

Cash Budgeting

6

In this chapter you will learn:

- How to prepare a budget for operating activities that includes a
 - Sales budget
 - Operating cash receipts budget
 - Purchases budget
 - Sales and administrative expenses budget
 - Operating cash payments budget
- How to prepare a budget for investing and financing activities
- How to finalize and format the cash budget with grouping
- How to utilize what-if analysis and goal seeking with a cash budget

Case: What SUP, Inc.

Nathan and Meagan have been contemplating an expansion of their business to include stand up paddle board repair, which will require some new equipment. Nathan is certain they don't have the cash resources necessary to pull it off. Meagan believes that, with the right financing, they'll be okay. At Kyle's suggestion, they have contacted their bankers, who recommended that they prepare a budget for the next year that specifically addresses their cash needs.

"You'll need to complete an operating activities budget that includes forecasts of sales, purchases, selling and administrative expenses, operating cash receipts, and operating cash payments for the year," Kyle informs them. "In addition, you'll need to budget for investing activities such as equipment purchases and sales as well as a budget for financing activities such as loan proceeds and repayments."

"I'll bet we could use Excel to help us!" Meagan responds. "However, since I'm not much of an accountant, I'll need help."

"I did some budgeting in my accounting classes," you comment. "If Kyle can help me get started I'm sure this can be done on Excel."

"The first place to start is with the operating activities budget," Kyle says.

Operating Activities Budget

Kyle explains that the operating activities budget will include an operating cash receipts budget and an operating activities cash payments budget. However,

before you can complete either, you must first determine your sales and purchases budgets.

“What is the difference between operating cash receipts and sales?” Meagan asks.

“The sales budget will estimate the service revenues you expect to earn and the products you expect to sell during the year; however, not all of those revenues will be collected in cash during the year. Also, some of the sales you made on account in the previous year will be collected in the current year,” Kyle answers. “So the first thing we need to do is create a sales budget.”

Sales Budget

Kyle explains that most budgets are broken into periods smaller than a year. He suggests that you prepare a quarterly budget with an annual summary column. He reminds you that you’ll need to plan for both product and repair revenue and that no cost of goods sold or expenses will appear on this part of the sales budget.

Nathan estimates product sales revenue to be \$425,000, \$400,000, \$375,000, and \$450,000 for the first through fourth quarters, respectively. During these periods, Nathan thinks he’ll bill 1,500, 1,600, 1,700, and 1,800 hours of stand-up paddle board repair (respectively) at \$50 per hour.

Kyle suggests that you place most of your assumptions that you might consider changing at a later date in a special section of the worksheet called Assumptions. This makes it easy to locate these assumptions in case you want to do some what-if analysis after the budget is created.

To prepare a sales budget:

- 1 Start Excel and open file ch6-01. The worksheet should look like Figure 6.1.

Figure 6.1

Cash Budget Worksheet

	A	B	C	D	E	F
1	What SUP	1st	2nd	3rd	4th	
2	Cash Budget	Quarter	Quarter	Quarter	Quarter	Year
3						
4						
5						
6						
7						
8						
9						

- 2 Type **Operating activities** in cell A4 and then type **Operating cash receipts** into cell A5. Then type **Estimated repair hours** into cell A6.
- 3 Type **1500** into cell B6, **1600** into cell C6, **1700** into cell D6, and **1800** into cell E6.
- 4 Type **=SUM(B6:E6)** into cell F6 and then press **[Enter]** to sum estimated repair hours.
- 5 Format cells B6 to F6 with commas and no decimals. (*Hint: Use the comma style and decimal tools.*)

- 6 Format cells B6 to F6 with a bottom border by selecting those cells, clicking the **Border** tool located in the Font group of the Home tab of the Ribbon, and then selecting the **Bottom Border** tool. (*Note:* This is done to indicate that the number is not summed in later formulas.)
- 7 Type **Assumptions** in cell and then type **Hourly repair rate** in cell A42.
- 8 Type **50** into cell B42 and format that cell with commas and no decimals.
- 9 Define cell B42 as the Hourly repair rate by selecting cells **A42** to **B42**. From the Defined Names group in the Formula tab of the Ribbon, click **Create from Selection**. With the Left column check box checked, click **OK**.
- 10 Type **Professional services revenue** in cell A7.
- 11 Type **=B6*** into cell B7 but do *not* press the [Enter] key.
- 12 From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**, select **Hourly_repair_rate**, and then press [Enter] to compute professional services revenue. (Observe how the formatting from B6 is transferred to cell B6.) Fill the formula across to cells B7 through E7.
- 13 Type **=SUM(B7:E7)** into cell F7 and then press [Enter] to sum estimated repair hours.
- 14 Type **Product sales revenue** into cell A8.
- 15 Type the product sales revenue estimates **425000**, **400000**, **375000**, and **450000** into cells B8 through E8, respectively.
- 16 Type **=SUM(B8:E8)** into cell F8 and then press [Enter] to sum Professional services revenues.
- 17 Format cells B8 to F8 with commas and no decimals and a bottom border.
- 18 Type **Total revenue** into cell A9.
- 19 Type the formula **=B7+B8** into cell B9 to calculate total revenue. Fill the formula across to cells C9 through E9.
- 20 Type **=SUM(B9:E9)** into cell F9 and then press [Enter] to sum revenues.
- 21 Format cells B9 to F9 with commas and no decimals and a bottom border.
- 22 The completed worksheet should look like Figure 6.2.
- 23 Save your work to ch6-01_student_name (replacing student_name with your name as before).

