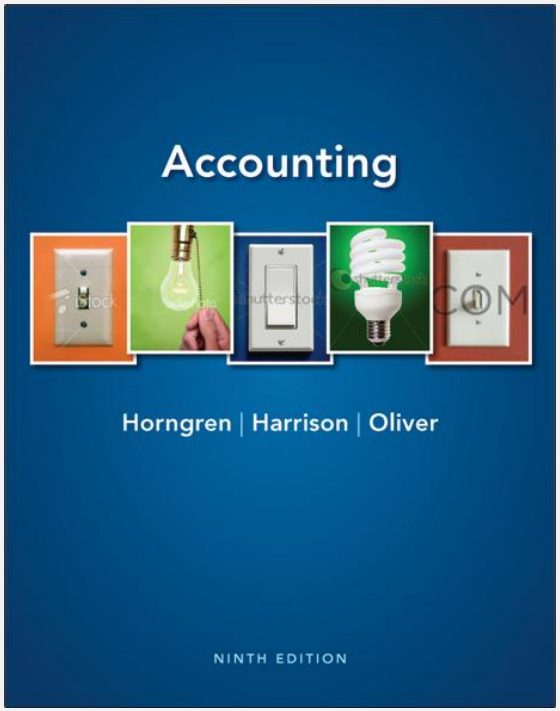
Long-Term Liabilities, Bonds Payable, and Classification of Liabilities on the Balance Sheet

Chapter 11



Learning Objectives

1. Journalize transactions for long-term notes payable and mortgages payable
2. Describe bonds payable
3. Measure interest expense on bonds using the straight-line amortization method
4. Report liabilities on the balance sheet
5. Use the time value of money: present value of a bond and effective-interest amortization (see Appendix 11A)
6. Retire bonds payable (see Appendix 11B)

Journalize transactions for long-term notes payable and mortgages payable

Long-Term Notes Payable

- Most long-term notes are paid in installments
  - Principal due within a year–a current asset

2013			
May 1	Cash (A+)	20,000	
	Long-term notes payable (L+)		20,000
May 1	Long-term notes payable (L–)	5,000	
	Current portion of long-term notes payable (L+)		5,000

  - Principal not due with in a year–long-term asset
  - Current plus long-term equals total amount of debt
  - Interest accrues as normal

Long-Term Notes Payable: Payments

- Yearly payment would include:
  - Installment amount
  - Previously accrued interest at year-end adjusting
  - Accrued interest since year-end adjusting
- Journal entry:

2014			
May 1	Interest expense ($20,000 × 0.06 × 4/12) (E+)	400	
	Interest payable (L–)	800	
	Long-term notes payable (L–)	5,000	
	Cash (A–)		6,200

Long-Term Notes Payable: Payments

- Entry included a debit to Long-term notes payable
- Current portion of long-term notes is unchanged

Interest payable

		100	May 31, 2013
		700	Dec 31, 2013
		41	Dec 31, 2013
May 1, 2014	800		
		41	Bal May 31, 2014

Current portion of long-term notes payable

		5,000	May 1, 2013
		5,000	Bal May 1, 2014

Long-term notes payable

May 1, 2013	5,000	20,000	May 1, 2013
May 1, 2014	5,000		
		10,000	Bal May 1, 2014

- Net long-term notes payable equals $15,000
  - Current portion $5,000
  - Long-term portion $10,000

Mortgages Payable

- Debts backed with a security interest in specific property
- Title transfers if the mortgage isn't paid
- Differs from notes payable
  - Secure interest in property
  - Specifies monthly payment
- Reclassify current payments from long-term payments

Amortization Schedule

- Details each payment's allocation between principal and interest

Payment #	Date	Payment	Interest Expense (Principal × 6% × 1/12)	Principal	Mortgage Balance
Loan	1/1/2013				100,075.00
1	1/31/2013	600.00	500.38	99.62	99,975.38
2	2/28/2013	600.00	499.88	100.12	99,875.26
3	3/31/2013	600.00	499.38	100.62	99,774.64
4	4/30/2013	600.00	498.87	101.13	99,673.51
5	5/31/2013	600.00	498.37		571.88
6	6/30/2013	600.00	497.86		469.74
7	7/31/2013	600.00	497.35		367.09
8	8/31/2013	600.00	496.84		263.93
9	9/30/2013	600.00	496.32		160.25
10	10/31/2013	600.00	495.80	10 20	99,056.05
11	11/30/2013	600.00	495.28	10 72	98,951.33
12	12/31/2013	600.00	494.76	10 24	98,846.09
	2013 totals	7,200.00	5,971.09	1,228.91	

Amount to be reclassified to a current liability.

Mortgages Payable

- Reclassification entry

2012			
Dec 31	Mortgage payable (L–)	1,228.91	
	Current portion of mortgage payable (L+)		1,228.91

  - Usually made at year end
  - Immaterial month-to-month
- Mortgage payment includes
  - Interest expense from amortization table
  - Principal reduction form amortization table
  - Payment amount agreed upon

2013			
Jan 31	Interest expense ($100,075 × 0.06 × 1/12) (E+)	500.38	
	Mortgage payable ($600.00 – $500.38) (L–)	99.62	
	Cash (A–)		600.00

S11-1: ACCOUNTING FOR A LONG-TERM NOTE PAYABLE

On January 1, 2014, LeMay-Finn, Co., signed a $200,000, five-year, 6% note. The loan required LeMay-Finn to make payments on December 31 of $40,000 principal plus interest.

