

Master Budgeting

CHAPTER 8

Learning Objective 1

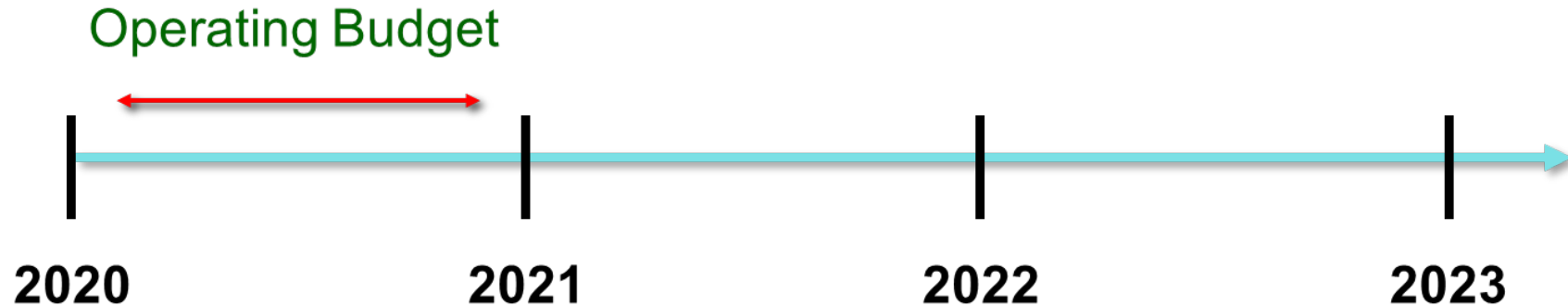
Understand why organizations create budget and the processes they use to create budgets.

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. A company's budget ordinarily covers a one-year period corresponding to its fiscal year.
2. Some companies also use a *perpetual budget*, which is a 12-month budget that continuously rolls forward.

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

Budgets Are Used for Two Key Purposes

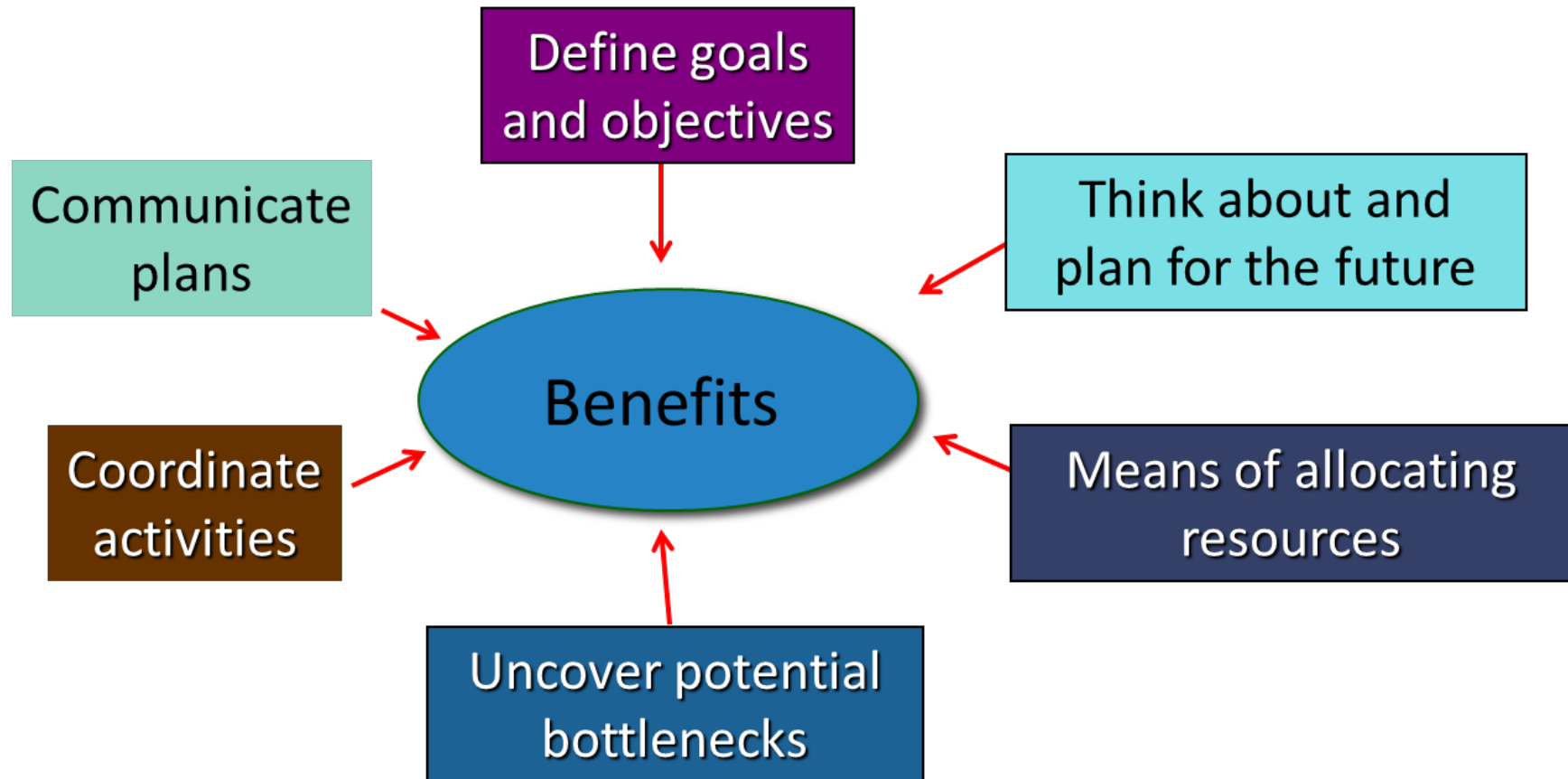
Planning involves developing objectives and preparing various budgets to achieve those objectives.