Figure 6.2
Sales Budget

	A	B	C	D	E	F
1	What SUP	1st	2nd	3rd	4th	
2	Cash Budget	(Ctrl) *	Quarter	Quarter	Quarter	Year
3						
4	Operating activities					
5	Operating cash receipts					
6	Estimated repair hours	1,500	1,600	1,700	1,800	6,600
7	Professional services revenue	75,000	80,000	85,000	90,000	330,000
8	Product sales revenue	425,000	400,000	375,000	450,000	1,650,000
9	Total revenue	500,000	480,000	460,000	540,000	1,980,000

Now that you have created the sales budget, you can create the operating cash receipts budget.

Operating Cash Receipts Budget

Kyle explains that the operating cash receipts budget must account for the timing of revenue collection. Whenever a company offers terms to customers (i.e., payment at other than the time of sale, such as “net 30”), the budget must take into consideration when revenue will actually be collected.

“Based on the last two years, our customers usually pay 80 percent of what we’ve invoiced them in the quarter when sales were earned and 20 percent in the next quarter” says Nathan. “At the end of last year we had a balance of \$81,000 in accounts receivable.”

Kyle suggests that you use that information, along with the data provided in the sales budget, to calculate an operating cash receipts budget.

To create the operating cash receipts budget:

- 1** To add the new assumptions just discussed, type **Pct. collections in current quarter** in cell A43.
- 2** Type **80%** in cell B43.
- 3** Type **Pct. collections in subsequent quarter** in cell A44.
- 4** Type **20%** in cell B44.
- 5** Type **Beginning accounts receivable** in cell A45.
- 6** Type **81000** in cell B45 and then format the cell in comma format with no decimals.
- 7** Define names for cells B43 through B45 as you have done before.
- 8** Type **Current quarter collections** in cell A10.
- 9** Type **Subsequent quarter collections** in cell A11.
- 10** Type **Operating cash receipts** in cell A12.
- 11** Type **=B9*** into cell B10 but do *not* press the [Enter] key.

- 12 From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**, select **Pct_collections_in_current_quarter**, and then press [Enter] to compute current quarter collections. Fill the formula across to cells C10 through E10.
- 13 Type =SUM(B10:E10) into cell F10 and then press [Enter] to sum current quarter collections.
- 14 Type = into cell B11 but do *not* press the [Enter] key.
- 15 From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**, select **Beginning_accounts_receivable**, and then press [Enter]. Format the cell in comma format with no decimals.
- 16 Type =B9* into cell C11 but do *not* press the [Enter] key.
- 17 From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**, select **Pct_collections_in_subsequent_quarter**, and then press [Enter] to compute subsequent quarter collections. Fill the formula across to cells C11 through E11.
- 18 Type =SUM(B11:E11) into cell F11 and then press [Enter] to sum subsequent quarter collections.
- 19 Place a bottom border in cells B11 through F11.
- 20 Type =B10+B11 into cell B12 and then fill this formula across to cells C12 through E12.
- 21 Type =SUM(B12:E12) into cell F12 and then press [Enter] to sum operating cash receipts.
- 22 Place a bottom border in cells B12 through F12. Your cash budget so far should look like Figure 6.3.

	A	B	C	D	E	F
1	What SUP	1st	2nd	3rd	4th	
2	Cash Budget	Quarter	Quarter	Quarter	Quarter	Year
3						
4	Operating activities					
5	Operating cash receipts					
6	Estimated repair hours	1,500	1,600	1,700	1,800	6,600
7	Professional services revenue	75,000	80,000	85,000	90,000	330,000
8	Product sales revenue	425,000	400,000	375,000	450,000	1,650,000
9	Total revenue	500,000	480,000	460,000	540,000	1,980,000
10	Current quarter collections	400,000	384,000	368,000	432,000	1,584,000
11	Subsequent quarter collections	81,000	100,000	96,000	92,000	369,000
12	Operating cash receipts	481,000	484,000	464,000	524,000	1,953,000

Figure 6.3

Cash Budget of Operating Cash Receipts

- 23 Save your work.

