

EXERCISE 8-3 (15 minutes)

1. *Schedule of Budgeted Collections*
Third Quarter, Year 5

	<i>July</i>	<i>August</i>	<i>September</i>	<i>Quarter Total</i>
May sales x 20%	\$38,000			\$38,000
June sales x 50%,20%	105,000	\$42,000		147,000
July sales x 30%,50%,20%	72,000	120,000	\$48,000	240,000
Aug. sales x 30%,50%		120,000	200,000	320,000
Sept. sales x 30%			54,000	54,000
Total	<u>\$215,000</u>	<u>\$282,000</u>	<u>\$302,000</u>	<u>\$799,000</u>

2. The receivables balance at September 30:

Receivables from August sales:

$$\$400,000 \times 20\% = \$ 80,000$$

Receivables from September sales:

$$\$180,000 \times (50\% + 20\%) = \underline{126,000}$$

$$\text{Total} \quad \underline{\underline{\$ 206,000}}$$

EXERCISE 8-4 (15 minutes)

Production Budget (in Units)
Third Quarter

	<i>July</i>	<i>August</i>	<i>September</i>	<i>Quarter Total</i>
Units to be sold	40,000	62,000	70,000	172,000
Desired ending inventory ...	<u>12,400</u>	<u>14,000</u>	<u>13,000</u>	<u>13,000</u>
Total needs	52,400	76,000	83,000	185,000
Beginning inventory	<u>(8,000)</u>	<u>(12,400)</u>	<u>(14,000)</u>	<u>(8,000)</u>
Production requirement ...	<u>44,400</u>	<u>63,600</u>	<u>69,000</u>	<u>177,000</u>

EXERCISE 8-5 (25 minutes)

Direct Materials Budget

	<u>Year 2</u>				<u>Year 3</u>
	Q1	Q2	Q3	Q4	Q1
Required production ...	24,000	35,000	58,000	41,000	30,000
Material units per unit of output	<u>x 4</u>	<u>x 4</u>	<u>x 4</u>	<u>x 4</u>	<u>x 4</u>
Direct materials needed for production	<u>96,000</u>	<u>140,000</u>	<u>232,000</u>	<u>164,000</u>	<u>120,000</u>
	<u>Year 2</u>				<u>Year 2 Total</u>
Direct materials needed for production	96,000	140,000	232,000	164,000	632,000
Desired ending inventory	<u>35,000</u>	<u>58,000</u>	<u>41,000</u>	<u>30,000</u>	<u>30,000</u>
Total needs	131,000	198,000	273,000	194,000	662,000
Beginning inventory	<u>(14,000)</u>	<u>(35,000)</u>	<u>(58,000)</u>	<u>(41,000)</u>	<u>(14,000)</u>
Required purchases	<u>117,000</u>	<u>163,000</u>	<u>215,000</u>	<u>153,000</u>	<u>648,000</u>
Total cost of material purchases at \$0.80 per unit	<u>\$93,600</u>	<u>\$130,400</u>	<u>\$172,000</u>	<u>\$122,400</u>	<u>\$518,400</u>

EXERCISE 8-6 (30 minutes)

1. *Cash Receipts Schedule*
For June, Year 5

Cash sales		\$32,000
Collections on credit sales:		
From April sales	\$ 22,500	
(April credit sales x 15%)		
From May sales	105,000	
(May credit sales x 50%)		
From June sales	<u>75,000</u>	<u>202,500</u>
(June credit sales x 30%)		
Total cash receipts		<u>\$234,500</u>

2. Amount to be paid in June for inventory purchases:

For May purchases	\$ 90,000
(\$150,000 x 60%)	
For June purchases	<u>44,000</u>
(\$110,000 x 40%)	
Total June payment	<u>\$134,000</u>

3. *Cash Disbursements Schedule*
For June, Year 5

Payment for inventory purchases	\$134,000
Plant equipment purchases	30,000
Operating expenses	135,000
(\$160,000 - \$25,000 noncash expense)	
Dividends to be paid	<u>4,000</u>
Total disbursements	<u>\$303,000</u>

EXERCISE 8-6 (Continued)

4. *Cash Budget* *For June, Year 5*

Cash balance, beginning	\$ 15,000
Cash receipts	<u>234,500</u>
Cash available	249,500
Cash disbursements	<u>(303,000)</u>
Excess (deficiency) of cash available over disbursements	(53,500)
Financing:	
Borrowing	<u>63,500</u>
(\$53,500 + \$10,000)	
Cash balance, ending	<u><u>\$10,000</u></u>

