ASSETS										LIABILITIES						EQUITY	
$Cash	A/R	-ADA (XA)	Inv.	PPE	-Acc. Dep. (XA)	Prepaid {rent, asset}	Marketable Securities	Goodwill	Intangible	A/P	Deferred/ unearned Rev.	Bond Payable	-Discount (XL)	Wages Payable	Rent Payable	Contributed Capital	Retained Earnings

H2

Long-term Debt

Liabilities: probable future **sacrifices of economic benefits arising from present obligations** of a particular entity to transfer assets or provide services to other entities in the future **as a result of past transactions**

Present Value (PV):

- Lump sum of $100 received 3 yrs from now on + 8% interest rate: $PV = \frac{\text{Lump Sum}}{(1+r)^t} = \frac{\$100}{(1+0.08)^3}$.
- 3 year $100 ordinary annuity + 8%: $PV = \left(\frac{\text{Annual Cash Flow}}{r}\right)\left(1 - \frac{1}{(1+r)^t}\right)$

Bond Accounting:

- **Par Value**: (aka. face value) amount that is returned to the investor when the bond matures (or "principal"). E.g. if a bond is bought at issuance for $1,000, the investor bought the bond at its par value. At the maturity date, the investor will get back the $1,000.
- **Maturity**: The date the firm must repay the investors their par value.
- **Discount**: Amount below the par value at which the bond is trading at in the market at issuance; amortized over time ($MR > CR$)
- **Premium**: Amount above the par value at which the bond is trading at in the market at issuance; amortized over time ($MR < CR$)
- **Market Value / Fair Value**: Value at which a bond is currently trading at in the market; determined by market rates for similar bonds.
- **Carrying Value / Book Value**: Net amount between bond's face value and any unamortized premiums or minus any amortized discounts.
- **Coupon Rate**: The interest rate stated on the face of the bond. The periodic cash payments made to investors will be the coupon rate times the par value of the bond. Coupon payments are typically semi-annual
- **Zero Coupon Bond**: A bond that doesn't make periodic interest payments but one lump sum due at maturity
- **Market interest rate (at issuance)**: (aka. effective interest rate) rate that determines interest expense and book value (BV) of liability at issuance. Fixed at issuance. Rate investors demand to earn for loaning their money.
- **Market interest rate (current / after issuance)**: rate that determines current market value (MV) of bond. Based on mkt conditions and risk characteristics of borrower. Fluctuates over time.
- **Interest Expense**: = mkt rate at the time the bond is issued × net bond payable.
- **Interest payments**: = coupon rate × par amount.
- Difference between int. exp. and int. pymt. is accounted for in a balance sheet item called the bond discount (or premium).

E.g. Zero coupon bond that will result in a single payment of $10,000 after 3 yrs; mkt rate: 6%: (FV = 10,000, CR = 0%, MR = 6%, Maturity = 3 yrs.)

Math: $8,396 \approx \frac{10,000}{(1+6\%)^3}$, $504 \approx 8,396 \times 6\%$

	Cash (A)	=	B/P (L)	-Discount (XL)	+	R/E (E)	Inc. Stat. Caption	Net B/P	Disc. Balance
iss.	8,369		10,000	1,604				8,396	1,604
Y1				-504		-504	Int. exp.	8,900	1,100
Y2				-534		-534	Int. exp.	9,434	566
Y3				-566		-566	Int. exp.	10,000	0
	-10,000		-10,000	0					

E.g. Coupon bond issued at par value: (FV = 10,000, CR = 6%, MR = 6%, Maturity = 3 yrs.) Cash flows can be seen as:

1. $600 annuity for 3 yrs at 6% MR: $\left(\frac{\$600}{6\%}\right)\left(1 - \frac{1}{(1+6\%)^3}\right) \approx \$1,603.8$
2. $10,000 single sum in 3 yrs at 6% MR: $\frac{\$10,00}{(1+6\%)^3} \approx \$8,396.2$

Total NPV of Cash Flows = $\$1,603.8 + \$8,396.2 = \$10,000$

	Cash (A)	=	B/P (L)	+	R/E (E)	Inc. Stat. Caption
iss.	10,000		10,000			
Y1	-600				-600	Int. exp.
Y2	-600				-600	Int. exp.
Y3	-600				-600	Int. exp.
	-10,000		-10,000			

Y1-Ended Statement of Cash Flows:

- inflow financing 10k - principal
- outflow operating 600 - interest

E.g. As of 12/31/23, a signle $500k, 5-yr bond outstanding, issued at par with a fixed 4% int. rate. Fair value of the bond is $510k. The bond matures in 12/31/28 and int. pymt. are made annually on 12/31: In 2024, record interest expense = $\$500k \times 4\% = \$20k$. Implications of bond fair value disclosures for both investors and the company:

- Fair value can differ from carrying value due to changes in interest rates or market conditions. If the fair value of the bond is higher than the carrying value (as in this case), it indicates that the bond is trading at a premium. This can suggest that investors perceive the company as less risky, or that interest rates have decreased since issuance.
- For financial statement analysis: Fair value disclosures help investors assess the current market value of debt. A discrepancy between fair value and carrying value may signal changes in the company's credit risk or broader market conditions.

Early retirement of debt: (aka. buying back bond) Market value of debt can differ from book value:

- Firm's economic conditions (credit quality) $MV > BV \rightarrow$ loss
- Macroeconomic conditions (interest rates) $MV < BV \rightarrow$ gain

E.g. Repurchase the zero coupon bond in the open market on 12/31/22 (2 yrs to maturity) when the firm's mkt rate is 6% (inc.d from 5%): when the balances in the respective accounts are:

	B/P (L)	-Discount (XL)	
12/31/22	10,000	930	PV of $10,000 2 yrs from now

$= \frac{\$10,000}{(1+6\%)^2} = \$8,900$ which is less than the NBV of $10,000 - 930 = \$9,070$. The market value of the liability went down, meaning that they can pay off their obligations for less than the amount recorded on the books.

Cash (A)	=	B/P (L)	-Discount (XL)	+	R/E (E)	Inc. Stat. Caption
-8,900		-10,000	-930		170	Gain on retirement of debt

Gain/loss on early retirement of debt reported on the income statement.

Marking bond to market: At issuance 1/1/21, FV = $10k, CR = 10%, MR = 10%. 12/31/21, bond's MV is $9.6k. Either BSE:

-Discount (XL)	FMV Adju. (E)
400	400 (change in FMV)

-Discount (XL)	-FMV Adj. (XL)	R/E(E)	Inc. Stat. Caption
0	400	400	FMV adj.; unreal. gain