Kyle explains that now it is time to move on to budgeting operating cash payments. It is important first to budget purchases to meet sales demand and

then to contemplate when those purchases will be paid for and then to consider what other operating cash payments must be made, such as selling and administrative expenses.

Purchases Budget

Nathan and Meagan explain that quarterly purchases are dependent on beginning inventory, the cost of expected sales, and the desired amount of ending inventory. They give the following example. Assume a beginning inventory of \$500 and expected merchandise sales of \$1,500 (that cost them \$900). Further, assume they would like to keep an inventory of \$400 on hand for next month's sales. Hence they will need to purchase \$800 of inventory during the quarter. This is computed using the following formula: cost of expected sales (\$900) + desired ending inventory (\$400) – beginning inventory (\$500) = required purchases (\$800).

Nathan estimates that the cost of most of his inventory is 60 percent of sales. For example, a necklace Coast sells for \$100 cost them \$60. Further, he would like to maintain an inventory on hand each month of 80 percent of expected sales in the following month. Inventory at the beginning of the year was \$125,000, and product sales in the first quarter of the next year are expected to be \$500,000.

Kyle recommends that you take a shot at producing the desired purchases budget while explaining the process to Meagan and Nathan.

To create a purchases budget:

- 1** Type **Operating cash payments** in cell A13 and format this cell bold.
- 2** Type **Purchases** in cell A14.
- 3** To add the new assumptions discussed above, type **Cost of expected sales** in cell A46.
- 4** Type **60%** in cell B46.
- 5** Type **Required ending inventory** in cell A47.
- 6** Type **80%** in cell B47.
- 7** Type **Beginning inventory** in cell A48.
- 8** Type **125000** in cell B48
- 9** Type **Product sales 1st quarter of next year** in cell A49.
- 10** Type **500000** in cell B49.
- 11** Define names for cells B46 through B49 and format them as you have done before.
- 12** Type **Cost of expected sales** in cell A15.
- 13** Type **Required ending inventory** in cell A16.
- 14** Type **Beginning inventory** in cell A17.
- 15** Type **Purchases** in cell A18.
- 16** Type **=B8*** into cell B15 but do *not* press the [Enter] key. (*Note:* This is not total revenue but just product sales revenue.)

- 17** From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**, select **Cost_of_expected_sales**, and then press [Enter] to compute the cost of expected sales for the quarter.
- 18** Fill the formula across to cells C15 through E15.
- 19** Type =SUM(B15:E15) into cell F15 and then press [Enter] to sum the cost of expected sales for the year.
- 20** Type =C15* into cell B16 but do *not* press the [Enter] key.
- 21** From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**, select **Required_ending_inventory**, and then press [Enter] to compute the required ending inventory for the quarter. Fill the formula across to cells C16 through D16.
- 22** Type = into cell E16 but do *not* press the [Enter] key.
- 23** From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**.
- 24** Click **Cost_of_expected_sales**, then type *. Continue the same process of selecting the Use in Formula command to insert names. When complete your formula in cell E16 should be=Cost_of_expected_sales *Required_ending_inventory* Product_sales_1st_quarter_of_next_year. After entering the formula press [Enter].
- 25** Type =E16 in cell F16 to indicate that the required ending inventory for the year is the same as the required ending inventory for the fourth quarter.
- 26** Type =- in cell B17, and then click **Use in Formula** from the Defined Names group on the Formulas tab of the Ribbon. (*Note:* Be sure you type the equals sign *and* the minus sign here to indicate you are going to make this value negative.)
- 27** Select **Beginning_inventory** and then press [Enter]. Format the cell.
- 28** Type =-B16 in cell C17 and then press [Enter] to indicate that the current quarter's beginning inventory is equal to the previous quarter's ending inventory. Fill this formula across from cell D17 to E17.
- 29** Type =B17 in cell F17 to indicate that the beginning inventory for the year was the same as the beginning inventory for the first quarter.
- 30** Place a bottom border in cells B17 through F17.
- 31** Type =SUM(B15:B17) in cell B18 to calculate the first quarter's purchases. Fill this formula across to cell C18 to F18.

32 Place a bottom border in cells B18 through F18. Your completed cash budget, including purchases, should look like Figure 6.4.