1. Journalize the issuance of the note on January 1, 2014.

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jan 1	Cash	200,000	
	Long-term notes payable		200,000

S11-1: ACCOUNTING FOR A LONG-TERM NOTE PAYABLE

(Continued)

2. Journalize the reclassification of the current portion of the note payable.

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jan 1	Long-term notes payable	40,000	
	Current portion of long-term notes payable		40,000

S11-1: ACCOUNTING FOR A LONG-TERM NOTE PAYABLE

(Continued)

3. Journalize the first note payment on December 31, 2014.

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jan 1	Interest expense	12,000	
	Long-term notes payable	40,000	
	Cash		52,000

Describe bonds payable

Bonds Payable

- Long-term liability
- Financing in large amounts
- Multiple lenders = bondholders
- Bond certificate evidence of loan
  - Amount borrowed (principal)
  - Maturity date
  - Interest rate
- Bondholders receive interest
  - Normally two times a year
- Principal paid at maturity

Bond Terminology

- Principal–amount to be paid back
  - Also called maturity value, face value or par value
- Maturity date–date of principal payback
- Stated interest rate–also termed face rate, coupon rate, or nominal rate
  - Rate of interest paid to bondholders
  - Cash payments during life of bond
- Like a note, each bond contains
  - Principal
  - Rate
  - Time

Types of Bonds

- Term bonds
  - All mature at same date
- Serial bonds
  - Mature in installments at regular intervals
- Secured bonds
  - Backed by assets if company fails to pay
- Debenture
  - Unsecured; not backed by company's assets

Bond Pricing (Selling Price)

- Fluctuates like stock
  - Based upon maturity date and interest rate
- Maturity (Par) value
  - 100% face value
- Discount (Bond discount)
  - Below 100% face
- Premium (Bond premium)
  - Above 100% face
- Price does not affect payment at maturity

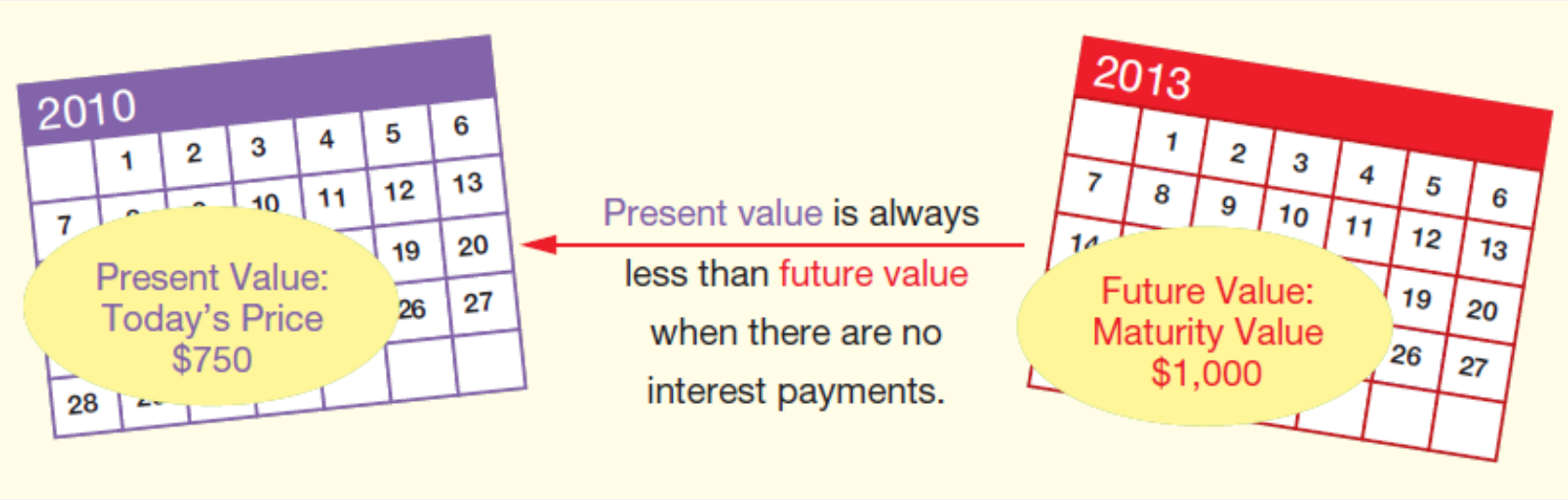
Bond Prices

- Quoted as a percent of maturity value
  - A $1,000 bond quoted at 101.5 would sell for $1,015 *($1,000 X 1.015)*
  - A $1,000 bond quoted at 89.75 would sell for $897.50 *($1,000 X .8975)*
- Issue price determines amount received
- Payments equal face amount of principal and interest

Bonds	Volume	High	Low	Close
SMT 9% of 18	12	79.5	78.45	79.5

Present Value

- Money earns income over time
  - Time value of money
- Amount invested today yields more in the future
  - Interest accumulates



Bond Interest Rates

Stated interest rate

- Rate used to calculate interest the borrower pays each year
- Remains constant

Market interest rate

- Rate investors demand for loaning money
- Varies daily

Stated interest rate		Market interest rate		Issue price of bonds payable
9%	=	9%	→	Maturity value
9%	<	10%	→	Discount (below maturity value)
9%	>	8%	→	Premium (above maturity value)

S11-3: DETERMINING BOND PRICES

Bond prices depend on the market rate of interest, stated rate of interest, and time. Determine whether the following bonds payable will be issued at maturity value, at a premium, or at a discount.

a. The market interest rate is 6%. Boise, Corp., issues bonds payable with a stated rate of 5 3/4%.

Discount

b. Dallas, Inc., issued 8% bonds payable when the market rate was 7 1/4%.

Premium

S11-3: DETERMINING BOND PRICES

(Continued)

c. Cleveland Corporation issued 7% bonds when the market interest rate was 7%.

Par value

d. Atlanta Company issued bonds payable that pay stated interest of 7 1/2%. At issuance, the market interest rate was 9 1/4%.

Discount

S11-4: PRICING BONDS

Bond prices depend on the market rate of interest, stated rate of interest, and time.