PROBLEM 8-11 (30 minutes)

1.	<i>C-Pencil Production Budget (in Units)</i> <i>For January-April, Year 5</i>				
	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>May</i>
Budgeted sales	30,000	38,000	45,000	26,000	13,000
Desired ending inventory	<u>5,800</u>	<u>6,500</u>	<u>4,600</u>	<u>3,300</u>	<u>3,100</u>
Total needs	35,800	44,500	49,600	29,300	16,100
Beginning inventory	<u>(5,000)</u>	<u>(5,800)</u>	<u>(6,500)</u>	<u>(4,600)</u>	<u>(3,300)</u>
Required production	<u>30,800</u>	<u>38,700</u>	<u>43,100</u>	<u>24,700</u>	<u>12,800</u>

2.	<i>Material W Purchase Budget (in Units)</i> <i>For First Quarter, Year 5</i>			
	<i>January</i>	<i>February</i>	<i>March</i>	<i>Quarter Total</i>
Required production	30,800	38,700	43,100	112,600
Material units per C-pencil	<u>x 4</u>	<u>x 4</u>	<u>x 4</u>	<u>x 4</u>
Needed for production	123,200	154,800	172,400	450,400
Desired ending inventory	<u>46,440</u>	<u>51,720</u>	<u>29,640</u>	<u>29,640</u>
Total needs for material W	169,640	206,520	202,040	480,040
Beginning inventory	<u>(40,000)</u>	<u>(46,440)</u>	<u>(51,720)</u>	<u>(40,000)</u>
Required purchases	<u>129,640</u>	<u>160,080</u>	<u>150,320</u>	<u>440,040</u>

Note: Desired ending inventory of material W for March:

April required production	24,700
Units per C-pencil	<u>x 4</u>
Needed for production	98,800
	<u>x 0.3</u>
	<u>29,640</u>

PROBLEM 8-14 (45-55 minutes)

1. *Sales budget*

	<i>April</i>	<i>May</i>	<i>June</i>	<i>Quarter Total</i>
Units to be sold	40,000	60,000	54,000	154,000
Unit selling price ...	x \$15	x \$15	x \$15	x \$15
Budgeted sales	<u>\$600,000</u>	<u>\$900,000</u>	<u>\$810,000</u>	<u>\$2,310,000</u>

2. *Schedule of Budgeted Cash Receipts*

	<i>April</i>	<i>May</i>	<i>June</i>	<i>Quarter Total</i>
From March sales, \$420,000 x 55%	\$231,000			\$231,000
From April sales, \$600,000 x 40%, 55% .	240,000	\$ 330,000		570,000
From May sales, \$900,000 x 40%, 55% .		360,000	\$495,000	855,000
From June sales, \$810,000 x 40%			324,000	324,000
Total cash receipts	<u>\$471,000</u>	<u>\$690,000</u>	<u>\$819,000</u>	<u>\$1,980,000</u>

3. *Production Budget for April-July*

	<i>April</i>	<i>May</i>	<i>June</i>	<i>July</i>
Units to be sold	40,000	60,000	54,000	30,000
Desired ending inventory	<u>12,000</u>	<u>10,800</u>	<u>6,000</u>	<u>4,000</u>
Total needs	52,000	70,800	60,000	34,000
Beginning inventory ...	<u>(8,000)</u>	<u>(12,000)</u>	<u>(10,800)</u>	<u>(6,000)</u>
Units to be produced .	<u>44,000</u>	<u>58,800</u>	<u>49,200</u>	<u>28,000</u>

PROBLEM 8-14 (Continued)

4.