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.

Gathering feedback to ensure plan is properly executed + modified as circumstances change

Why Do Organizations Create Budgets?

(*Planning Perspective*)



Why Do Organizations Create Budgets? (*Control Perspective*)

From a control standpoint, organizations compare their budgets to actual results to:

Improve the efficiency and effectiveness of operations.

Evaluate and *reward* employees.

How Do Organizations Create Budgets?

Companies usually create budgets by relying on some combination of **top-down budgeting** and *self-imposed* budgeting.

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

Top-down budgeting

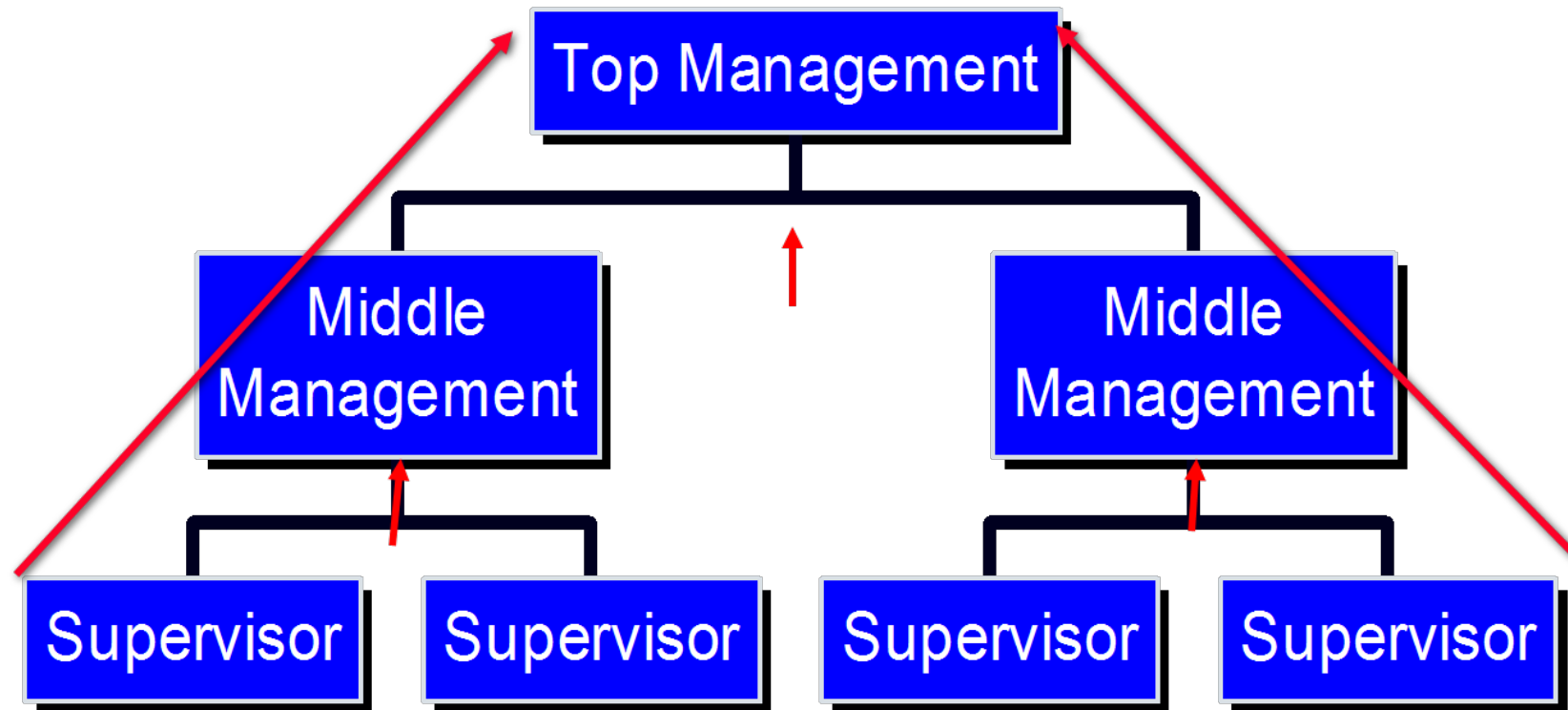
In this approach managers initiate the budgeting process by issuing profit targets.

