Master Budgeting

Chapter 8 – Part I

Learning Objective 1

Understand why organizations budget and the processes they use to create budgets.

The Basic Framework of Budgeting

A **budget** is a detailed quantitative plan for acquiring and using financial and other resources over a specified forthcoming time period.

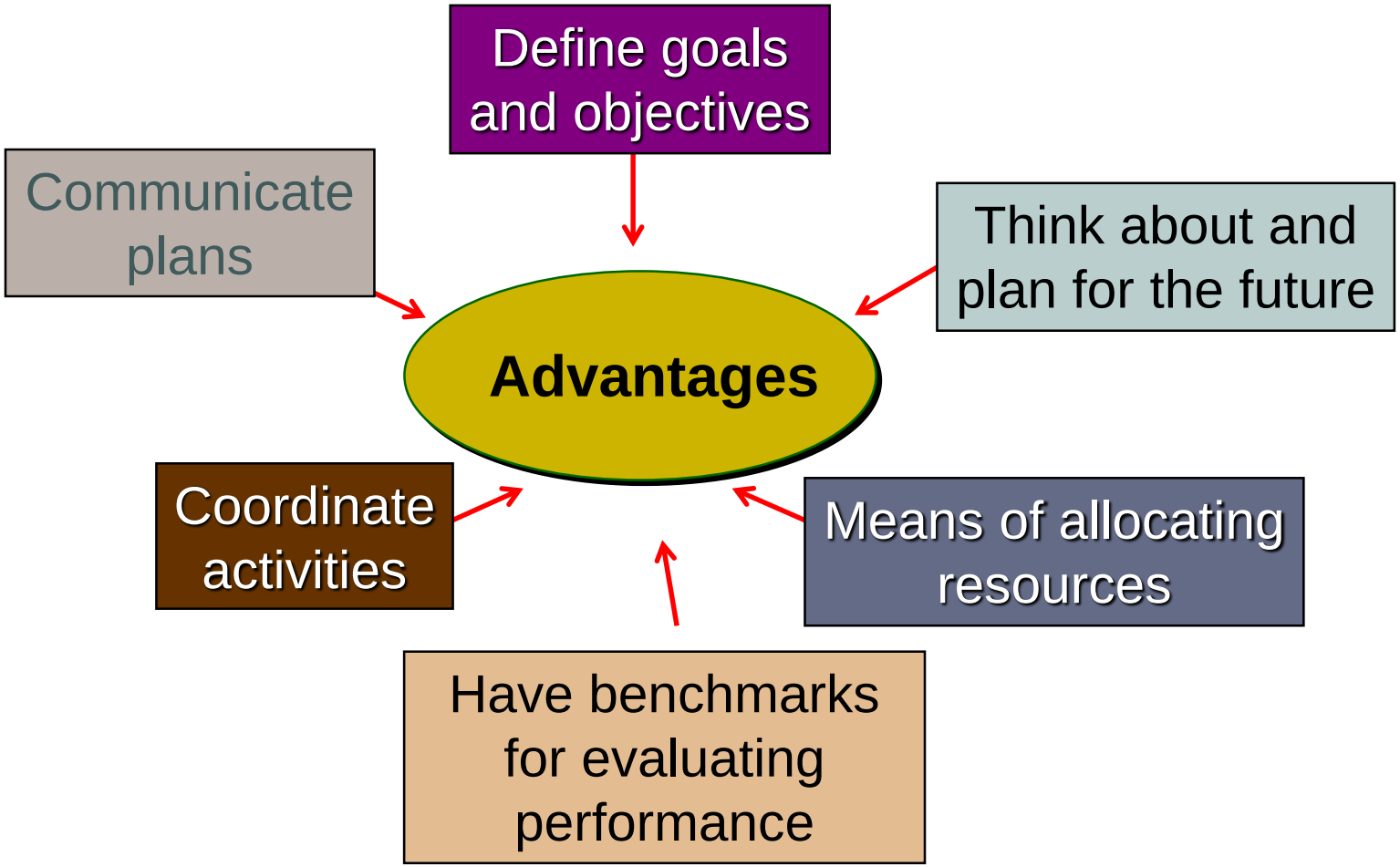
1. The act of preparing a budget is called **budgeting**.
2. The use of budgets to control an organization's activities is known as **budgetary control**.

