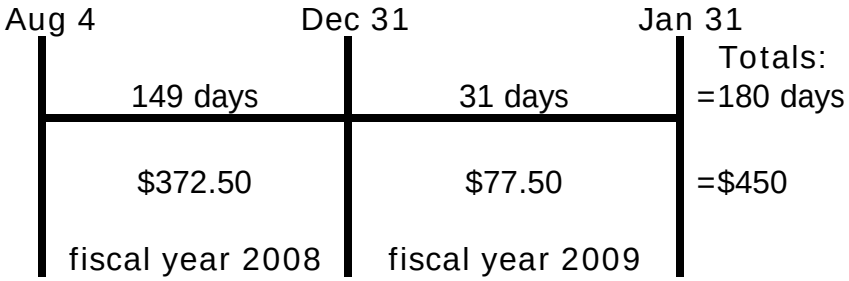
enter 144 on the time line

6. How many days are there between Banana's fiscal year-end and the maturity date of the note? 180–144=36 days OR Jan(31 days)+Feb(5)=36 (enter on the time line)
7. What is the face value of the note? $27,000 (given)
8. What is the total amount of interest on this entire note? (formula: Int = P x R x T)
   Int = 27,000 x .06 x 180 / 360 therefore interest = $810 (enter on time line)
9. What amount of interest expense is incurred in 2010?
   Int = 27,000 x .06 x 144 / 360 therefore interest = $648 (enter on time line)
10. What amount of interest expense is incurred in 2011?
    $810 - $648 = $162 OR 27,000 x .06 x 36 / 360 = $162 (enter on time line)
11. What is the journal entry to record the accrual for interest expense in 2010?

Interest Expense	648	

Interest Payable		648

Solutions to Assignment Problem:



1. What is the maturity date of the note?

Total Days in Note = 180			Days Remaining	How to Calculate Days Remaining
Aug 31 - 4	=	27	153	180 - 27
Sept	=	30	123	153 - 30
Oct	=	31	92	123 - 31
Nov	=	30	62	92 - 30
Dec	=	31	Jan 31	62 - 31

2. How many days are there between the date the note was signed and the end of Express Video's fiscal year-end?

Aug 31 - 4	=	27
Sept	=	30
Oct	=	31
Nov	=	30
Dec	=	31
		149

3. How many days are there between Express Video's fiscal year-end and the maturity date of the note? 180 – 149 = 31 days
4. What is the face value of the note? $15,000
5. What is the total amount of interest on this entire note?
   15,000 x .06 x 180 / 360 = $450
6. What amount of interest expense is incurred in 2008?
   15,000 x .06 x 149 / 360 = $372.50
7. What amount of interest expense is incurred in 2009?
   $450 – 372.50 = $77.50 OR 15,000 x .06 x 31 / 360 = $77.50
8. What is the journal entry to accrue interest expense on December 31, 2008?

Interest Expense	372.50	
Interest Payable		372.50

9. What is the journal entry when the maturity value is paid on the due date?

Note Payable	15,000.00	
Interest Payable	372.50	
Interest Expense	77.50	
Cash in Bank		15,450.00

Accounting Lesson to Prepare for UIL Accounting Contest

Lesson Plan Title: Three Methods of Inventory Valuation

Goal of Lesson: To analyze three methods of calculating cost of ending inventory for a merchandising business.

Grade Level/Course: Accounting I

TEKS Addressed:

(1B) Apply basic accounting concepts and terminology. (AI)
(3B) (11A) Calculate answers to problems using addition, subtraction, division, multiplication, percentages, and decimals. (R) (AP)
(2J) Calculate the cost of inventory on hand using appropriate inventory calculation methods.
(7B) (5A) (4A) Develop time management skills by setting priorities for completing work as scheduled. (AI) (AII) (R)
(4D) (1A) Organize ideas logically and sequentially. (BSS) (BC)
(1B) Locate and interpret written information. (BC)

Overview of Lesson:

The teacher will compare and contrast a service business and a merchandising business, review the income statement for a merchandising business and the details making up the cost of merchandise sold section, review the inventory valuation methods referred to as FIFO, LIFO, and weighted-average cost, have students solve sample exercises, assign students to independently identify similar problem formats, and assign students to solve problems independently.