Lower managers are directed to prepare budgets that meet these targets

However:

- It often demoralizes lower-level managers because it ignores their knowledge and opinion
- Targets imposed may be unrealistically high (→ it generates resentment rather than cooperation) or unknowingly too low (→ ineffective)

Self-Imposed Budgets



When managers throughout the organization work collaboratively to prepare a budget, they often strive to establish challenging targets that are also highly achievable. These goals are likely to build a lower-level manager's confidence and commitment to the budget.

Advantages of Self-Imposed Budget

1. It shows **respect** for the opinions of lower-level managers when they are involved in the budgeting process.
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. **It empowers them to take ownership** of the budget and to be accountable for deviations from it.

Limitations of Self-Imposed Budgets

1. Lower-level managers may define suboptimal budgeting estimates if they lack broad strategic perspective of top managers
2. If budget is used (also) to reward employees, lower-level managers may create too much budgetary slack in an effort to ensure that their actual results exceed the plan

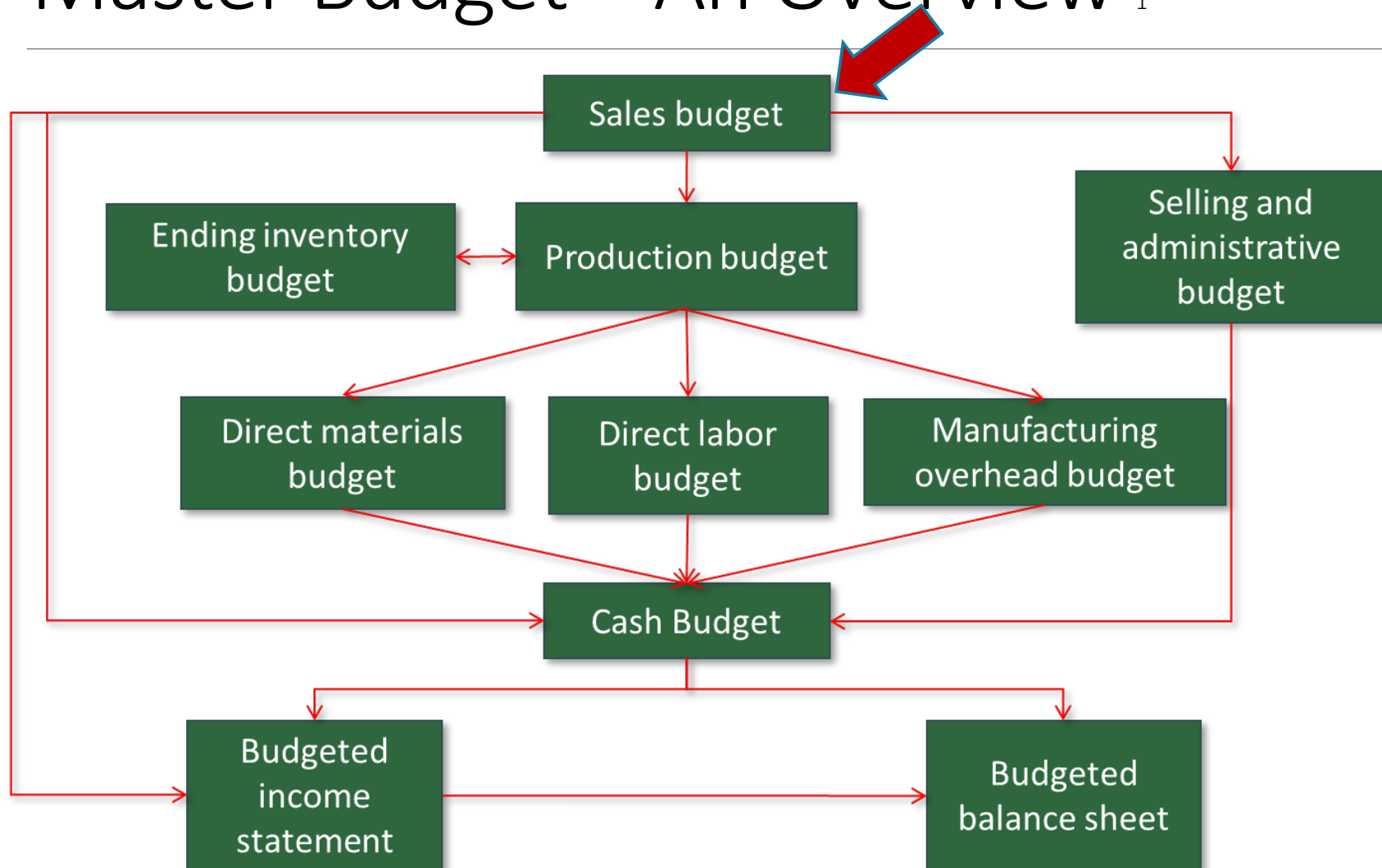
Self-Imposed Budgets – Managers Review

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 → *challenging but highly achievable targets*

Master Budget – An Overview ¹



Seeing the Big Picture 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 ²

1. How much sales revenue will we earn?
2. How much cash will we collect from customers?
3. How much raw material 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 goods sold?
7. How much selling and administrative expense will we incur, and how much cash will we 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?

Master Budget – An Overview ²

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

1. Royal Company is preparing budgets for the quarter ending June 30.
2. 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

3. The selling price is \$10 per unit.

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 30.

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

Do customers pay immediately?...
Usually they do not...

Therefore revenues are