Difference Between Planning and Control

Planning –
involves developing objectives and preparing various budgets to achieve those objectives.

Control –
involves the steps taken by management to increase the likelihood that the objectives set down while planning are attained and that all parts of the organization are working together toward that goal.

Advantages of Budgeting

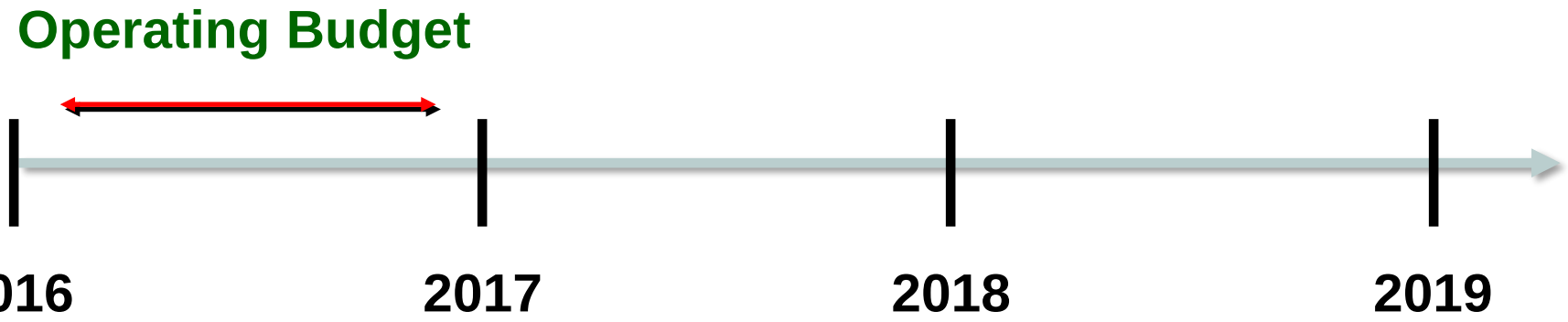


Responsibility Accounting

Managers should be held responsible for those items - and *only* those items - that they can actually control to a significant extent. Responsibility accounting enables organizations to *react quickly* to deviations from their plans and to *learn* from feedback.

Managers can understand the *sources* of significant favorable or unfavorable discrepancies *(not penalize individuals for not achieving targets)*.