1. Compute the price of the following 7% bonds of United Telecom.
   a. $500,000 issued at 76.75. $383,750

   b. $500,000 issued at 104.75. $523,750

   c. $500,000 issued at 95.75. $478,750

   d. $500,000 issued at 104.25. $521,259

Measure interest expense on bonds using the straight-line amortization method

Issuing Bonds Payable at Maturity (Par) Value

- Maturity value equals 100% bond value
- Cash received equals principal amount of bond
- Issuing journal entry

2013			
Jan 1	Cash (A+)	100,000	
	Bonds payable (L+)		100,000
	Issued bonds.		

- Interest payments–semi-annually
  - $100,000 x 9% x 6/12 = $4,500

2013			
Jun 30	Interest expense ($100,000 × 0.09 × 6/12) (E+)	4,500	
	Cash (A–)		4,500
	Paid semiannual interest.		

Issuing Bonds Payable at Maturity (Par) Value

- Interest payments continue over the bond's life
  - Every 6 months interest is paid
- At maturity date, the principal is paid back

2018			
Jan 1	Bonds payable (L–)	100,000	
	Cash (A–)		100,000
	Paid off bonds at maturity.		

S11-5: JOURNALIZING BOND TRANSACTIONS

Vernon Corporation issued a $110,000, 6.5%, 15-year bond payable.

1. Journalize the following transactions for Vernon and include an explanation for each entry
   a. Issuance of the bond payable at par on January 1, 2012

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jan 1	Cash	110,000	
	Bonds payable		110,000
	Issued bonds payable.		

S11-5: JOURNALIZING BOND TRANSACTIONS

Vernon Corporation issued a $110,000, 6.5%, 15-year bond payable

1. Journalize the following transactions for Vernon and include an explanation for each entry:
   b. Payment of semiannual cash interest on July 1, 2012

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jul 1	Interest expense	3,575	
	Cash		3,575
	Paid semiannual interest.		

S11-5: JOURNALIZING BOND TRANSACTIONS

(Continued)

1. Journalize the following transactions for Vernon and include an explanation for each entry:
   c. Payment of the bond payable at maturity. (Give the date.)

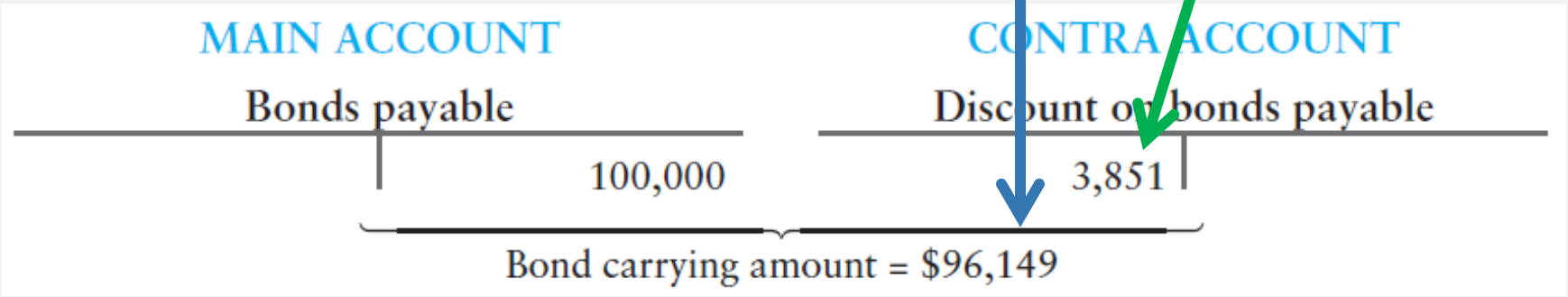
Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jan 1 2027	Bonds payable	110,000	
	Cash		110,000
	Paid off bonds payable at maturity.		

Issuing Bonds Payable at a Discount

- Market interest 10%, bond stated rate 9%
- Cash received is less than the principal amount
- The journal entry

2013				
Jan 1	Cash ($100,000 × 0.96149)	(A+)	96,149	
	Discount on bonds payable	(CL+)	3,851	
	Bonds payable	(L+)		100,000
	Issued bonds at a discount.			

- Bond account balances



Issuing Bonds Payable at a Discount

- Balance sheet presentation
  - Immediately after issuance

Long-term liabilities:		
Bonds payable	$100,000	
Less: Discount on bonds payable	3,851	$96,149

- Interest payments–semi-annually
  - $100,000 X 9% X 6/12 = $4,500

What happens to the $3,851 discount?

Issuing Bonds Payable at a Discount

- The discount is amortized
  - Gradual reduction of over time
  - Dividing into equal amounts for each interest period
  - The discount becomes additional interest expense
- Straight-line amortization
  - Similar to straight-line depreciation
  - Bond life yields the interest periods
    - 5 year life at 2 times a year = 10 periods
    - Discount divided by periods = amortized amount

2013			
Jun 30	Interest expense (E+)	4,885	
	Cash ($100,000 × 0.09 × 6/12) (A–)		4,500
	Discount on bonds payable ($3,851 × 1/5 yrs × 6/12) (CL–)		385

Issuing Bonds Payable at a Discount

- Interest payments continue over the bond's life
  - Every 6 months, interest is paid
  - Discount is amortized each payment period, reducing the account
  - At maturity, the Discount account is zero and the carrying value is equal to maturity value
- At maturity date, the principal is paid back

2018			
Jan 1	Bonds payable (L–)	100,000	
	Cash (A–)		100,000
	Paid off bonds at maturity.		

S11-7: JOURNALIZING BOND TRANSACTIONS

Origin, Inc. issued a $40,000, 5%, 10-year bond payable at a price of 90 on January 1, 2012.

1. Journalize the issuance of the bond payable on January 1, 2012.

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jan 1	Cash	36,000	
	Discount on bonds payable	4,000	
	Bonds payable		40,000

S11-7: JOURNALIZING BOND TRANSACTIONS

(Continued)

2. Journalize the payment of semiannual interest and amortization of the bond discount or premium on July 1, 2012, using the straight-line method to amortize the bond discount or premium.