Figure 6.4

Cash Budget of Operating Cash Receipts Through Purchases

	A	B	C	D	E	F
1	What SUP	1st	2nd	3rd	4th	
2	Cash Budget	Quarter	Quarter	Quarter	Quarter	Year
3						
4	Operating activities					
5	Operating cash receipts					
6	Estimated repair hours	1,500	1,600	1,700	1,800	6,600
7	Professional services revenue	75,000	80,000	85,000	90,000	330,000
8	Product sales revenue	425,000	400,000	375,000	450,000	1,650,000
9	Total revenue	500,000	480,000	460,000	540,000	1,980,000
10	Current quarter collections	400,000	384,000	368,000	432,000	1,584,000
11	Subsequent quarter collections	81,000	100,000	96,000	92,000	369,000
12	Operating cash receipts	481,000	484,000	464,000	524,000	1,953,000
13	Operating cash payments					
14	Purchases					
15	Cost of expected sales	255,000	240,000	225,000	270,000	990,000
16	Required ending inventory	192,000	180,000	216,000	240,000	240,000
17	Beginning inventory	(125,000)	(192,000)	(180,000)	(216,000)	(125,000)
18	Purchases	322,000	228,000	261,000	294,000	1,105,000

33 Save your work.

“As you can see, the purchases budget is based on the sales budget we had previously created and some additional facts and assumptions, such as the relationship between sales and costs of goods sold,” Kyle notes.

“How does all this relate to cash flow?” you ask.

“We must now factor in the relationship between when we purchase merchandise and when we actually pay for it,” Kyle answers. “Thus, we have to adjust purchases for our payment expectations.”

Operating Cash Payments for Purchases

Kyle explains that, whenever a vendor or supplier does not require immediate payment, the budget must take into consideration when payment is actually paid. In this case, it is expected that 75 percent of purchases are paid in the month of purchase and 25 percent are paid in the month following purchases. He also points out that, at the beginning of the year, the company’s accounts payable amount to \$16,000, which must be paid in the first quarter. He suggests you add the assumptions he just made to your cash budget and incorporate them into your calculation of cash payments for purchases.

To create a cash payments for purchases budget:

- 1** Type **Current quarter payments** in cell A19.
- 2** Type **Subsequent quarter payments** in cell A20.

- 3** Type **Cash payments for purchases** in cell A21.
- 4** To add the new assumptions just discussed, type **Beginning accounts payable** in cell A50.
- 5** Type **16000** in cell B50. Format the cell.
- 6** Type **Pct. of purchases paid in current quarter** in cell A51.
- 7** Type **75%** in cell B51.
- 8** Type **Pct. of purchases paid in subsequent quarter** in cell A52.
- 9** Type **25%** in cell B52.
- 10** Define names for cells B50 through B52 as you have done before.
- 11** Type **=B18*** into cell B19 but do *not* press the [Enter] key.
- 12** From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**, select **Pct._of_purchases_paid_in_current_quarter**, and then press [Enter].
- 13** Fill the formula across to cells C19 through E19.
- 14** Type **=SUM(B19:E19)** into cell F19 and then press [Enter] to sum the current quarter payments for the year.
- 15** Type **=** into cell B20 but do *not* press the [Enter] key.
- 16** From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**, select **Beginning_accounts_payable**, and then press [Enter].
- 17** Format the cell in comma format with no decimals.
- 18** Type **=B18*** into cell C20 but do *not* press the [Enter] key.
- 19** From the Defined Names group in the Formulas tab of the Ribbon, click **Use in Formula**, select **Pct._of_purchases_paid_in_subsequent_quarter**, and then press [Enter].
- 20** Format the cell in comma format with no decimals, and then fill the formula across to cells D20 through E20.
- 21** Type **=SUM(B20:E20)** into cell F20 and then press [Enter] to sum the subsequent quarter payments for the year.
- 22** Place a bottom border in cells B20 through F20.
- 23** Type **=B19+B20** in cell B21 to sum payments made in the quarter, and then fill the formula across to cells C21 through F21.
- 24** Place a bottom border in cells B21 through F21. Your modified cash budget should look like Figure 6.5.

Figure 6.5

Cash Budget with Cash Payments for Purchases

	A	B	C	D	E	F
1	What SUP	1st	2nd	3rd	4th	
2	Cash Budget	Quarter	Quarter	Quarter	Quarter	Year
3						
4	Operating activities					
5	Operating cash receipts					
6	Estimated repair hours	1,500	1,600	1,700	1,800	6,600
7	Professional services revenue	75,000	80,000	85,000	90,000	330,000
8	Product sales revenue	425,000	400,000	375,000	450,000	1,650,000
9	Total revenue	500,000	480,000	460,000	540,000	1,980,000
10	Current quarter collections	400,000	384,000	368,000	432,000	1,584,000
11	Subsequent quarter collections	81,000	100,000	96,000	92,000	369,000
12	Operating cash receipts	481,000	484,000	464,000	524,000	1,953,000
13	Operating cash payments					
14	Purchases					
15	Cost of expected sales	255,000	240,000	225,000	270,000	990,000
16	Required ending inventory	192,000	180,000	216,000	240,000	240,000
17	Beginning inventory	(125,000)	(192,000)	(180,000)	(216,000)	(125,000)
18	Purchases	322,000	228,000	261,000	294,000	1,105,000
19	Current quarter payments	241,500	171,000	195,750	220,500	828,750
20	Subsequent quarter payments	16,000	80,500	57,000	65,250	218,750
21	Cash payments for purchases	257,500	251,500	252,750	285,750	1,047,500

25 Save your work.

“Operating cash flow encompasses cash inflow from sales as well as cash outflow for purchases and expenses,” Kyle explains. “Next up is budget for sales and administrative expenses. The nice thing about these expenses is that they are usually paid in the same period they are incurred.”