200,000 in April...

Expected Cash Collections ¹

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 31 accounts receivable balance of **\$30,000** will be collected in full in April.

But only 140,000 (70% of 200k) are paid in April...

Expected Cash Collections ₂

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

Expected Cash Collections ³

	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

Expected Cash Collections ⁴

	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

From the sales budget for May

Quick Check 1

What will be the total cash collections for the quarter?

- a. \$700,000.
- b. \$220,000.
- c. \$190,000.
- d. \$940,000.

Quick Check 1a

What will be the total cash collections for the quarter?

- a. \$700,000.
- b. \$220,000.
- c. \$190,000.
- d. Answer: \$940,000.

Expected Cash Collections ⁵

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
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			<u>210,000</u>	<u>210,000</u>
	<u>\$ 170,000</u>	<u>\$ 410,000</u>	<u>\$ 360,000</u>	<u>\$ 940,000</u>

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

Learning Objective 3

Prepare a production budget.

Production Budget ¹

It is prepared after the sales budget.

The production budget lists the number of units that must be produced to satisfy sales needs and to provide for the desired ending finished goods.

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

Production Budget ₂

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

On March 31, 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.

Production Budget ₃

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Budgeted sales	20,000	50,000	30,000	100,000
Add: Desired ending inventory				
Total needs				
Less: Beginning inventory				
Required production				

Production Budget ⁴

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Budgeted sales	20,000	50,000	30,000	100,000
Add: Desired ending inventory	<u>10,000</u>			
Total needs	30,000			
Less: Beginning inventory	<u>4,000</u>			
Required production	<u>26,000</u>			

*On March 31,
4,000 units
were on hand*

March 31 ending
inventory

Budgeted May sales	50,000
Desired ending inventory %	<u>20%</u>
Desired ending inventory	<u>10,000</u>

Quick 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.