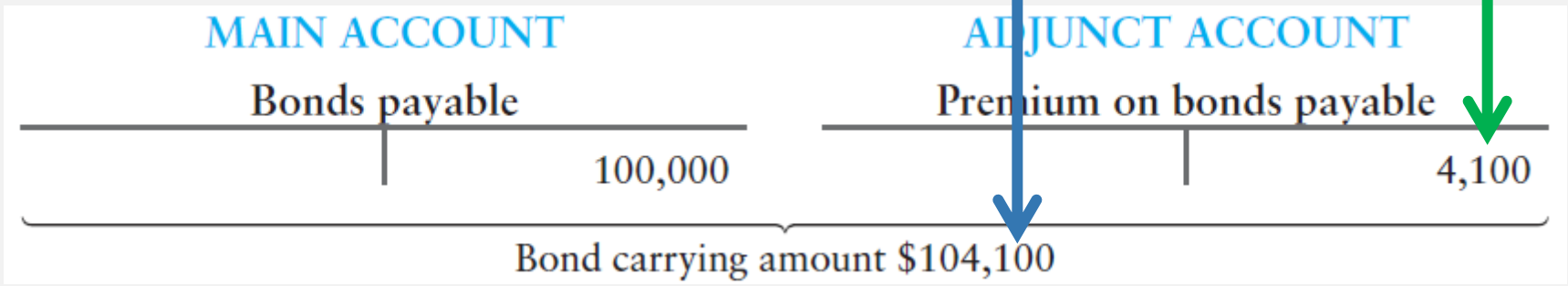
Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jan 1	Interest expense	1,200	
	Discount on bonds payable		200
	Cash		1,000

Issuing Bonds Payable at a Premium

- Market interest 8%, bond stated rate 9%
- Investors pay a premium to acquire them
- Cash received is more than the principal amount
- Issuing journal entry

2013			
Jan 1	Cash ($100,000 × 1.041) (A+)	104,100	
	Bonds payable (L+)		100,000
	Premium on bonds payable (AL+)		4,100
	Issued bonds at a premium.		

- Bond account balances



Issuing Bonds Payable at a Premium

- Balance Sheet presentation
  - Immediately after issuance

Long-term liabilities:		
Bonds payable	$100,000	
Add: Premium on bonds payable	4,100	$104,100

- Interest payments–semi-annually
  - $100,000 X 9% X 6/12 = $4,500

What happens to the $4,100 premium?

Issuing Bonds Payable at a Premium

- The premium is amortized
  - Gradual reduction of over time
  - Dividing into equal amounts for each interest period
  - The premium reduces Interest expense
- Straight-line amortization
  - Similar to straight-line depreciation
  - Bond life yields the interest periods
    - 5 year life at 2 times a year = 10 periods
    - Premium divided by periods = amortized amount

2013			
Jun 30	Interest expense (E+)	4,090	
	Premium on bonds payable ($4,100 × 1/5 yrs × 6/12) (CL–)	410	
	Cash ($100,000 × 0.09 × 6/12) (A–)		4,500

Issuing Bonds Payable at a Premium

- Interest payments continue over the bond's life
  - Every 6 months, interest is paid
  - Premium is amortized each payment period, reducing the account
  - At maturity, the Premium account is zero and the carrying value is equal to maturity value
- At maturity date, the principal is paid back

2018			
Jan 1	Bonds payable (L–)	100,000	
	Cash (A–)		100,000
	Paid off bonds at maturity.		

S11-8: JOURNALIZING BOND TRANSACTIONS

Worthington Mutual Insurance Company issued a $50,000, 5%, 10-year bond payable at a price of 108 on January 1, 2012.

1. Journalize the issuance of the bond payable on January 1, 2012.

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jan 1	Cash	54,000	
	Discount on bonds payable		4,000
	Bonds payable		50,000

S11-8: JOURNALIZING BOND TRANSACTIONS

(Continued)

2. Journalize the payment of semiannual interest and amortization of the bond discount or premium on July 1, 2012, using the straight-line method to amortize the bond discount or premium.

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
Jul 1	Interest expense	1,050	
	Premium on bonds payable	200	
	Cash		1,250

Adjusting Entries for Bonds Payable

- Interest payments seldom occur at year-end
  - Interest must be accrued at year-end
  - A payable account is credited for the liability
  - Each interest entry must include amortization of discount or premium

2013			
Dec 31	Interest expense (E+)	2,050	
	Interest payable ($100,000 × 0.08 × 3/12) (L+)		2,000
	Discount on bonds payable ($2,000 × 1/10 × 3/12) (CL–)		50

October, November, and December

- Actual interest payment date

2014			
Mar 31	Interest payable (from Dec 31) (L–)	2,000	
	Interest expense (E+)	2,050	
	Cash ($100,000 × 0.08 × 6/12) (A–)		4,000
	Discount on bonds payable ($2,000 × 1/10 × 3/12) (CL–)		50

January, February, and March

Bonds Issued Between Interest Payment Dates

- Interest accrues from stated issue date
- Payments occur on stated interest payment dates
  - Full payment to bondholders, regardless of their purchase date
    - Payments cannot be split, full payments are made
  - Interest accrued prior to issuance is collected at actual issue date
  - Journal entry

2013			
Apr 1	Cash (A+)	101,500	
	Bonds payable (L+)		100,000
	Interest payable ($100,000 × 0.06 × 3/12) (L+)		1,500
	Issued bonds three months after the planned issuance date of the bonds.		

Bonds Issued Between Interest Payment Dates

- Next interest payment date
  - Interest payment recorded for normal six months
  - Interest expense is equal to three months issued
  - Interest payable decreased for the cash received at issue date

2013			
Jun 30	Interest payable (from April 1) (L–)	1,500	
	Interest expense (for April, May, June) (E+)	1,500	
	Cash ($100,000 × 0.06 × 6/12) (A–)		3,000
	Paid interest.		

  - Cash payment is always equal to the six month period

S11-10: JOURNALIZING BOND TRANSACTIONS—ISSUANCE BETWEEN INTEREST PAYMENT DATES

Silk Realty issued $300,000 of 8%, 10-year bonds payable at par value on May 1, 2012, four months after the bond's original issue date of January 1, 2012.