Sales and Administrative Expenses Budget

Kyle explains to you, Nathan, and Meagan that the sales and administrative expense budget won't be linked to either sales or purchases. Instead, the budget will be based on expected costs to be incurred for advertising, depreciation, payroll, and utilities. Nathan thinks that advertising expense will be \$25,000 in the first quarter and then increase \$5,000 per quarter over the year. Depreciation will be \$8,000 in the first quarter and then increase \$1,000 per quarter over the year based on new equipment purchases. Payroll will vary based on the expected expansion of business and seasonal sales but is expected to be \$125,000 the first quarter, \$150,000 in the first and second quarter, and then \$185,000 in the fourth quarter. Utilities will be based on the prior year's actual results, which were \$15,000, \$18,000, \$17,500, and \$19,000 in the first through fourth quarters, respectively.

“How does depreciation affect our cash budget?” you ask. “Isn't depreciation a noncash outlay?”

“As a matter of fact, it is,” Kyle answers. “It is still an expense, but we won't include it in our selling and administrative expense budget.”

Kyle suggests that you prepare the sales and administrative expense budget based on the data provided—excluding depreciation, as you so aptly pointed out.

To create the selling and administrative expense portion of your cash budget:

- 1 Type **Selling and administrative expenses** in cell A22.
- 2 Type **Advertising expense** in cell A23.
- 3 Type **Payroll expense** in cell A24.
- 4 Type **Utilities expense** in cell A25.
- 5 Type **Selling and administrative expenses** in cell A26.
- 6 Enter the expense information provided by Nathan into cells B23 through E25.
- 7 Enter formulas to sum quarterly expenses in cells B26 through E26.
- 8 Enter formulas to sum expenses in cells F23 through F26.
- 9 Place a bottom border in cells B25 through F25.
- 10 Place a bottom border in cells B26 through F26. Your modified cash budget should look like Figure 6.6.

	A	B	C	D	E	F
1	What SUP	1st	2nd	3rd	4th	
2	Cash Budget	Quarter	Quarter	Quarter	Quarter	Year
3						
4	Operating activities					
5	Operating cash receipts					
6	Estimated repair hours	1,500	1,600	1,700	1,800	6,600
7	Professional services revenue	75,000	80,000	85,000	90,000	330,000
8	Product sales revenue	425,000	400,000	375,000	450,000	1,650,000
9	Total revenue	500,000	480,000	460,000	540,000	1,980,000
10	Current quarter collections	400,000	384,000	368,000	432,000	1,584,000
11	Subsequent quarter collections	81,000	100,000	96,000	92,000	369,000
12	Operating cash receipts	481,000	484,000	464,000	524,000	1,953,000
13	Operating cash payments					
14	Purchases					
15	Cost of expected sales	255,000	240,000	225,000	270,000	990,000
16	Required ending inventory	192,000	180,000	216,000	240,000	240,000
17	Beginning inventory	(125,000)	(192,000)	(180,000)	(216,000)	(125,000)
18	Purchases	322,000	228,000	261,000	294,000	1,105,000
19	Current quarter payments	241,500	171,000	195,750	220,500	828,750
20	Subsequent quarter payments	16,000	80,500	57,000	65,250	218,750
21	Cash payments for purchases	257,500	251,500	252,750	285,750	1,047,500
22	Selling and administrative expenses					
23	Advertising expense	25,000	30,000	35,000	40,000	130,000
24	Payroll expense	125,000	150,000	150,000	185,000	610,000
25	Utilities expense	15,000	18,000	17,500	19,000	69,500
26	Selling and administrative expenses	165,000	198,000	202,500	244,000	809,500

Figure 6.6

Cash Budget with Cash Payments for Expenses

- 11 Save your work.

Operating Cash Payments Budget

Kyle remarks that you must now put all the pieces together in order to complete the operating cash payments budget. The budget will consist of the sum of payments made for purchases and payments made for selling and administrative expenses.

To finalize the operating cash payments budget:

- 1 Type **Operating cash payments** in cell A27.
- 2 Type $=B21+B26$ in cell B27 to add the first-quarter cash payments for purchases to the first-quarter cash payments for selling and administrative expenses together.
- 3 Fill this formula across to cells C27 through F27.
- 4 Place a bottom border in cells B27 through F27.