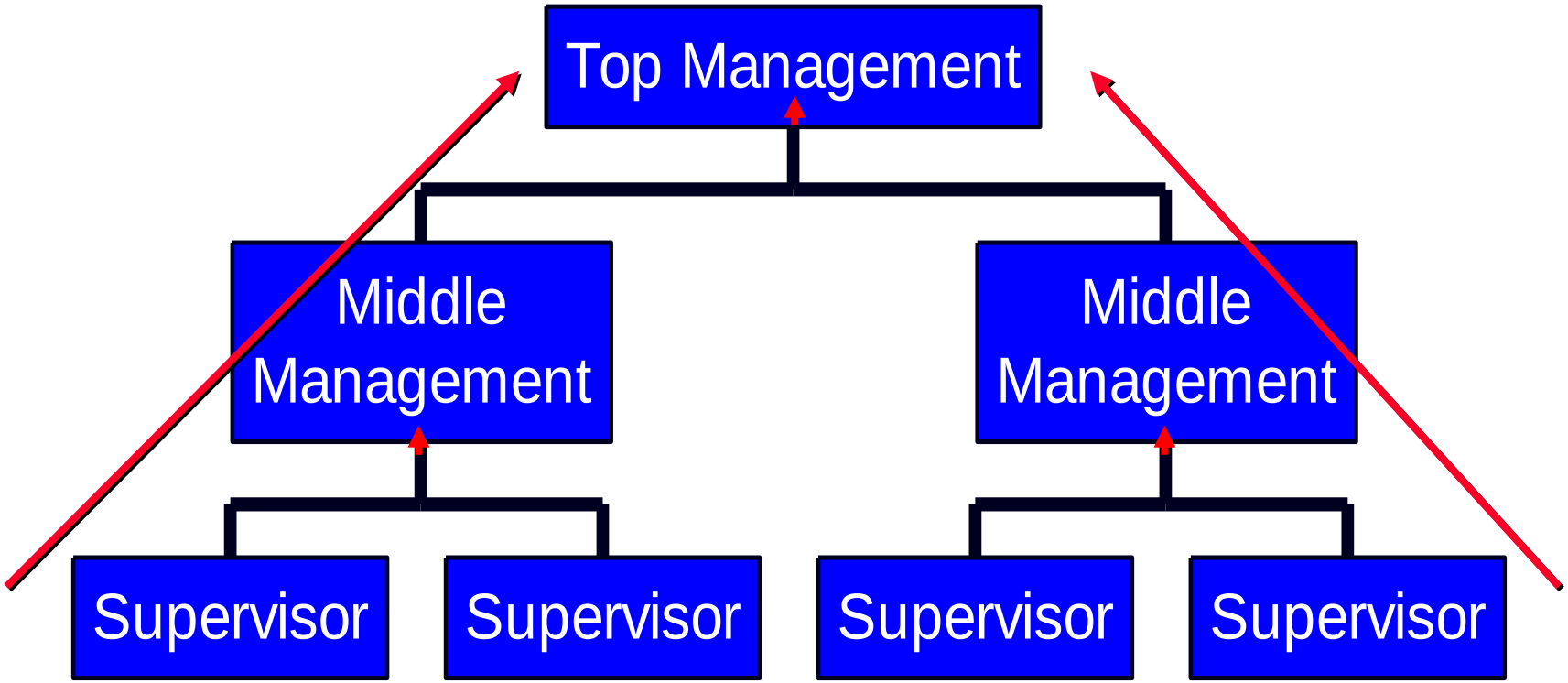
Choosing the Budget Period



Operating budgets ordinarily cover a one-year period corresponding to a company's fiscal year. Many companies divide their annual budget into four quarters.

A ***continuous (perpetual)*** budget is a 12-month budget that rolls forward one month (or quarter) as the current month (or quarter) is completed.

Self-Imposed Budgets



A **self-imposed** budget or **participative budget** is a budget that is prepared with the full cooperation and participation of managers at all levels.

Advantages of Self-Imposed Budgets

1. Individuals at all levels of the organization are viewed as members of the team whose judgments are valued by top management.
2. Budget estimates prepared by front-line managers are often more accurate than estimates prepared by top managers.
3. Motivation is generally higher when individuals participate in setting their own goals than when the goals are imposed from above.
4. A manager who is not able to meet a budget imposed from above can claim that it was unrealistic. Self-imposed budgets eliminate this excuse.

Disadvantages of Self-Imposed Budgets

1. Lower-level managers may make suboptimal budgeting recommendations if they lack the broad strategic perspective.
2. Self-imposed budgeting may allow lower-level managers to create 'budgetary slacks', because the managers who create budgets are held accountable for actual results that deviate from the budget.

Self-Imposed Budgets – Management Review

Self-imposed budgets should be reviewed by higher levels of management to prevent "budgetary slack."