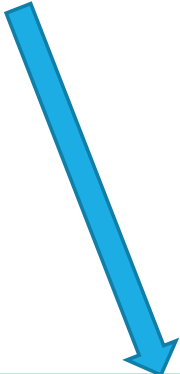
Quick Check 2a

What is the required production for May?

- a. 56,000 units.
- b. Answer: 46,000 units.**
- c. 62,000 units.
- d. 52,000 units.

Production Budget ⁵

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



Ending inventory = 20% x 30k = 6k

Production Budget ⁶

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

July sales of 25,000 units \times 20% = **5,000**

Learning Objective 4

Prepare a direct materials budget, including a schedule of expected cash payments (=disbursements) for purchases of materials.

Direct Materials Budget ¹

It is prepared after the production requirements have been computed.

It details the raw materials that must be purchased to fulfill the production budget and to provide adequate inventories.

Direct Materials Budget ¹

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, there are 13,000 pounds of material on hand. Material cost is *\$0.40* per pound.

Let's prepare the direct materials budget.

Direct Materials Budget ²

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
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 production budget

Direct Materials Budget ³

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

Direct Materials Budget ⁴

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

$10\% * 46,000 = 4,600$
 $4,600 \times 5 = 23,000$

$10\% * 26,000 = 2,600$
 $2,600 \times 5 = 13,000$

March 31 inventory.

10% of following month's production needs.

Now, why don't you calculate the materials to be purchased in May.

Quick 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.

Quick Check 3a

How much materials should be purchased in May?

- a. Answer: 221,500 pounds.
- b. 240,000 pounds.
- c. 230,000 pounds.
- d. 211,500 pounds.

Direct Materials Budget ⁵

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Production	26,000	46,000	29,000	101,000
Materials per unit (pounds)	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
Production needs	130,000	230,000	145,000	505,000
Add: Desired ending inventory	<u>23,000</u>	<u>14,500</u>	<div style="background-color: #4CAF50; color: white; padding: 5px;"> $10\% * 29,000 = 2,900$ $2,900 \times 5 = 14,500$ </div>	
Total needed	153,000	244,500		
Less: Beginning inventory	<u>13,000</u>	<u>23,000</u>	<div style="background-color: #4CAF50; color: white; padding: 5px;"> $10\% * 46,000 = 4,600$ $4,600 \times 5 = 23,000$ </div>	
Materials to be purchased	<u>140,000</u>	<u>221,500</u>		

Direct Materials Budget ⁶

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

These are numbers of
units of raw materials...
not money

Expected Cash Disbursement for Materials ₁

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 ₂

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

Expected Cash Disbursement for Materials ₃

	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

$$140,000 \text{ lbs.} \times \$0.40/\text{lb.} = \$56,000$$

These are numbers of units of raw materials... not money

These are dollars

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. Answer: \$185,000.

b. \$68,000.

c. \$56,000.

d. \$201,400.

Expected Cash Disbursement for Materials ⁴

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
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			<u>28,400</u>	<u>28,400</u>
Total cash disbursements	<u>\$ 40,000</u>	<u>\$ 72,300</u>	<u>\$ 72,700</u>	<u>\$ 185,000</u>

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

Learning Objective 5

Prepare a direct labor budget.

Direct Labor Budget ¹

It shows the direct labor-hours required to satisfy the production budget.

The company can develop plans to adjust the labor force as the situation requires throughout the year...

In this part for simplicity we assume that the direct labor workforce is adjusted as needed to match the production needs... However, employment policies or contracts often require to consider extra payment or other agreements

Direct Labor Budget ¹

At Royal, each unit of product requires **0.05 hour** (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.

Direct Labor Budget ²

	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 production budget

Direct Labor Budget ³

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

Direct Labor Budget ⁴

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

Learning Objective 6

Prepare a manufacturing overhead budget.

Manufacturing Overhead Budget ¹

It lists all costs of production other than direct materials and direct labour.

Manufacturing Overhead Budget ¹

At Royal, manufacturing overhead is applied to units of product on the basis of direct labor-hours.

The **variable** manufacturing overhead rate is **\$20 per direct labor-hour**.

Fixed manufacturing overhead is **\$50,000** per month, which includes **\$20,000 of noncash costs** (primarily depreciation of plant assets).

Let's prepare the manufacturing overhead budget.