To finalize the operating portion of the cash budget, all that is left is to subtract the operating cash payments from the operating cash receipts.

To finalize the operating cash budget:

- 1 Type **Cash from (to) operating activities** in cell A28.
- 2 Type $=B12-B27$ in cell B28 to subtract the first-quarter cash payments from the first-quarter cash receipts.
- 3 Fill this formula across to cells C28 through F28.
- 4 Place a bottom border in cells B28 through F28. Your completed cash budget for operating activities is shown in Figure 6.7.

Figure 6.7

Completed Cash Budget
from Operating Activities

	A	B	C	D	E	F
1	What SUP	1st	2nd	3rd	4th	
2	Cash Budget	Quarter	Quarter	Quarter	Quarter	Year
3						
4	Operating activities					
5	Operating cash receipts					
6	Estimated repair hours	1,500	1,600	1,700	1,800	6,600
7	Professional services revenue	75,000	80,000	85,000	90,000	330,000
8	Product sales revenue	425,000	400,000	375,000	450,000	1,650,000
9	Total revenue	500,000	480,000	460,000	540,000	1,980,000
10	Current quarter collections	400,000	384,000	368,000	432,000	1,584,000
11	Subsequent quarter collections	81,000	100,000	96,000	92,000	369,000
12	Operating cash receipts	481,000	484,000	464,000	524,000	1,953,000
13	Operating cash payments					
14	Purchases					
15	Cost of expected sales	255,000	240,000	225,000	270,000	990,000
16	Required ending inventory	192,000	180,000	216,000	240,000	240,000
17	Beginning inventory	(125,000)	(192,000)	(180,000)	(216,000)	(125,000)
18	Purchases	322,000	228,000	261,000	294,000	1,105,000
19	Current quarter payments	241,500	171,000	195,750	220,500	828,750
20	Subsequent quarter payments	16,000	80,500	57,000	65,250	218,750
21	Cash payments for purchases	257,500	251,500	252,750	285,750	1,047,500
22	Selling and administrative expenses					
23	Advertising expense	25,000	30,000	35,000	40,000	130,000
24	Payroll expense	125,000	150,000	150,000	185,000	610,000
25	Utilities expense	15,000	18,000	17,500	19,000	69,500
26	Selling and administrative expenses	165,000	198,000	202,500	244,000	809,500
27	Operating cash payments	422,500	449,500	465,250	529,750	1,857,000
28	Cash from (to) operating activities	58,500	34,500	8,750	(5,750)	96,000

- 5 Save your work.

“That was interesting,” you comment. “I have prepared a statement of cash flows before but never a budget that looked like a statement of cash flows!”

“Ah, but there is more,” Kyle responds. “Remember, the other two components of cash flow are investing and financing activities.”

Investing and Financing Activities Budgets

You recall that investing activities usually involve not only the purchase or sale of such long-term assets as land, buildings, and equipment but also the purchase or sale of long-term investments. You also know that financing activities usually involve borrowings or repayment of borrowings, the sale or repurchase of stock, and/or the payment of dividends.

“What are your plans for the coming year?” Kyle asks.

“Well, I’d like to purchase some new equipment in the second quarter for about \$300,000,” Nathan says. “The bank is willing to lend me \$250,000, provided these budgets support the stories I’ve been telling them about the business. The quarterly payment on the loan, which includes interest, is about \$20,000 starting in the third quarter.”

“That’s all the information we need to create the investing and financing portion of our cash budget,” Kyle says. “Let’s have our student here finalize the budget.”

To create the investing and financing portion of our cash budget:

- 1** Type **Investing activities** in cell A29.
- 2** Verify that this cell is formatted bold.
- 3** Type **Equipment purchases** in cell A30.
- 4** Type **Equipment sales** in cell A31.
- 5** Type **Cash from (to) investing activities** in cell A32.
- 6** Type **Financing activities** in cell A33.
- 7** Verify that this cell is formatted bold.
- 8** Type **Loan proceeds** in cell A34.
- 9** Type **Loan payments** in cell A35.
- 10** Type **Cash from (to) financing activities** in cell A36.
- 11** Type **–300000** in cell C30 to reflect the equipment purchase in the second quarter.
- 12** Type **250000** in cell C34 to reflect the proceeds from the loan in the second quarter.
- 13** Type **–20000** in cells D35 and E35 to reflect payments on the loan made in the third and fourth quarter.