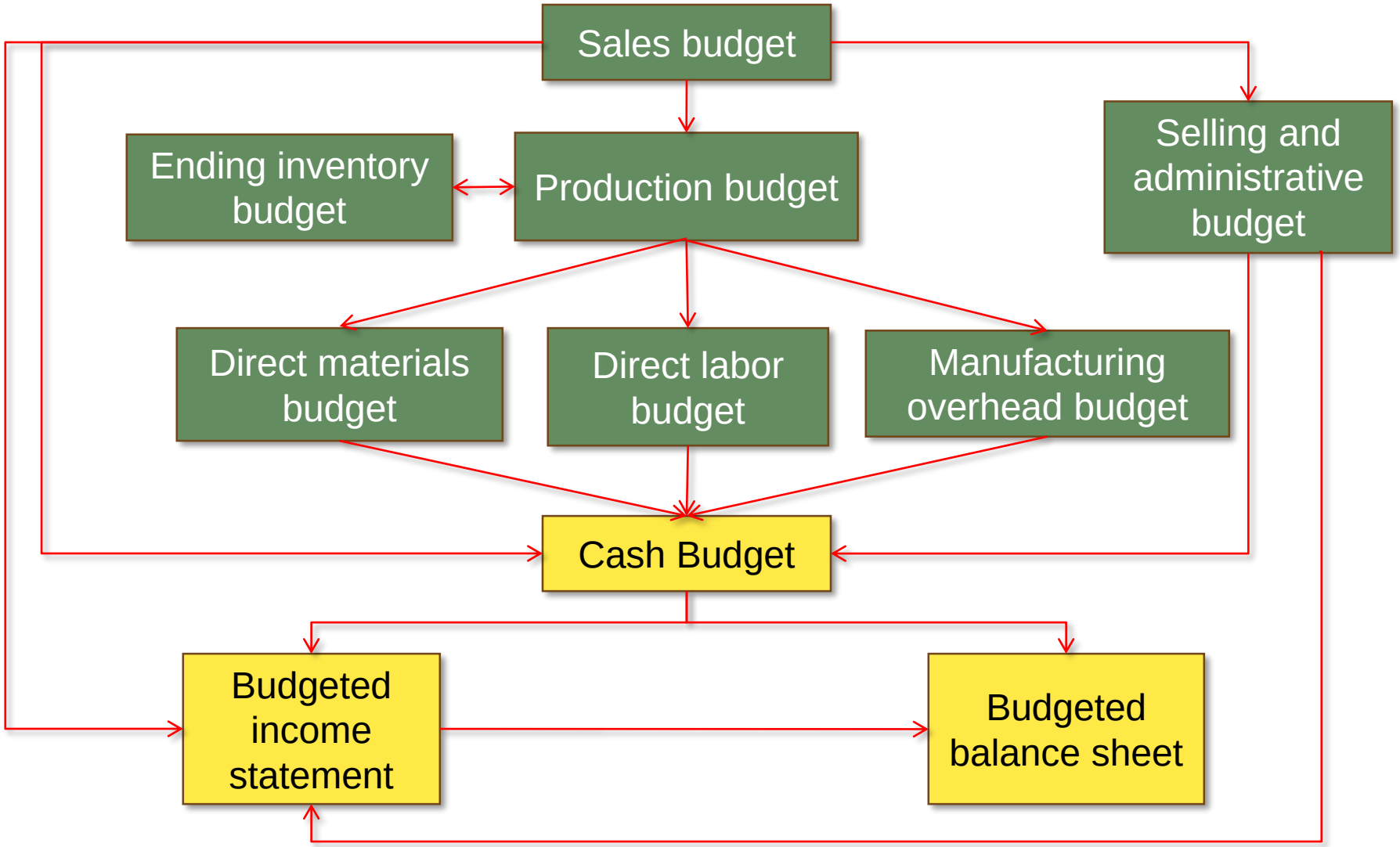
Most companies issue broad guidelines in terms of overall profits or sales. Lower level managers are directed to prepare budgets that meet those targets.

Human Factors in Budgeting

The success of a budget program depends on three important factors:

1. Top management must be enthusiastic and committed to the budget process.
2. Top management must not use the budget to pressure employees or blame them when something goes wrong.
3. Highly *achievable* budget targets are usually preferred when managers are rewarded based on meeting budget targets.

The Master Budget – An Overview



Seeing the Big Picture – Part 1

To help you see the "**big picture**" keep in mind that the 10 schedules in the master budget are designed to answer the 10 questions shown on the next screen.

Seeing the Big Picture

1. How much ***sales revenue*** will we earn?
2. How much ***cash*** will we collect from customers?
3. How much ***raw materia***l will we need to purchase?
4. How much ***manufacturing costs*** will we incur?
5. How much ***cash will we pay*** to our suppliers and our direct laborers, and how much cash will we pay for manufacturing overhead resources?
6. What is the ***total cost*** that will be transferred from finished goods inventory to cost ***of good sold***?
7. How much ***selling and administrative expense*** will we incur and how much cash will be pay related to those expenses?
8. How much ***money*** will we ***borrow*** from or ***repay*** to lenders – including interest?
9. How much ***operating income*** will we earn?
10. What will our ***balance sheet*** look like at the end of the budget period?

The Master Budget: Based on Estimates and Assumptions

A master budget is based on various estimates and assumptions. For example, the sales budget requires three estimates/assumptions as follows:

1. What are the ***budgeted unit sales***?
2. What is the ***budgeted selling price*** per unit?
3. What ***percentage of accounts*** receivable will be ***collected*** in the current and subsequent periods?

Learning Objective 2

Prepare a sales budget, including a schedule of expected cash collections.

Budgeting Example

❶ Royal Company is preparing budgets for the quarter ending June 30th.

❷ Budgeted sales for the next five months are:

April	**20,000 units**
May	**50,000 units**
June	**30,000 units**
July	**25,000 units**
August	**15,000 units**

❸ The selling price is $10 per unit.