1. Journalize the issuance of the bonds payable on May 1, 2012.

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
May 1	Cash	308,000	
	Bonds payable		300,000
	Interest payable		8,000

S11-10: JOURNALIZING BOND TRANSACTIONS—ISSUANCE BETWEEN INTEREST PAYMENT DATES

(Continued)

2. Journalize the payment of the first semiannual interest amount on July 1, 2012.

Journal Entry			
DATE	**ACCOUNTS**	**DEBIT**	**CREDIT**
May 1	Interest payable	8,000	
	Interest expense	4,000	
	Cash		12,000

Report liabilities on the balance sheet

Liabilities on the Balance Sheet

- Reports all current and long-term liabilities

* Amounts assumed

Current liabilities:*	
Accounts payable	$ 17,000
Employee income tax payable	0
FICA tax payable (579 + 579)	8
Payable to health insurance	0
Payable to United Way	20
Employee benefits payable	1,500
Interest payable (41 + 100 + 700)	841
Sales tax payable	600
Unearned service revenue	400
Estimated warranty payable	700
Short-term notes payable	700
Current portion mortgage payable	1,305
Current portion of long-term notes payable	5,000
Total current liabilities	$ 31,404
Long-term liabilities:	
Long-term notes payable	15,000
Mortgage payable	97,541
Bonds payable, net of discount, $3,081	96,919
Total long-term liabilities	$209,460
Total liabilities	$240,864

Payroll liabilities recorded

Current portion of long-term liabilities

Long-term liabilities

S11-12: PREPARING THE LIABILITIES SECTION OF THE BALANCE SHEET

Blue Socks' account balances at June 30, 2014, include the following:

Data Table			
Cash	$ 138,000	Salary payable	$ 6,500
Long-term notes payable	117,000	Building, net of depreciation	780,000
Accounts payable	13,200	Interest payable (due next year)	2,400
Current portion of long-term notes payable	8,000	FICA taxes payable	1,900
Common stock	400,000	Accounts receivable	145,000
Premium on bonds payable	12,000	Bonds payable (Maturity date 12/31/2020)	400,000
Sales taxes payable	4,000	Retained earnings	98,000

Prepare the liabilities section of Blue Socks' balance sheet at June 30, 2014.

S11-12: PREPARING THE LIABILITIES SECTION OF THE BALANCE SHEET

Liabilities		
Current liabilities:		
Accounts payable		$ 13,200
FICA taxes payable		1,900
Salary payable		6,500
Interest payable		2,400
Sales taxes payable		4,000
Current portion of long-term notes payable		8,000
Total current liabilities		36,000
Long-term liabilities:		
Long-term notes payable		117,000
Bonds payable, including premium of $12,000		412,000
Total long-term liabilities		529,000
Total liabilities		$ 565,000

Use the time value of money: present value of a bond and effective-interest amortization (see Appendix 11A)

The Time Value of Money: Present Value of a Bond and Effective-Interest Amortization

- Time value of money
  - Money earns interest over time
- Interest–cost of using money
  - Borrower–interest expense price of using money
  - Lender–interest revenue earned from lending