- 14** Format all cells in the range B30 to F36 in comma format with no decimals.
- 15** Type `=SUM(B30:E30)` in cell F30.
- 16** Type `=SUM(B31:E31)` in cell F31.
- 17** Place a bottom border in cells B31 through F31.
- 18** Type `=B30+B31` in cell B32 and then fill this formula across from cell C32 to F32.
- 19** Place a bottom border in cells B32 through F32.
- 20** Place a bottom border in cells B35 through F35.
- 21** Type `=SUM(B34:E34)` in cell F34.
- 22** Type `=SUM(B35:E35)` in cell F35.
- 23** Type `=B34+B35` in cell B36 and then fill this formula across from cell C36 to F36.
- 24** Place a bottom border in cells B36 through F36. The investing and financing portion of your cash budget should look like Figure 6.8.

Figure 6.8

Investing and Financing
Portion of the Cash Budget

	A	B	C	D	E	F
29	Investing activities					
30	Equipment purchases		(300,000)			(300,000)
31	Equipment sales					-
32	Cash from (to) investing activities	-	(300,000)	-	-	(300,000)
33	Financing activities					
34	Loan proceeds		250,000			250,000
35	Loan payments			(20,000)	(20,000)	(40,000)
36	Cash from (to) financing activities	-	250,000	(20,000)	(20,000)	210,000

- 25** Save your work.

You are very close to completing the cash budget.

Finalizing and Formatting the Cash Budget

“To finalize the cash budget we need to compute the net change in cash and compare it to beginning cash to determine our forecasted ending cash balance for the year,” comments Kyle. “How much cash will you have at the beginning of the budgeted period?” Kyle asks.

“Right now my best estimate is about \$25,000,” Nathan responds.

To finalize the cash budget:

- 1** To add the new assumptions discussed above, type **Beginning cash** in cell A53.

- 2** Type **25000** in cell B53. Format the cell in comma format with no decimals.
- 3** Define a name for cell B53 as you've done before.
- 4** Type **Change in cash** in cell A37.
- 5** Type **Beginning cash** in cell A38.
- 6** Type **Ending cash** in cell A39.
- 7** Type **=B28+B32+B36** in cell B37 to add operating, investing, and financing cash activities for the first quarter.
- 8** Fill that formula across from cell C37 to F37.
- 9** Click in cell **B38**, click **Use in Formula** from the Defined Names group on the Formulas tab of the Ribbon, click **Beginning_cash**, and then press [**Enter**]. Format the cell in comma format with no decimals.
- 10** Type **=B37+B38** in cell B39.
- 11** Fill that formula across from cell C39 to F39.
- 12** Type **=B39** in cell C38 to reference ending cash from the first quarter to beginning cash in the second quarter.
- 13** Fill that formula across from cell D38 to E38.
- 14** Type **=B38** in cell F38 to reference beginning cash from the first quarter to beginning cash for the year.
- 15** Place a bottom border in cells B38 through F38.
- 16** Place a bottom double border in cells B39 through F39.
- 17** Save your work.
- 18** Click **File** and then click **Print**.
- 19** Click **OK** to print the cash budget (two pages) shown in Figure 6.9 and Figure 6.10.
- 20** Press the [**Ctrl**] and [**`**] (grave accent key) keys simultaneously to switch to Formula view. Part of your window should look like Figure 6.11.
- 21** Click the **Microsoft Office** button and then click **Print**.
- 22** Click **Preview** and then click **Page Setup**.
- 23** Choose the **Landscape** option for orientation and then click the **Fit to:** scaling option.
- 24** Set scaling to 1 page wide by 1 tall and then click **OK** in the Page Setup window.
- 25** Click **Print** in the Print Preview window and then click **OK** to print the cash budget in Formula view.

Figure 6.9

Completed Cash Budget

What SUP	1st	2nd	3rd	4th	
Cash Budget	Quarter	Quarter	Quarter	Quarter	Year
Operating activities					
Operating cash receipts					
Estimated repair hours	1,500	1,600	1,700	1,800	6,600
Professional services revenue	75,000	80,000	85,000	90,000	330,000
Product sales revenue	425,000	400,000	375,000	450,000	1,650,000
Total revenue	500,000	480,000	460,000	540,000	1,980,000
Current quarter collections	400,000	384,000	368,000	432,000	1,584,000
Subsequent quarter collections	81,000	100,000	96,000	92,000	369,000
Operating cash receipts	481,000	484,000	464,000	524,000	1,953,000
Operating cash payments					
Purchases					
Cost of expected sales	255,000	240,000	225,000	270,000	990,000
Required ending inventory	192,000	180,000	216,000	240,000	240,000
Beginning inventory	(125,000)	(192,000)	(180,000)	(216,000)	(125,000)
Purchases	322,000	228,000	261,000	294,000	1,105,000
Current quarter payments	241,500	171,000	195,750	220,500	828,750
Subsequent quarter payments	16,000	80,500	57,000	65,250	218,750
Cash payments for purchases	257,500	251,500	252,750	285,750	1,047,500
Selling and administrative expenses					
Advertising expense	25,000	30,000	35,000	40,000	130,000
Payroll expense	125,000	150,000	150,000	185,000	610,000
Utilities expense	15,000	18,000	17,500	19,000	69,500
Selling and administrative expenses	165,000	198,000	202,500	244,000	809,500
Operating cash payments	422,500	449,500	455,250	529,750	1,857,000
Cash from (to) operating activities	58,500	34,500	8,750	(5,750)	96,000
Investing activities					
Equipment purchases		(300,000)			(300,000)
Equipment sales					-
Cash from (to) investing activities	-	(300,000)	-	-	(300,000)
Financing activities					
Loan proceeds		250,000			250,000
Loan payments			(20,000)	(20,000)	(40,000)
Cash from (to) financing activities	-	250,000	(20,000)	(20,000)	210,000
Change in cash	58,500	(15,500)	(11,250)	(25,750)	6,000
Beginning cash	25,000	83,500	68,000	56,750	25,000
Ending cash	83,500	68,000	56,750	31,000	31,000