The Sales Budget

The individual months of April, May, and June are summed to obtain the total budgeted sales in units and dollars for the quarter ended June 30th

	April	May	June	Quarter
Budgeted sales in units	20,000	50,000	30,000	100,000
Selling price per unit	$ 10	$ 10	$ 10	$ 10
Total budgeted sales	$ 200,000	$ 500,000	$ 300,000	$ 1,000,000

Expected Cash Collections

- All sales are on account.
- Royal's collection pattern is:
  - 70% collected in the month of sale,
  - 30% collected in the month following sale,
- In April, the March 31st accounts receivable balance of $30,000 will be collected in full.

Expected Cash Collections Calculations for April

	April	May	June	Quarter
Accounts Receivable 3/31	$ 30,000			$ 30,000

Accounts Receivable 6/30 = 30% x $300,000 = $90,000

Expected Cash Collections – Calculations for May

	April	May	June	Quarter
Accounts Receivable 3/31	$ 30,000			$ 30,000
April Sales				
70% × $200,000	140,000			140,000
30% × $200,000		60,000		60,000

From the Sales Budget for April: Accounts Receivable 6/30 = 30% x $300,000 = $90,000

Expected Cash Collections – Calculations for June

	April	May	June	Quarter
Accounts Receivable 3/31	$ 30,000			$ 30,000
April Sales				
70% × $200,000	140,000			140,000
30% × $200,000		60,000		60,000
May Sales				
70% × $500,000		350,000		350,000
30% × $500,000			150,000	150,000
June Sales				
70% × $300,000			210,000	210,000
	$ 170,000	$ 410,000	$ 360,000	$ 940,000

From the Sales Budget for May: Accounts Receivable
6/30 = 30% × 300,000 = $90,000

Concept Check 1

What will be the total cash collections for the quarter?

a. $700,000

b. $220,000

c. $190,000

d. $940,000

Concept Check 1a

What will be the total cash collections for the quarter?

a. $700,000

b. $220,000

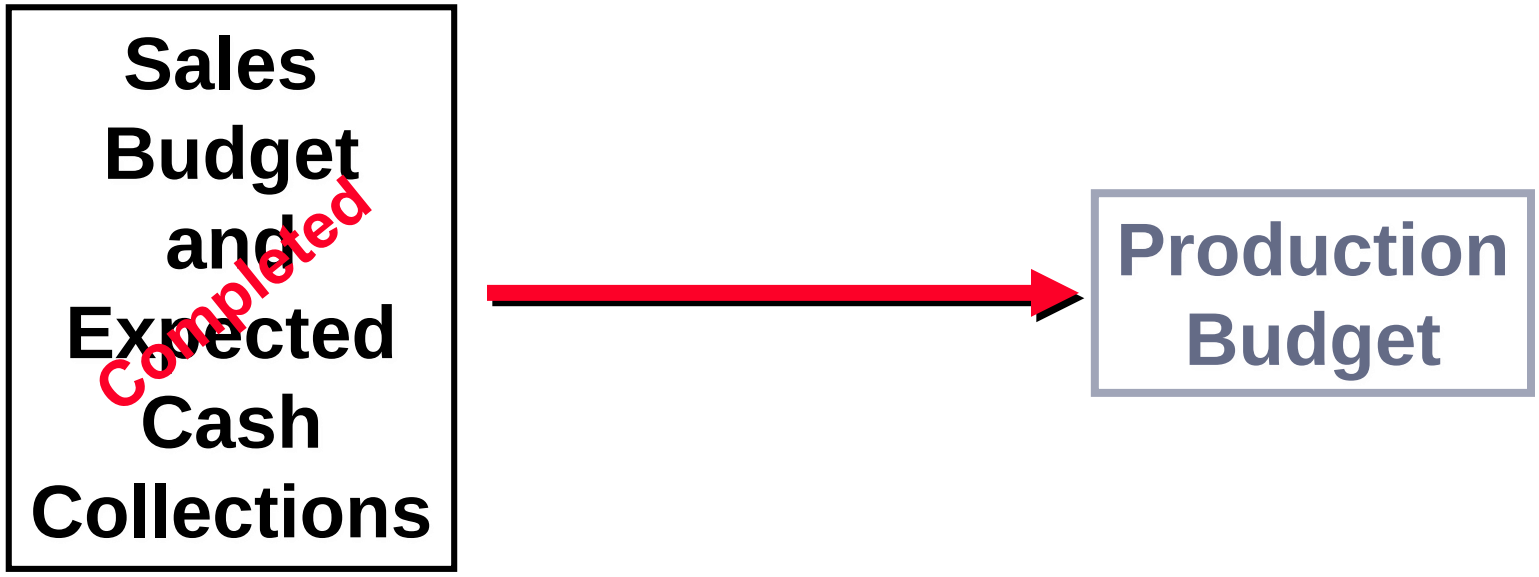
c. $190,000

d. $940,000

Learning Objective 3

Prepare a production budget.