Materials Needed:

1. Table of Cost of Merchandise Available for Sale (COMAS) (attached)
2. Demonstration outline (attached)
3. Exercise for Group Solving (attached)
4. Computers with Internet access to UIL Accounting website, Archived Exams (or printed versions of UIL tests from prior years)
5. Problem Assignment (attached)

Procedures and Activities:

The teacher will—

- review the concept of a merchandising business and compare and contrast to a service business
- outline and review the components of the income statement for a merchandising business
- review the details of the formula of cost of merchandise sold using chalkboard or other visual device
- stress the difference between the perpetual method and the periodic method
- using the Table of Cost of Merchandise Available for Sale (COMAS), have students identify the number and dollar cost of various components as outlined in the demonstration
- review the theory of the valuation method referred to as FIFO (First-In; First-Out)

- use the Table of COMAS and explain that EI under FIFO is from the bottom of the table moving upwards
- demonstrate the FIFO calculation process (see demonstration outline attached)
- review the theory of the valuation method referred to as LIFO (Last-In; First-Out)
- use the Table of COMAS and explain that EI under LIFO is from the top of the table moving downwards
- demonstrate the LIFO calculation process per the demonstration outline
- review the theory of the valuation method referred to as Weighted-Average Cost
- use the Table of COMAS and demonstrate the Weighted-Average Cost calculation process
- emphasize the fact that the choice of the method is a business decision; and once selected should be used consistently for comparability
- emphasize the fact that even if you are asked to solve for cost of merchandise sold, it is often faster to solve for ending inventory first; then subtract ending inventory from cost of merchandise available for sale
- calculate the various gross profit amounts using the three methods
- have students participate in the group-solving of the Exercise

Independent Practice:

The teacher will—

- provide students with access to the Internet website for UIL Accounting's Archived Exams (or printed versions of prior year contest materials)
- assign students to investigate prior year contest exams to find any 3 problems similar to the ones in the exercises of this lesson
- have students print those problems, solve independently, compare answers to the keys provided online, and correct as needed
- have students demonstrate to the class how to solve one of the problems they found in prior UIL contest materials
- assign students to solve the Problems at the end of this lesson

Assessment:

- evaluation of the 3 problems selected by the student
- evaluation of the Problems assigned

Table for Cost of Merchandise Available for Sale

(These three tables are identical except for the column headings FIFO, LIFO, and Weighted-Average Cost and are provided for student note-taking.)

		# of Units	Cost per Unit	Extended Amount	FIFO	
Jan 1	Beginning Inventory	7	8.45	59.15		
Jan	Purchase	15	8.60	129.00		
Mar	Purchase	25	8.65	216.25		
Apr	Purchase	14	8.70	121.80		
June	Purchase	9	8.75	78.75		
July	Purchase	16	8.80	140.80		
Nov	Purchase	6	8.90	53.40		
Dec	Purchase	5	8.95	44.75		
	Available	97		843.90		

		# of Units	Cost per Unit	Extended Amount	LIFO	
Jan 1	Beginning Inventory	7	8.45	59.15		
Jan	Purchase	15	8.60	129.00		
Mar	Purchase	25	8.65	216.25		
Apr	Purchase	14	8.70	121.80		
June	Purchase	9	8.75	78.75		
July	Purchase	16	8.80	140.80		
Nov	Purchase	6	8.90	53.40		
Dec	Purchase	5	8.95	44.75		
	Available	97		843.90		

		# of Units	Cost per Unit	Extended Amount	Weighted Average Cost	
Jan 1	Beginning Inventory	7	8.45	59.15		
Jan	Purchase	15	8.60	129.00		
Mar	Purchase	25	8.65	216.25		
Apr	Purchase	14	8.70	121.80		
June	Purchase	9	8.75	78.75		
July	Purchase	16	8.80	140.80		
Nov	Purchase	6	8.90	53.40		
Dec	Purchase	5	8.95	44.75		
	Available	97		843.90		