Manufacturing Overhead Budget ²

	April	May	June	Quarter
Budgeted direct labor-hours	1,300	2,300	1,450	5,050
Variable mfg. OH rate				
Variable mfg. OH costs				
Fixed mfg. OH costs				
Total mfg. OH costs				
Less: Noncash costs				
Cash disbursement for mfg. OH				

Direct labor budget

Manufacturing Overhead Budget ³

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Budgeted direct labor-hours	1,300	2,300	1,450	5,050
Variable mfg. OH rate	<u>\$ 20</u>	<u>\$ 20</u>	<u>\$ 20</u>	<u>\$ 20</u>
Variable mfg. OH costs	\$ 26,000	\$ 46,000	\$ 29,000	\$ 101,000
Fixed mfg. OH costs	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>150,000</u>
Total mfg. OH costs	76,000	96,000	79,000	251,000
Less: Noncash costs	<u>20,000</u>	<u>20,000</u>	<u>20,000</u>	<u>60,000</u>
Cash disbursement for mfg. OH	<u>\$ 56,000</u>	<u>\$ 76,000</u>	<u>\$ 59,000</u>	<u>\$ 191,000</u>

$$\frac{\text{Total mfg. OH for quarter } \$251,000}{\text{Total labor hours required } 5,050} = \$49.70 \text{ per hour}^*$$

*** rounded**

Manufacturing Overhead Budget ⁴

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Budgeted direct labor-hours	1,300	2,300	1,450	5,050
Variable mfg. OH rate	<u>\$ 20</u>	<u>\$ 20</u>	<u>\$ 20</u>	<u>\$ 20</u>
Variable mfg. OH costs	\$ 26,000	\$ 46,000	\$ 29,000	\$ 101,000
Fixed mfg. OH costs	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>150,000</u>
Total mfg. OH costs	76,000	96,000	79,000	251,000
Less: Noncash costs	<u>20,000</u>	<u>20,000</u>	<u>20,000</u>	<u>60,000</u>
Cash disbursement for mfg. OH	<u>\$ 56,000</u>	<u>\$ 76,000</u>	<u>\$ 59,000</u>	<u>\$ 191,000</u>

Depreciation is a noncash charge.

Ending Finished Goods Inventory Budget ₂

<u>Production costs per unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Direct materials	5.00 lbs.	\$ 0.40	\$ 2.00
Direct labor	0.05 hr.	\$ 10.00	0.50

Direct labor budget

Ending Finished Goods Inventory Budget ³

<u>Production costs per unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Direct materials	5.00 lbs.	\$ 0.40	\$ 2.00
Direct labor	0.05 hr.	\$ 10.00	0.50
Manufacturing overhead	0.05 hr.	\$ 49.70	<u>2.49</u>
			<u>\$ 4.99</u>
<u>Budgeted finished goods inventory</u>			
Ending inventory in units			
Unit product cost			<u>\$ 4.99</u>
Ending finished goods inventory			<u>?</u>

$$\frac{\text{Total mfg. OH for quarter } \$251,000}{\text{Total labor hours required } 5,050} = \$49.70 \text{ per hour}$$

Ending Finished Goods Inventory Budget ⁴

<u>Production costs per unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Direct materials	5.00 lbs.	\$ 0.40	\$ 2.00
Direct labor	0.05 hr.	\$ 10.00	0.50
Manufacturing overhead	0.05 hr.	\$ 49.70	<u>2.49</u>
			<u>\$ 4.99</u>
<u>Budgeted finished goods inventory</u>			
Ending inventory in units			5,000
Unit product cost			<u>\$ 4,99</u>
Ending finished goods inventory			<u>\$ 24,950</u>

Ending Finished Goods Inventory Budget ⁵

<u>Production costs per unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Direct materials	5.00 lbs.	\$ 0.40	\$ 2.00
Direct labor	0.05 hr.	\$ 10.00	0.50
Manufacturing overhead	0.05 hr.	\$ 49.70	<u>2.49</u>
			<u>\$ 4.99</u>
<u>Budgeted finished goods inventory</u>			
Ending inventory in units			5,000
Unit product cost			<u>\$ 4.99</u>
Ending finished goods inventory			<u>\$ 24,950</u>

Production budget

Learning Objective 7

Prepare a selling and administrative expense budget.

Selling and Administrative Expense Budget ₁

At Royal, the selling and administrative expense budget is divided into variable and fixed components.