The Production Budget



The production budget must be adequate to meet budgeted sales and to provide for the desired ending inventory.

The Production Budget - Details

The management at Royal Company wants ending inventory to be equal to *20%* of the following month's budgeted sales in units.

On March 31st, 4,000 units were on hand.

Let's prepare the production budget.

If Royal was a merchandising company it would prepare a merchandise purchase budget instead of a production budget.

The Production Budget – Budgeted Sales

	April	May	June	Quarter
Budgeted Sales	20,000	50,000	30,000	100,000
Add: Desired ending inventory				
Total needs				
Less Beginning inventory				
Required production				

The Production Budget – Calculations for April

	April	May	June	Quarter
Budgeted Sales	20,000	50,000	30,000	100,000
Add: Desired ending inventory	**10,000**			
Total needs	30,000			
Less Beginning inventory	4,000			
Required production	**26,000**			

March 31 ending inventory

Budgeted May sales	**50,000**
Desired ending inventory %	**20%**
Desired ending inventory	**10,000**

Concept Check 2

What is the required production for May?

a. 56,000 units

b. 46,000 units

c. 62,000 units

d. 52,000 units

Concept Check 2a

What is the required production for May?

a. 56,000 units

b. 46,000 units

c. 62,000 units

d. 52,000 units

The Production Budget – Calculations for May

	April	May	June	Quarter
Budgeted Sales	20,000	50,000	30,000	100,000
Add: Desired ending inventory	**10,000**	6,000		
Total needs	30,000	56,000		
Less Beginning inventory	4,000	**10,000**		
Required production	26,000	46,000		

The Production Budget – Calculations for June

	April	May	June	Quarter
Budgeted Sales	20,000	50,000	30,000	100,000
Add: Desired ending inventory	10,000	6,000	5,000	5,000
Total needs	30,000	56,000	35,000	105,000
Less Beginning inventory	4,000	10,000	6,000	4,000
Required production	26,000	46,000	29,000	101,000

Add: Desired ending inventory:
July sales of 25,000 units × 20% = 5,000

Learning Objective 4

Prepare a direct materials budget, including a schedule of expected cash disbursements for purchases of materials.

The Direct Materials Budget

- At Royal Company, *five pounds* of material are required per unit of product.
- Management wants materials on hand at the end of each month equal to *10%* of the following month's production.
- On March 31, 13,000 pounds of material are on hand. Material cost is *$0.40* per pound.

Let's prepare the direct materials budget.

The Direct Materials Budget - Production

	April	May	June	Quarter
Production	26,000	46,000	29,000	101,000
Materials per unit (pounds)				
Production needs				
Add: Desired ending inventory				
Total needed				
Less: Beginning inventory				
Materials to be purchased				

From the production budget

The Direct Materials Budget – Production Needs

	April	May	June	Quarter
Production	26,000	46,000	29,000	101,000
Materials per unit (pounds)	5	5	5	5
Production needs	130,000	230,000	145,000	505,000
Add: Desired ending inventory				
Total needed				
Less: Beginning inventory				
Materials to be purchased				

The Direct Materials Budget – Calculations for April

	April	May	June	Quarter
Production	26,000	46,000	29,000	101,000
Materials per unit (pounds)	5	5	5	5
Production needs	130,000	**230,000**	145,000	505,000
Add: Desired ending inventory	**23,000**			
Total needed	153,000			
Less: Beginning inventory	**13,000**			
Materials to be purchased	140,000			

March 31 inventory

10% of following month's production needs

Now, why don't **you** calculate the materials to be purchased In May

Concept Check 3

How much materials should be purchased in May?

a. 221,500 pounds

b. 240,000 pounds

c. 230,000 pounds

d. 211,500 pounds

Concept Check 3a

How much materials should be purchased in May?