Demonstration Using Table for COMAS:

Have students identify:
1. the number of units on hand at the beginning of the year (answer 7)
2. the number of units available for sale (97)
3. the number of units purchased during the year (answer 90) (97 – 7)
4. the dollar value of beginning inventory ($59.15)
5. the dollar value of cost of merchandise available for sale ($843.90)
6. the dollar value of purchases during the year ($784.75) (calculation: 843.90 – 59.15)

Assumptions for all Three Methods:

- During the year, 87 units were sold; and a physical inventory shows there are 10 units remaining in ending inventory
- The units were sold at a sales price of $15 each

		# of Units	Cost per Unit	Extended Amount	FIFO Theory	FIFO Amt	Calculation
Jan 1	Beg. Inv.	7	8.45	59.15	first in is the first out		
Jan	Purchase	15	8.60	129.00	(or sold) so COMS		
Mar	Purchase	25	8.65	216.25	starts at the top		
Apr	Purchase	14	8.70	121.80	and moves down		
June	Purchase	9	8.75	78.75			
July	Purchase	16	8.80	140.80	while, EI starts		
Nov	Purchase	6	8.90	53.40	from the bottom	44.50	5 x 8.90
Dec	Purchase	5	8.95	44.75	and goes UP	44.75	5 x 8.95
		97		843.90			

Calculations FIFO:

1. Solve for the number of units in ending inventory (97 available less 87 sold = 10) and take note that this agrees to the physical inventory taken.
2. Calculate the cost of ending inventory (EI) using FIFO:

5	units x 8.95	=	44.75
5	units x 8.90	=	44.50
10		=	89.25

		# of Units	Cost per Unit	Extended Amount	LIFO Theory	LIFO Amt	Calculation
Jan 1	Beg. Inv.	7	8.45	59.15	last in is the first out	59.15	7 x 8.45
Jan	Purchase	15	8.60	129.00	(or sold) so EI	25.80	3 x 8.60
Mar	Purchase	25	8.65	216.25	starts at the top		
Apr	Purchase	14	8.70	121.80	and moves down		
June	Purchase	9	8.75	78.75			
July	Purchase	16	8.80	140.80			
Nov	Purchase	6	8.90	53.40	COMS starts at the		
Dec	Purchase	5	8.95	44.75	bottom and goes up		
		97		843.90			

Calculations LIFO:

1. Number in EI is still the same = 10
2. Calculate the cost of ending inventory (EI) using LIFO:

7	units x 8.45	=	59.15
3	units x 8.60	=	25.80
10		=	84.95

Calculations Weighted-Average Cost:

1. Number in EI is still the same = 10
2. Determine the weighted-average cost:
   COMAS $843.90 / number of units available 97 = $8.70
3. Calculate the cost of ending inventory (EI) using Weighted-Average Cost:
   10 units x 8.70 average cost per unit = 87.00

Calculations for Gross Profit:

	FIFO		LIFO		W-Avg Cost	
Sales (87 units x $15)		1,305.00		1,305.00		1,305.00
COMAS	843.90		843.90		843.90	
Ending Inventory	89.25		84.95		87.00	
COMS		754.65		758.95		756.90
Gross Profit		550.35		546.05		548.10

Exercise for Group Solving:

Group 5 (from the 2011 UIL Regional Contest)

E-Fitness has the following information about a runner's belt for electronics that sells for $21.95 each. During the year E-Fitness sold 102 units.

		Number of Units	Cost per Unit	Extended Amount
Jan 1	Beginning Inventory	3	10.00	30.00
Jan	Purchase	1	10.10	10.10
Feb	Purchase	30	10.20	306.00
Mar	Purchase	26	10.60	275.60
Apr	Purchase	7	10.80	75.60
Oct	Purchase	40	10.80	432.00
Nov	Purchase	1	11.00	11.00
Dec	Purchase	2	11.20	22.40
		110		1162.70

For questions 29 through 31, write the identifying letter of the correct response on your answer sheet.

