

CHAPTER 6
MASTER BUDGET AND RESPONSIBILITY ACCOUNTING

6- 35 (50- 60 min.) **Comprehensive review of budgeting.**

a. **Schedule 1 : Revenue Budget**
For the Year Ended December 31, 2002

	<u>Units (Lots)</u>	<u>Selling Price</u>	<u>Total Sales</u>
Lemonade	1,080	\$9,000	\$ 9,720,000
Diet Lemonade	540	8,500	<u>4,590,000</u>
Total			<u>\$14,310,000</u>

b. **Schedule 2 : Production Budget In Units**
For the Year Ended December 31, 2002

	<u>Products</u>	
	<u>Lemonade</u>	<u>Diet Lemonade</u>
Budgeted sales (Schedule 1)	1,080	540
Add target ending finished goods inventory	<u>20</u>	<u>10</u>
Total requirements	1,100	550
Deduct beginning finished goods inventory	<u>100</u>	<u>50</u>
Units to be produced	<u>1,000</u>	<u>500</u>

c. **Schedule 3A: Direct Materials Usage Budget in Units and Dollars**
For the Year Ended December 31, 2002

	<u>Syrup- Lemon.</u>	<u>Syrup- Diet Lem.</u>	<u>Containers</u>	<u>Packaging</u>	<u>Total</u>
Units of direct materials to be used for production of Lemonade (1,000 lots × 1)	1,000		1,000	1,000	
Units of direct materials to be used for production of Diet Lemonade (500 lots × 1)		<u>500</u>	<u>500</u>	<u>500</u>	
Total direct materials to be used (in units)	<u>1,000</u>	<u>500</u>	<u>1,500</u>	<u>1,500</u>	

Units of direct materials to be used from beginning inventory (under FIFO)	80	70	200	400	
Multiply by cost per unit of beginning inventory	<u>\$ 1,100</u>	<u>\$ 1,000</u>	<u>\$ 950</u>	<u>\$ 900</u>	
Cost of direct materials to be used from beginning inventory (a)	<u>\$ 88,000</u>	<u>\$ 70,000</u>	<u>\$ 190,000</u>	<u>\$ 360,000</u>	\$ 708,000
Units of direct materials to be used from purchases (1,000 – 80; 500 – 70; 1,500 – 200; 1,500 – 400)	920	430	1,300	1,100	
Multiply by cost per unit of purchased materials	<u>\$ 1,200</u>	<u>\$ 1,100</u>	<u>\$ 1,000</u>	<u>\$ 800</u>	
Cost of direct materials to be used from purchases (b)	<u>\$1,104,000</u>	<u>\$473,000</u>	<u>\$1,300,000</u>	<u>\$880,000</u>	<u>3,757,000</u>
Total cost of direct materials to be used (a + b)	<u><u>\$1,192,000</u></u>	<u><u>\$543,000</u></u>	<u><u>\$1,490,000</u></u>	<u><u>\$1,240,000</u></u>	<u><u>\$4,465,000</u></u>

d. Schedule 3B: Direct Materials Purchases Budget in Units and Dollars

For the Year Ended December 31, 2002

	Syrup- Lemon.	Syrup- Diet Lem.	Containers	Packaging	Total
Direct materials to be used in production (in units) from Schedule 3A	1,000	500	1,500	1,500	
Add target ending direct materials inventory					
In units	<u>30</u>	<u>20</u>	<u>100</u>	<u>200</u>	
Total requirements in units	1,030	520	1,600	1,700	
Deduct beginning direct materials inventory					
In units	<u>80</u>	<u>70</u>	<u>200</u>	<u>400</u>	
Units of direct materials to be purchased	950	450	1,400	1,300	
Multiply by cost/unit of purchased materials	<u>\$ 1,200</u>	<u>\$ 1,100</u>	<u>\$ 1,000</u>	<u>\$ 800</u>	
Direct materials purchase costs	<u><u>\$1,140,000</u></u>	<u><u>\$495,000</u></u>	<u><u>\$1,400,000</u></u>	<u><u>\$1,040,000</u></u>	<u><u>\$4,075,000</u></u>

6- 35 (Cont'd.)

e. **Schedule 4 : Direct Manufacturing Labor Budget**
For the Year Ended December 31, 2002

	Output Units Produced (Schedule 2)	Direct Manufacturing Labor Hours per Unit	Total Hours	Hourly Rate	Total
Lemonade	1,000	20	20,000	\$25	\$500,000
Diet Lemonade	500	20	<u>10,000</u>	25	<u>250,000</u>
Total			<u>30,000</u>		<u>\$750,000</u>

f. **Schedule 5 : Manufacturing Overhead Costs Budget**
For the Year Ended December 31, 2002