The **variable** selling and administrative expenses are \$0.50 per unit sold.

Fixed selling and administrative expenses are \$70,000 per month.

The fixed selling and administrative expenses include \$10,000 in costs—primarily depreciation—that are not cash outflows of the current month.

Let's prepare the company's selling and administrative expense budget.

Selling and Administrative Expense Budget ₂

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Budgeted sales	20,000			
Variable S&A rate	<u>0.50</u>			
Variable expenses	\$ 10,000			
Fixed S&A expenses	<u>70,000</u>			
Total S&A expenses	80,000			
Less: Noncash expenses	<u>10,000</u>			
Cash S&A expenses	<u>\$ 70,000</u>			

Calculate the selling and administrative cash expenses for the quarter.

Quick Check 6

What are the total cash disbursements for selling and administrative expenses for the quarter?

- a. \$180,000.
- b. \$230,000.
- c. \$110,000.
- d. \$70,000.

Quick Check 6a

What are the total cash disbursements for selling and administrative expenses for the quarter?

- a. \$180,000
- b. Answer: \$230,000.
- c. \$110,000
- d. \$70,000

Selling and Administrative Expense Budget ₃

	April	May	June	Quarter
Budgeted sales	20,000	50,000	30,000	100,000
Variable S&A rate	<u>0.50</u>	<u>0.50</u>	<u>0.50</u>	<u>0.50</u>
Variable expenses	\$ 10,000	\$ 25,000	\$ 15,000	\$ 50,000
Fixed S&A expenses	<u>70,000</u>	<u>70,000</u>	<u>70,000</u>	<u>210,000</u>
Total S&A expenses	80,000	95,000	85,000	260,000
Less: Noncash expenses	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>30,000</u>
Cash S&A expenses	<u>\$ 70,000</u>	<u>\$ 85,000</u>	<u>\$ 75,000</u>	<u>\$ 230,000</u>

Learning Objective 8

Prepare a cash budget.

Format of the Cash Budget

The cash budget is divided into four sections:

1. **Cash receipts** section lists all cash inflows excluding cash received from financing;
2. **Cash disbursements** section consists of all cash payments excluding repayments of principal and interest;
3. Cash excess or deficiency section determines if the company will **need to borrow money** or if it will be able to repay funds previously borrowed; and
4. **Financing section** details the borrowings and repayments projected to take place during the budget period.

Additional Cash Budget Information

Assume the following information for Royal:

- Maintains a 16% open line of credit for \$75,000.
- Maintains a minimum cash balance of \$30,000.
- Borrows on the first day of the month and repays loans on the last day of the quarter (~~month~~).
- Pays a cash dividend of \$49,000 in April.
- Purchases \$143,700 of equipment in May and \$48,300 in June (both purchases paid in cash).
- Has an April 1 cash balance of \$40,000.

Cash Budget ¹

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Beginning cash balance	\$ 40,000			
Add: Cash collections	<u>170,000</u>			
Total cash available	<u>\$ 210,000</u>			
Less: Cash disbursements				
Materials				
Direct labor				
Manufacturing overhead				
Selling and administrative				
Equipment purchase				
Dividend				
Total disbursements				
Excess (deficiency)				
Financing:				
Borrowing				
Repayment				
Interest				
Total financing				
Ending cash balance				

Schedule of expected cash collections

Cash Budget ₂

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Beginning cash balance	\$ 40,000			
Add: Cash collections	<u>170,000</u>			
Total cash available	<u>\$ 210,000</u>			
Less: Cash disbursements				
Materials	40,000			
Direct labor	13,000			
Manufacturing overhead	56,000			
Selling and administrative	70,000			
Equipment purchase	-			
Dividend	<u>49,000</u>			
Total disbursements	<u>228,000</u>			
Excess (deficiency)				
Financing:				
Borrowing				
Repayment				
Interest	-			
Total financing	-			
Ending cash balance	<u>-</u>			

**Schedule of expected
cash disbursements**

**Manufacturing overhead
budget**

**Selling and
administrative expense
budget**

Cash Budget ³

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Beginning cash balance	\$ 40,000			
Add: Cash collections	<u>170,000</u>			
Total cash available	<u>\$ 210,000</u>			
Less: Cash disbursements				
Materials	40,000			
Direct labor	13,000			
Manufacturing overhead	56,000			
Selling and administrative	70,000			
Equipment purchase	-			
Dividend	<u>49,000</u>			
Total disbursements	<u>228,000</u>			
Excess (deficiency)	(18,000)			
Financing:				
Borrowing				
Repayment				
Interest	-			
Total financing	-			
Ending cash balance	<u>-</u>			

Because Royal maintains a cash balance of \$30,000, the company must borrow \$48,000 on its line of credit.