a. 221,500 pounds

b. 240,000 pounds

c. 230,000 pounds

d. 211,500 pounds

The Direct Materials Budget – Calculations for May

	April	May	June	Quarter
Production	26,000	46,000	29,000	101,000
Materials per unit (pounds)	5	5	5	5
Production needs	130,000	230,000	145,000	505,000
Add: Desired ending inventory	**23,000**	14,500		
Total needed	153,000	244,500		
Less: Beginning inventory	13,000	**23,000**		
Materials to be purchased	140,000	221,500		

The Direct Materials Budget – Calculations for June

	April	May	June	Quarter
Production	26,000	46,000	29,000	101,000
Materials per unit (pounds)	5	5	5	5
Production needs	130,000	230,000	145,000	505,000
Add: Desired ending inventory	23,000	**14,500**	11,500	11,500
Total needed	153,000	244,500	156,500	516,500
Less: Beginning inventory	13,000	23,000	**14,500**	13,000
Materials to be purchased	140,000	221,500	142,000	503,500

Beginning inventory from April: 13,000

Expected Cash Disbursement for Materials

- Royal pays *$0.40 per pound* for its materials.
- *One-half* of a month's purchases is paid for in the month of purchase; the other half is paid in the following month.
- The March 31 accounts payable balance is $12,000.

Let's calculate expected cash disbursements.

Expected Cash Disbursement for Materials – Part 2

	April	May	June	Quarter
Accounts payable 3/31	$ 12,000			$ 12,000

Expected Cash Disbursement for Materials - Calculations

	April	May	June	Quarter
Accounts payable 3/31	$ 12,000			$ 12,000
April purchases				
50% x $56,000	28,000			28,000
50% x $56,000		28,000		28,000
May purchases				
50% x $88,600		44,300		44,300
50% x $88,600			44,300	44,300
June purchases				
50% x $56,800			28,400	28,400
Total cash disbursements	$ 40,000	$ 72,300	$ 72,700	$ 185,000

140,000 lbs. × $0.40/lb. = $56,000

Compute the expected cash disbursements for materials for the quarter.

Quick Check 4

What are the total cash disbursements for the quarter?

a. $185,000

b. $ 68,000

c. $ 56,000

d. $201,400

Quick Check 4a

What are the total cash disbursements for the quarter?

a. $185,000

b. $ 68,000

c. $ 56,000

d. $201,400

See the spreadsheet on the next slide.

Expected Cash Disbursement for Materials – Ending Accounts Payable Balance

	April	May	June	Quarter
Accounts payable 3/31	$ 12,000			$ 12,000
April purchases				
50% × $56,000	28,000			28,000
50% × $56,000		28,000		28,000
May purchases				
50% × $88,600		44,300		44,300
50% × $88,600			44,300	44,300
June purchases				
50% × $56,800			28,400	28,400
Total cash disbursements	$ 40,000	$ 72,300	$ 72,700	**$ 185,000**

Accounts payable at July 30 = $56,800 × 50% = $28,400

Learning Objective 5

Prepare a direct labor budget.

The Direct Labor Budget

- At Royal, each unit of product requires 0.05 hours (3 minutes) of direct labor. The labor can be unskilled because the production process is relatively simple and formal training is not required.
- Royal pays its workers at the rate of $10 per hour.

Let's prepare the direct labor budget.

The Direct Labor Budget – Units of Production

	April	May	June	Quarter
Units of production	**26,000**	**46,000**	**29,000**	101,000
Direct labor time per unit				
Labor hours required				
Hourly wage rate				
Total direct labor costs				

From the production budget

The Direct Labor Budget – Labor Hours Required

	April	May	June	Quarter
Units of production	26,000	46,000	29,000	101,000
Direct labor time per unit	0.05	0.05	0.05	0.05
Labor hours required	1,300	2,300	1,450	5,050
Hourly wage rate				
Total direct labor costs				

The Direct Labor Budget – Direct Labor Costs

	April	May	June	Quarter
Units of production	26,000	46,000	29,000	101,000
Direct labor time per unit	0.05	0.05	0.05	0.05
Labor hours required	1,300	2,300	1,450	5,050
Hourly wage rate	$ 10	$ 10	$ 10	$ 10
Total direct labor costs	$ 13,000	$ 23,000	$ 14,000	$ 50,500