Variable manufacturing overhead costs:

Lemonade [$\$600 \times 2$ hours per lot \times 1,000 lots (Schedule 2)] \$1,200,000

Diet Lemonade [$\$600 \times 2$ hours per lot \times 500 lots (Schedule 2)] 600,000

Variable manufacturing overhead costs 1,800,000

Fixed manufacturing overhead costs 1,200,000

Total manufacturing overhead costs \$3,000,000

Fixed manufacturing overhead per bottling hour = $\$1,200,000 \div 3,000 = \400 . Note that the total number of bottling hours is 3,000 hours: 2,000 hours for Lemonade (2 hours per lot \times 1,000 lots) plus 1,000 hours for Diet Lemonade (2 hours per lot \times 500 lots).

g. **Schedule 6A : Ending Inventory Budget**
December 31, 2002

	Units (Lots)	Cost per Unit (Lot)	Total	
Direct materials:				
Syrup for Lemonade	30	\$1,200	\$ 36,000	
Syrup for Diet Lemonade	20	1,100	22,000	
Containers	100	1,000	100,000	
Packaging	200	800	<u>160,000</u>	\$318,000

Cost per

	<u>Units</u>	<u>Unit</u>		
Finished goods:				
Lemonade	20	\$5,500*	\$110,000	
Diet Lemonade	10	5,400*	<u>54,000</u>	<u>164,000</u>
Total ending inventory				<u>\$482,000</u>

*From Schedule 6B

Schedule 6B : Computation of Unit Costs of Manufacturing Finished Goods *For the Year Ended December 31, 2002*

	Cost per Unit (Lot) or Hour of Input	Lemonade		Diet Lemonade	
		Inputs in Units (Lots) or Hours	Amount	Inputs in Units (Lots) or Hours	Amount
Syrup			\$1,200		\$1,100
Containers			1,000		1,000
Packaging			800		800
Direct manufacturing labor	\$ 25	20	500	20	500
Variable manufacturing overhead*	600	2	1,200	2	1,200
Fixed manufacturing overhead*	400	2	<u>800</u>	2	<u>800</u>
Total			<u>\$5,500</u>		<u>\$5,400</u>

*Variable manufacturing overhead varies with bottling hours (2 hours per lot for both Lemonade and Diet Lemonade). Fixed manufacturing overhead is allocated on the basis of bottling hours at the rate of \$400 per bottling hour calculated in Schedule

**h. Schedule 7 : Cost of Goods Sold Budget
For the Year Ended December 31, 2002**

	<u>From Schedule</u>	<u>Total</u>
Beginning finished goods inventory, January 1, 2002	Given*	\$ 790,000
Direct materials used	3A	\$4,465,000
Direct manufacturing labor	4	750,000
Manufacturing overhead	5	<u>3,000,000</u>
Cost of goods manufactured		<u>8,215,000</u>
Cost of goods available for sale		9,005,000

Deduct ending finished goods inventory, December 31, 2002	6	<u>164,000</u>
Cost of goods sold		<u><u>\$8,841,000</u></u>

* Given in description of basic data and requirements (Lemonade, \$5,300 × 100; Diet Lemonade, \$5,200 × 50)

i. **Schedule 8 : Marketing Costs Budget**
For the Year Ended December 31, 2002
Marketing costs, 12% × Sales, \$14,310,000

	\$1,717,200
--	-------------

j. **Schedule 9 : Distribution Costs Budget**
For the Year Ended December 31, 2002
Distribution costs, 8% × Sales, \$14,310,000

	\$1,144,800
--	-------------

k. **Schedule 10 : Administration Costs Budget**
For the Year Ended December 31, 2002
Administration costs,
10% × Cost of goods manufactured, \$8,215,000

	\$821,500
--	-----------

l. **Budgeted Income Statement**
For the Year Ended December 31, 2002

Sales	Schedule 1		\$14,310,000
Cost of goods sold	Schedule 7		<u>8,841,000</u>
Gross margin			5,469,000
Operating costs:			
Marketing costs	Schedule 8	\$1,717,200	
Distribution costs	Schedule 9	1,144,800	
Administration costs	Schedule 10	<u>821,500</u>	
Total operating costs			<u>3,683,500</u>
Operating income			<u><u>\$ 1,785,500</u></u>