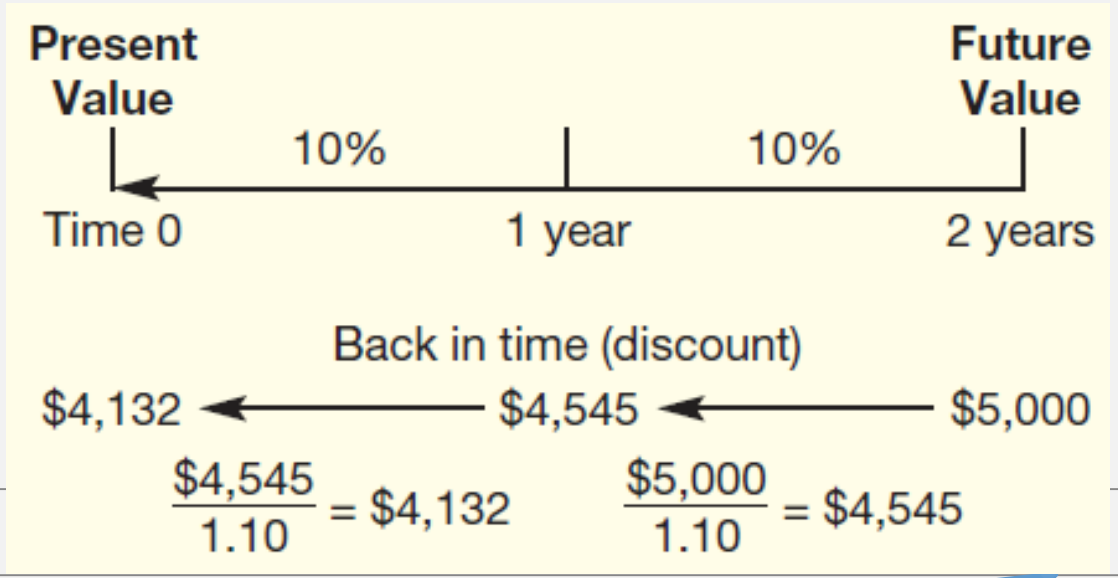
Present Value

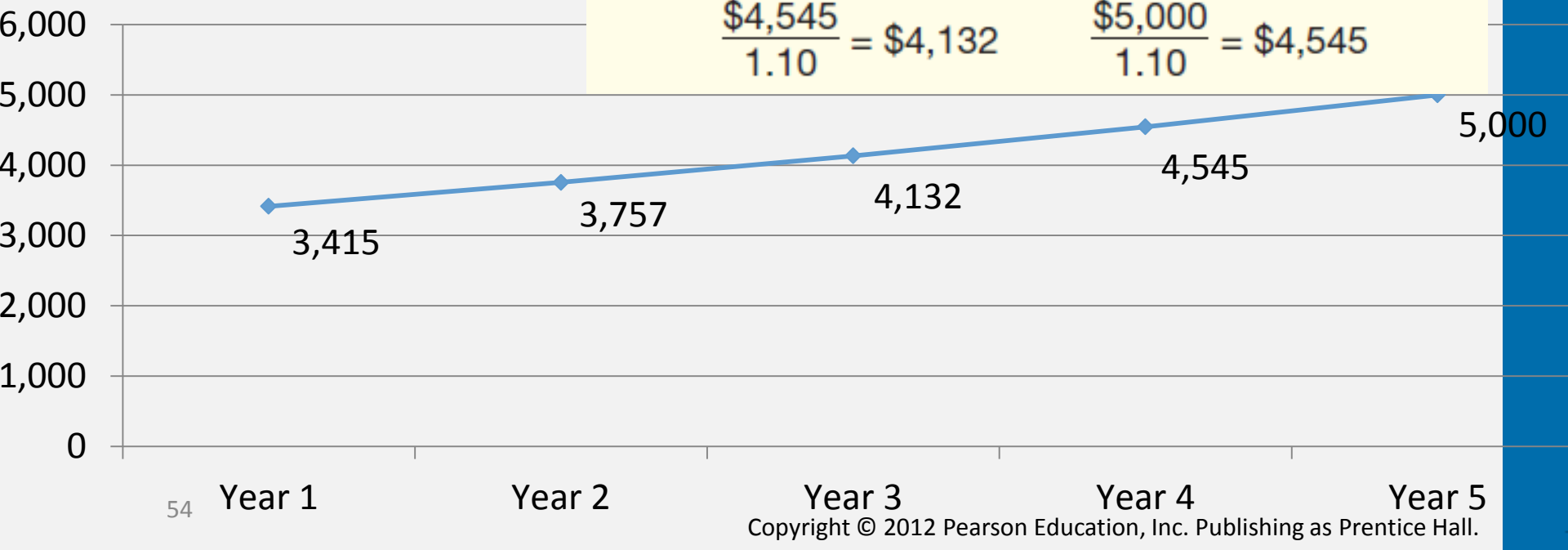
- Current value of some future amount
  - Bond payable maturity value = future amount
  - Issue price of bonds = present value
- Present value computation depends on three factors:
  - The amount to be received in the future
  - The time span between your investment and your future receipt
  - The interest rate
- Called discounting
  - Present value always less than future value

Present Value Example

- $5,000 , 10% interest, 1 year – 2 year
- Formula

$$\frac{\text{Future value}}{(1 + \text{Interest rate})}$$





Present Value of $1 Table

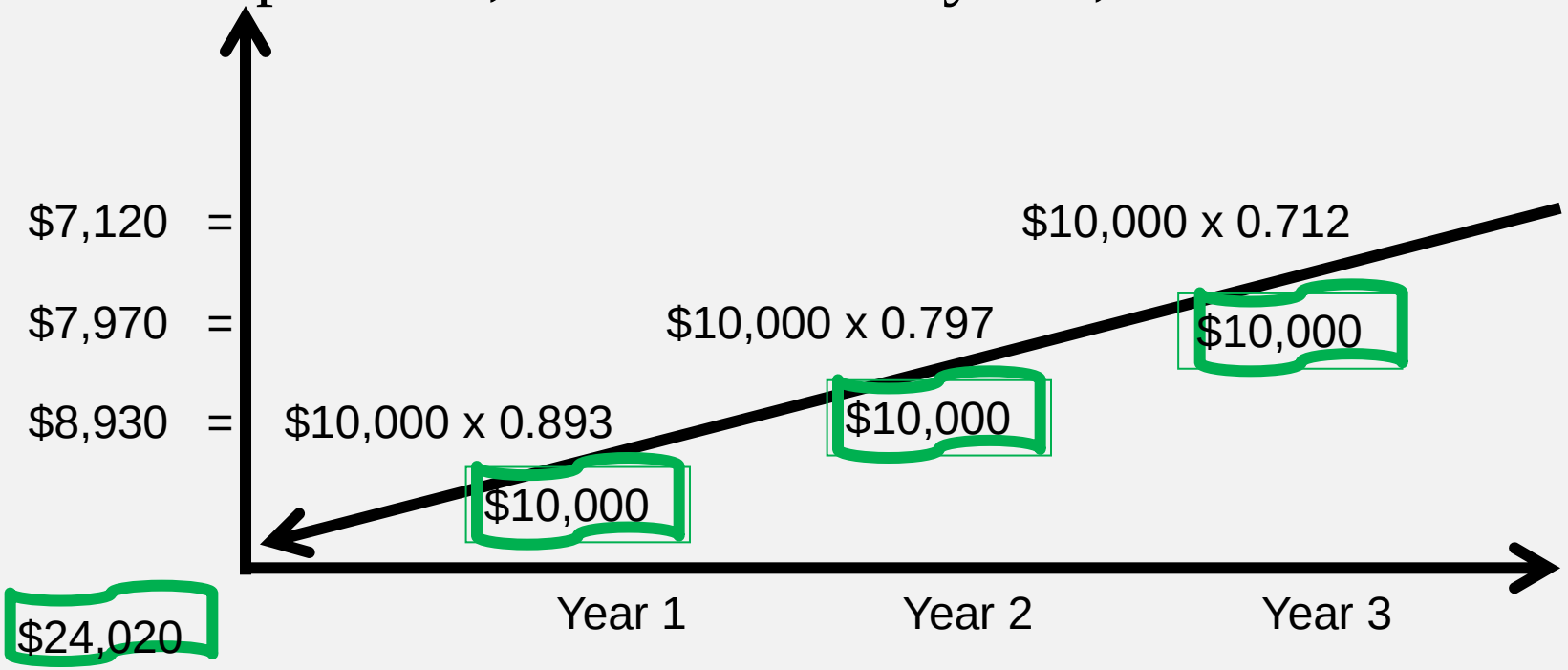
- $5,000 , 10% interest, 1 year – 2 year

Present Value Table										
	1.00%	2.00%	3.00%	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209

- 1 year–0.9091
  - 0/9091 = 1/1.10
  - 0.9091 times $5,000 = $4,545
- 2 year–0.8264
  - 0.8264 times $5,000 = $4,132

Present Value of Annuity of $1

- Multiple receipts of an equal amount at equal time intervals
- Example: $10,000 received 3 years, 12% interest



- Deposit amount $24,020 @ 12% to withdraw $10,000 for 3 years.