Materials Budget

	<i>April</i>	<i>May</i>	<i>June</i>	<i>Quarter Total</i>
Units to be produced ...	44,000	58,800	49,200	152,000
Material needed per unit	<u>x 3</u>	<u>x 3</u>	<u>x 3</u>	<u>x 3</u>
Production needs ...	132,000	176,400	147,600	456,000
Desired ending inventory	<u>70,560</u>	<u>59,040</u>	<u>33,600</u>	<u>33,600</u>
Total needs	202,560	235,440	181,200	489,600
Beginning inventory ..	<u>(52,800)</u>	<u>(70,560)</u>	<u>(59,040)</u>	<u>(52,800)</u>
To be purchased (units)	<u>149,760</u>	<u>164,880</u>	<u>122,160</u>	<u>436,800</u>
Purchase cost	<u>\$149,760</u>	<u>\$164,880</u>	<u>\$122,160</u>	<u>\$436,800</u>

Note: June ending inventory:

July production	28,000
Material needed per unit ...	<u>x 3</u>
Production needs	84,000
Inventory requirement	<u>x 0.4</u>
Desired ending inventory	<u><u>33,600</u></u>

PROBLEM 8-14 (Continued)

5. *Schedule of Budgeted Cash Payments for Material Purchases*

	<i>April</i>	<i>May</i>	<i>June</i>	<i>Quarter Total</i>
For March purchases, (\$107,520 x 40%)....	\$43,008			\$ 43,008
For April purchases, \$149,760 x 60%,40%	89,856	\$59,904		149,760
For May purchases, \$164,880 x 60%,40%		98,928	\$ 65,952	164,880
For June purchases, \$122,160 x 60%			73,296	73,296
Total cash payments	<u>\$132,864</u>	<u>\$158,832</u>	<u>\$139,248</u>	<u>\$430,944</u>

Note: March purchases:

	<i>March</i>	<i>April</i>
Sales in units	28,000	40,000
(\$420,000 ÷ \$15 = 28,000)		
Desired ending inventory	<u>8,000</u>	<u>12,000</u>
Total needs	36,000	52,000
Beginning inventory	<u>(5,600)</u>	<u>(8,000)</u>
(28,000 x .2 = 5,600)		
Units to be produced	30,400	44,000
Material needed per unit	<u>x 3</u>	<u>x 3</u>
Production needs ...	91,200	132,000
Desired ending inventory	<u>52,800</u>	<u>70,560</u>
Total needs	144,000	202,560
Beginning inventory	<u>(36,480)</u>	<u>(52,800)</u>
(91,200 x .4 = 36,480)		
Units to be purchased	<u>107,520</u>	<u>149,760</u>
Purchase cost	<u>\$107,520</u>	<u>\$149,760</u>

PROBLEM 8-15 (35 minutes)

1. Collection of accounts receivable during July:

July 10:

Billed on 6/10 (Last half of May sales):

$$\$500,000 \times .5 \times .18 = \$45,000$$

July 20:

Billed on 6/20 (1st half of June sales):

$$\$600,000 \times .5 \times .18 = 54,000$$

Billed on 7/10 (Last half of June sales):

$$\$600,000 \times .5 \times .8 \times .98 = 235,200$$

July 30:

Billed on 7/20 (1st half of July sales):

$$\$700,000 \times .5 \times .8 \times .98 = \underline{274,400}$$

$$\text{Total collections in July } \underline{\underline{\$608,600}}$$

2. Collection of August sales in September:

September 10:

Billed on 8/20 (1st half of August sales):

$$\$700,000 \times .5 \times .18 = \$63,000$$

Billed on 9/10 (Last half of August sales):

$$\$700,000 \times .5 \times .8 \times .98 = \underline{274,400}$$

$$\text{Total collections } \underline{\underline{\$337,400}}$$

3. The inventory amount on August 31 must be shown at cost. Therefore, the budgeted sales for September is multiplied by the cost of goods sold percentage, 80% (100% - 20%), to arrive at desired ending inventory on August 31. The calculation is as follows:

$$\$400,000 \times .8 \times .25 = \$80,000$$

PROBLEM 8-15 (Continued)

4. As in part 3, purchases must be shown at cost. Therefore, the appropriate sales figures are multiplied by 80% to arrive at required purchases for June as follows:

Expected June sales at cost, \$600,000 x .8	=	\$ 480,000
Desired ending inventory, \$700,000 x .8 x .25	=	<u>140,000</u>
Total needed		620,000
Beginning inventory (desired ending inventory for May), \$600,000 x .8 x .25	=	<u>(120,000)</u>
Required purchases		<u>\$500,000</u>

5. To calculate payment for purchases in August, you must first calculate purchases for July and August as follows:

July:

Expected sales (at cost), \$700,000 x .8	=	\$ 560,000
Desired ending inventory, \$700,000 x .8 x .25	=	<u>140,000</u>
Total needed	=	700,000
Beginning inventory (desired ending inventory for July), \$700,000 x .8 x .25	=	<u>(140,000)</u>
Required purchases		<u>\$560,000</u>

August:

Expected sales (at cost), \$700,000 x .8	=	\$560,000
Desired ending inventory, \$400,000 x .8 x .25	=	<u>80,000</u>
Total needed	=	640,000
Beginning inventory (desired ending inventory for July): \$700,000 x .8 x .25	=	<u>(140,000)</u>
Required purchases		<u>\$500,000</u>

The payment for purchases in August:

July purchases: \$560,000 x .5	=	\$280,000
August purchases: \$500,000 x .5	=	<u>250,000</u>
Total payments in August		<u>\$ 530,000</u>

PROBLEM 8-16 (45-50 minutes)1. *Schedule of Budgeted Cash Receipts(in dollars)*

	Quarters			
Year				
Sales of	1	2	3	4
Total				
Qtr. 4, Year 3,				
\$300,000 x 35%	105,000			
105,000				
Qtr. 1, Year 4,				
\$495,000 x 60%,35%	297,000	173,250		
470,250				
Qtr. 2, Year 4,				
\$580,000 x 60%,35%			348,000	203,000
551,000				
Qtr. 3, Year 4,				
\$730,000 x 60%,35%			438,000	255,500
693,500				
Qtr. 4, Year 4,				
\$300,000 x 60%				180,000
<u>180,000</u>				
Total cash receipts	<u>402,000</u>	<u>521,250</u>	<u>641,000</u>	<u>435,500</u>
<u>1,999,750</u>				

PROBLEM 8-16 (Continued)

2. *Schedule of Budgeted Cash Payments for Merchandise Purchases (in dollars)*

Year	Quarters			
	1	2	3	4
<i>Purchases of</i>				
<i>Total</i>				
Qtr. 4, Year 3, \$190,000 x 30%	57,000			57,000
Qtr. 1, Year 4, \$270,000 x 70%,30%	189,000	81,000		
270,000				
Qtr. 2, Year 4, \$300,000 x 70%,30% ...		210,000	90,000	
300,000				
Qtr. 3, Year 4, \$440,000 x 70%,30% ...			308,000	132,000
440,000				
Qtr. 4, Year 4, \$180,000 x 70%			126,000	126,000
Total cash payments .	<u>246,000</u>	<u>291,000</u>	<u>398,000</u>	<u>258,000</u>
<u>1,193,000</u>				

PROBLEM 8-16 (Continued)3. *Cash Budget*

	<i>Quarters</i>				<i>Year</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Total</i>
Cash, beginning	\$ 15,000	\$ 17,000	\$ 15,250	\$ 15,250	\$ 15,000
Cash receipts ..	<u>402,000</u>	<u>521,250</u>	<u>641,000</u>	<u>435,500</u>	<u>1,999,750</u>
Cash available	<u>417,000</u>	<u>538,250</u>	<u>656,250</u>	<u>450,750</u>	<u>2,014,750</u>
Cash disbursements:					
Merchandise purchases	246,000	291,000	398,000	258,000	1,193,000
Operating expenses:					
Variable	99,000	116,000	146,000	60,000	421,000
Fixed	40,000	40,000	40,000	40,000	160,000
Equipment purchases ...	-	90,000	70,000	-	160,000
Others.....	<u>15,000</u>	<u>15,000</u>	<u>15,000</u>	<u>15,000</u>	<u>60,000</u>
Total disbursements	<u>400,000</u>	<u>552,000</u>	<u>669,000</u>	<u>373,000</u>	<u>1,994,000</u>
Excess of cash Available over disbursements	<u>17,000</u>	<u>(13,750)</u>	<u>(12,750)</u>	<u>77,750</u>	<u>20,750</u>
Financing:					
Borrowings		29,000	28,000		57,000

Repayments				(57,000)
(57,000)				
Interest paid				(4,290)
(4,290)				
Net financing ...	0	29,000	28,000	(61,290)
(4,290)				
Cash, ending	\$ 17,000	\$ 15,250	\$15,250	\$16,460
<u>\$16,460</u>				

Note:Interest calculation:

\$29,000 loan x 12% x 9/12 = \$ 2,610

\$28,000 loan x 12% x 6/12 = 1,680

Total interest paid \$ 4,290