Cash Budget ⁴

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Beginning cash balance	\$ 40,000			
Add: Cash collections	<u>170,000</u>			
Total cash available	<u>\$ 210,000</u>			
Less: Cash disbursements				
Materials	40,000			
Direct labor	13,000			
Manufacturing overhead	56,000			
Selling and administrative	70,000			
Equipment purchase	-			
Dividend	<u>49,000</u>			
Total disbursements	<u>228,000</u>			
Excess (deficiency)	(18,000)			
Financing:				
Borrowing	48,000			
Repayment	-			
Interest	-			
Total financing	<u>48,000</u>			
Ending cash balance	<u>\$ 30,000</u>			

Because Royal maintains a cash balance of \$30,000, the company must borrow \$48,000 on its line of credit.

Ending cash balance for April is the beginning May balance.

Cash Budget ⁵

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Beginning cash balance	\$ 40,000	\$ 30,000		
Add: Cash collections	<u>170,000</u>	<u>410,000</u>		
Total cash available	<u>\$ 210,000</u>	<u>\$ 440,000</u>		
Less: Cash disbursements				
Materials	40,000	72,300		
Direct labor	13,000	23,000		
Manufacturing overhead	56,000	76,000		
Selling and administrative	70,000	85,000		
Equipment purchase	-	143,700		
Dividend	<u>49,000</u>	<u>-</u>		
Total disbursements	<u>228,000</u>	<u>400,000</u>		
Excess (deficiency)	(18,000)	40,000		
Financing:				
Borrowing	48,000	-		
Repayment	-	-		
Interest	-	<u>-</u>		
Total financing	<u>48,000</u>	<u>-</u>		
Ending cash balance	<u>\$ 30,000</u>	<u>\$ 40,000</u>		

Quick Check 7

What is the excess (deficiency) of cash available over disbursements for June?

- a. \$95,000.
- b. \$(21,000).
- c. \$175,000.
- d. \$130,500.

Quick Check 7a

What is the excess (deficiency) of cash available over disbursements for June?

- a. \$95,000.
- b. \$(21,000).
- c. \$175,000.
- d. Answer: \$130,500.

Cash Budget ⁶

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Quarter</u>
Beginning cash balance	\$ 40,000	\$ 30,000	\$ 40,000	\$ 40,000
Add: Cash collections	<u>170,000</u>	<u>410,000</u>	<u>360,000</u>	<u>940,000</u>
Total cash available	<u>\$ 210,000</u>	<u>\$ 440,000</u>	<u>\$ 400,000</u>	<u>\$ 980,000</u>
Less: Cash disbursements				
Materials	40,000	72,300	72,700	185,000
Direct labor	13,000	23,000	14,500	50,500
Manufacturing overhead	56,000	76,000	59,000	191,000
Selling and administrative	70,000	85,000	75,000	230,000
Equipment purchase	-	143,700	48,300	192,000
Dividend	<u>49,000</u>	<u>-</u>	<u>-</u>	<u>49,000</u>
Total disbursements	<u>228,000</u>	<u>400,000</u>	<u>269,500</u>	<u>897,500</u>
Excess (deficiency)	(18,000)	40,000	130,500	82,500
Financing:				
Borrowing	48,000	-	-	48,000
Repayment	-	-	(48,000)	(48,000)
Interest	<u>-</u>	<u>-</u>	<u>(1,920)</u>	<u>(1,920)</u>
Total financing	<u>48,000</u>	<u>-</u>	<u>(49,920)</u>	<u>(1,920)</u>
Ending cash balance	<u>\$ 30,000</u>	<u>\$ 40,000</u>	<u>\$ 80,580</u>	<u>\$ 80,580</u>

$\$48,000 \times 16\% \times 3/12 =$
\$1,920
 Borrowings on April 1 and
 repayment on June 30.

Budgeted Income Statement ¹

Cash Budget (Completed).

- Budgeted income statement.

With interest expense from the cash budget, Royal can prepare the budgeted income statement.