Present Value of Annuity of $1

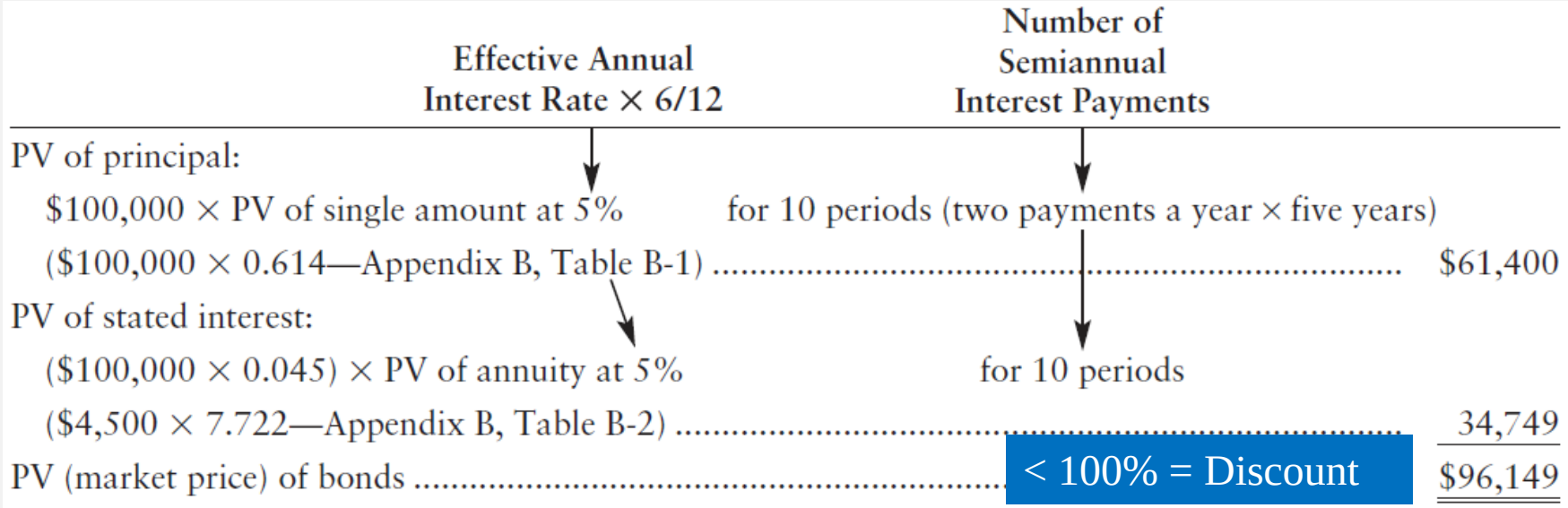
- Adding the PV factors (0.893 + 0.797 + 0.712) equals 2.402
  - 2.402 X $10,000 = 24,020
- Easier way, use Present Value of Annuity Table
  - Factors already calculated by year and percentage

n	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638

- Both resent Value of a $1 and Present Value of Annuity of $1 are used to calculate price of bonds

Present Value of Bonds Payable

- Pricing bonds: Discount
  - Bonds involve a present value of single amount–the principal amount, and
  - Present value of annuity–interest payments over the life of the bond
- Sum of the two equals price of the bond



Present Value of Bonds Payable

- Pricing bonds: Premium
  - Same steps
- Sum of the two equals price of the bond

	Effective Annual Interest Rate × 6/12	Number of Semiannual Interest Payments	
PV of principal:			
$100,000 × PV of single amount at 4%		for 10 periods	$ 67,600
($100,000 × 0.676—Appendix B, Table B-1)			
PV of stated interest:			
($100,000 × 0.045) × PV of annuity at 4%		for 10 periods	
($4,500 × 8.111—Appendix B, Table B-2)			36,500
PV (market price) of bonds	> 100% = Premium		$104,100

Effective-Interest Method of Amortization

- A more precise way of amortizing bonds
- GAAP requires that interest expense be measured using the effective-interest method
  - Total interest expense is the same
  - Interest expense per year is different
- Accounts debited and credited are the same
- Amounts will be different

Effective-Interest Amortization for a Bond Discount

- Assume that a $100,000 9% bond is issued for $96,149 when the market rate is 10%

PANEL B—Amortization Table

	A	B	C	D	E
End of Semiannual Interest Period	Interest payment = stated rate x maturity value	Interest expense = market rate x carrying value	Amortization amount is difference between payment and expense	Discount and Carrying Value in the ledger from the journal entry	
Jan 1, 2013				$3,851	$ 96,149
Jun 30, 2013	$4,500	$4,807	$307	3,544	96,456
Dec 31, 2013	4,500	4,823	323	3,221	96,779
Jun 30, 2014	4,500	4,839	339	2,882	97,118
Dec 31, 2014	4,500	4,856	356	2,526	97,474

Discount decreases, Carrying value increases

Amortization Journal Entries

- Based on the amortization table
- At issuance

2013			
Jan 1	Cash (column E) (A+)	96,149	
	Discount on bonds payable (column D) (CL+)	3,851	
	Bonds payable (maturity value) (L+)		100,000
	Issued bonds at a discount.		

- First interest payment

2013			
Jun 30	Interest expense (column B) (E+)	4,807	
	Discount on bonds payable (column C) (CL–)		307
	Cash (column A) (A–)		4,500
	Paid semiannual interest and amortized discount.		