29. What is the amount of gross profit for the year if the FIFO method of inventory valuation is used?
A. $1,075.30 B. $1,076.20 C. $1,157.10 D. $1,162.70 E. $1,163.60

*30. What is the amount of gross profit for the year if the LIFO method of inventory valuation is used?
A. $1,076.20 B. $1,081.80 C. $1,157.10 D. $1,162.70 E. $1,163.60

31. What is the amount of gross profit for the year if the average cost method of inventory valuation is used?
A. $1,060.76 B. $1,076.20 C. $1,078.14 D. $1,160.76 E. $1,162.70

Assignment Problem:

Group 5 (Taken from the 1999 Regional Contest)
The following data pertains to a single inventory item. During the month of April 1,100 units were sold for $7.95 each.

			Number of Units	Cost per Unit	
April	1	Beginning Inventory	250	4.60	
	2	Purchase	100	5.50	
	9	Purchase	300	5.25	
	16	Purchase	200	5.25	
	23	Purchase	350	5.50	
	30	Purchase	200	5.50	

For questions 36 through 43, write the correct amount for each on your answer sheet.

36. Using the periodic inventory system and the LIFO inventory costing method, what is the cost of the ending inventory?

37. Using the periodic inventory system and the LIFO inventory costing method, what is the cost of merchandise sold?

38. Using the periodic inventory system and the FIFO inventory costing method, what is the cost of the ending inventory?

39. What is the total cost of merchandise available for sale for the month of April?

40. What is the cost per unit of the merchandise available for sale for April using the weighted-average method?

41. What is the amount of gross profit for April using the LIFO inventory costing method?

42. What is the amount of gross profit for April using the FIFO inventory costing method?

43. What is the amount of gross profit for April using the weighted-average inventory costing method?

Solutions for Exercise:

Units Available 110 less units sold 102 = 8 units in EI

29. Choice E

FIFO		
Sales 102 units x $21.95		2,238.90
COMAS (given)	1,162.70	
EI 22.40+11.00+(5 x 10.80)	87.40	
COMS		1,075.30
Gross Profit		1,163.60

30. Choice C

LIFO		
Sales 102 units x $21.95		2,238.90
COMAS (given)	1,162.70	
EI 30.00+10.10+(4 x 10.20)	80.90	
COMS		1,081.80
Gross Profit		1,157.10

31. Choice D

Weighted-Average Cost		
Sales 102 units x $21.95		2,238.90
COMAS (given)	1,162.70	
EI (1162.70/110) x 8 units	84.56	
COMS		1,078.14
Gross Profit		1,160.76

Solutions for Assignment Problem:

Units available 1,400 less units sold 1,100 = EI 300 units

		# of Units	Cost per Unit		FIFO	LIFO
1	BI	250	4.60	*1150*		*1150*
2	Purch	100	5.50	*550*		*50@5.50=275*
9	Purch	300	5.25	*1575*		
16	Purch	200	5.25	*1050*		
23	Purch	350	5.50	*1925*	*100@5.50=550*	
30	Purch	200	5.50	*1100*	*1100*	
	COMAS	*1400*		*7350*	*←Q#39*	
					EI=$1,650	*EI=$1,425*

FIFO			
Sales 1,100 units x $7.95		8,745.00	
COMAS	7,350.00		
EI	1,650.00		Q#38
COMS		5,700.00	
Gross Profit		3,045.00	Q#42

LIFO			
Sales 1,100 units x $7.95		8,745.00	
COMAS	7,350.00		
EI	1,425.00		Q#36
COMS		5,925.00	Q#37
Gross Profit		2,820.00	Q#41

Weighted-Average Cost			
Sales 1,100 units x $7.95		8,745.00	
COMAS	7,350.00		
EI (7,350/1,400) = 5.25 $5.25 x 300 units	1,575.00		Q#40
COMS		5,775.00	
Gross Profit		2,970.00	Q#43

Answers:

36	1,425
37	5,925

40	5.25
41	2,820

38	1,650
39	7,350

42	3,045
43	2,970