Effective-Interest Amortization for a Bond Premium

- Assume the issuance of $100,000 of 9% bonds market rate of interest is 8% is $104,100

End of Semiannual Interest Period	Interest payment = stated rate x maturity value	Interest expense = market rate x carrying value	Amortization amount is difference between payment and expense	Discount and Carrying Value in the ledger from the journal entry	Bond
Jan 1, 2013				$4,100	$104,100
Jun 30, 2013	$4,500	$4,164	$336	3,764	103,764
Dec 31, 2013	4,500	4,151	349	3,415	103,415
Jun 30, 2014	4,500	4,137	363	3,052	103,052
Dec 31, 2014	4,500	4,122	378	2,674	102,674

Premium increases, Carrying value decreases

Amortization Journal Entries

- Based on the amortization table
- At issuance

2013			
Jan 1	Cash (column E) (A+)	104,100	
	Bonds payable (maturity value) (L+)		100,000
	Premium on bonds payable (column D) (AL+)		4,100
	Issued bonds at a premium.		

- First interest payment

2013			
Jun 30	Interest expense (column B) (E+)	4,164	
	Premium on bonds payable (column C) (AL–)	336	
	Cash (column A) (A–)		4,500
	Paid semiannual interest and amortized premium.		

P11A-2A: CALCULATING THE VALUE OF BONDS WHEN STATED RATE AND MARKET RATE ARE DIFFERENT

Interest rates determine the present value of future amounts.

Requirements:

1. Determine the present value of seven-year bonds payable with maturity value of $91,000 and stated interest rate of 14%, paid semiannually. The market rate of interest is 14% at issuance.
2. Same bonds payable as in Requirement 1, but the market interest rate is 16%.
3. Same bonds payable as in Requirement 1, but the market interest rate is 12%.

P11A-2A: CALCULATING THE VALUE OF BONDS WHEN STATED RATE AND MARKET RATE ARE DIFFERENT

(Continued)

1. Determine the present value of seven-year bonds payable with maturity value of $91,000 and stated interest rate of 14%, paid semiannually. The market rate of interest is 14% at issuance.

$91,000

2. Same bonds payable as in Requirement 1, but the market interest rate is 16%.

$83,454

3. Same bonds payable as in Requirement 1, but the market interest rate is 12%.

$99,431

Retire bonds payable (see Appendix 11B)

Retiring Bonds Payable

- Why?
  - Remove the cash responsibility
  - Lower market interest rates
  - Low value of the bonds
- How?
  - Callable bonds—the company may *call*, or pay off, the bonds at a specified price.
  - Price is usually at 100% or higher as incentive to buy originally
  - Issuer has flexibility to payoff at will
  - Purchases by market purchase or direct with bondholder involve same journal entry

Retiring Bonds Payable

- Assume:
  - $100,000 bonds
  - Discount $3,081
  - Current bond market price $95
  - Call price $100

Maturity value of bonds being retired	$100,000
Less: Discount	3,081
Carrying amount of bonds payable	$ 96,919
Market price ($100,000 × 0.95) paid to retire the bonds	95,000
Gain on retirement of bonds payable	$ 1,919

Retiring Bonds Payable

- Journal entry
  - Close Bond payable and any discount or premium account
  - Credit Cash for the amount paid
  - A difference between carry value and purchase costs results in a gain or loss
    - Carrying value exceeds purchase price = gain
    - Purchase value exceeds carrying value = loss

2013			
Dec 31	Bonds payable (L–)	100,000	
	Discount on bonds payable (CL–)		3,081
	Cash ($100,000 × 0.95) (A–)		95,000
	Gain on retirement of bonds payable (R+)		1,919
	Retired bonds payable.		

Chapter 11 Summary

- Bonds are a type of long-term debt usually sold by borrowing smaller amounts from more investors. Most bonds' face or maturity value is $1,000. The bonds will have a stated interest rate printed on the bond. This stated rate determines the amount of the interest payments.
- The market rate on the date a bond is issued may differ from the bond's stated rate. If it does, the bond will sell for a value other than its maturity or face value. If the market rate is greater than the stated rate, the bond will issue at a price below maturity value (discount). If the market rate is less than the stated rate, the bond will issue at a price above maturity value (premium).

Chapter 11 Summary

- Regardless of whether bonds are issued at a price other than face value, the cash paid semiannually to bondholders is always the same amount because it is based on the interest rate stated on the face of the bond.
- When bonds are issued at a discount, the market interest rate is greater than the stated interest rate on the bonds, so interest expense is greater than the actual cash payments for interest. Whether bonds are issued at face value, discount, or premium, the bond maturity value is what the company must pay to the bondholders at the bond maturity date.
- Bond discount or premium is amortized using the straight-line method or the effective-interest method.

Chapter 11 Summary

- Amortized discount increases interest expense. Amortized premium decreases interest expense. When bonds are issued between interest payment dates, interest is accrued.
- Current liabilities are those liabilities due in a year of the balance sheet date or the business operating cycle, whichever is longer. Long-term liabilities are those liabilities due over a year from the balance sheet date.
- Appendix 11A: We began this appendix with straight-line amortization to introduce the concept of amortizing bonds. A more precise way of amortizing bonds is used in practice, and it is called the effective-interest method.

Chapter 11 Summary

- Generally accepted accounting principles require that interest expense be measured using the effective-interest method unless the straight-line amounts are similar. In that case, either method is permitted. Total interest expense over the life of the bonds is the same under both methods; however, interest expense each year is different between the two methods.

Chapter 11 Summary

- The journal entry for the issuance of the bonds remains unchanged for the effective-interest amortization of bond discount or premiums. Interest expense is debited for market rate of interest times the carrying value of the bonds. Cash is credited for the stated rate of interest times the bonds maturity value. The difference between the interest expense and cash payment is the portion of the discount or premium on bonds being amortized for this period.

Chapter 11Summary

- Appendix 11B :When retiring bonds before maturity, follow these steps:
  - 1. Record partial-period amortization of discount or premium if the retirement date does not fall on an interest payment date.
  - 2. Write off the portion of Discount or Premium that relates to the bonds being retired.
  - 3. Credit a gain or debit a loss on retirement.

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