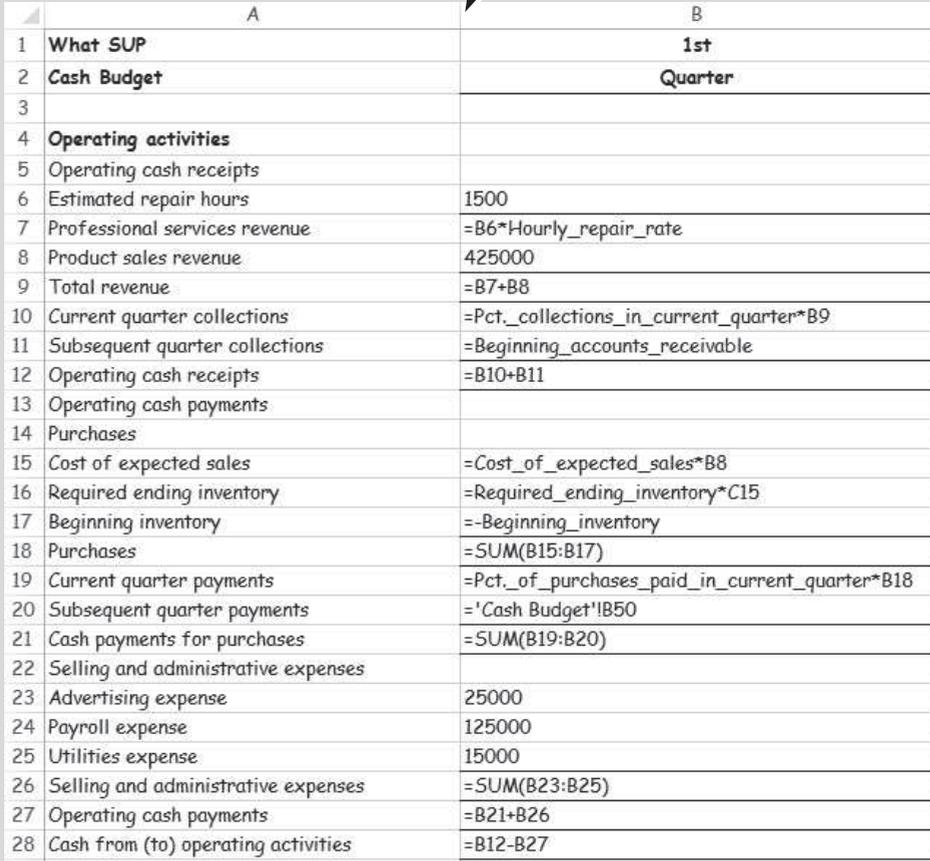
Figure 6.10

Cash Budget Assumptions

Assumptions	
Hourly repair rate	50
Pct. collections in current quarter	80%
Pct. collections in subsequent quarter	20%
Beginning accounts receivable	81,000
Cost of expected sales	60%
Required ending inventory	80%
Beginning inventory	125,000
Product sales 1st quarter of next year	500,000
Beginning accounts payable	16,000
Pct. of purchases paid in current quarter	75%
Pct. of purchases paid in subsequent quarter	25%
Beginning cash	\$25,000

- 26** Press the [Ctrl] and ` (grave accent key) keys simultaneously to switch back to Value view.
- 27** Double-click between each column to resize that column to fit its contents.
- 28** Save your work.

Double-click here to resize column A to fit its contents



	A	B
1	What SUP	1st
2	Cash Budget	Quarter
3		
4	Operating activities	
5	Operating cash receipts	
6	Estimated repair hours	1500
7	Professional services revenue	=B6*Hourly_repair_rate
8	Product sales revenue	425000
9	Total revenue	=B7+B8
10	Current quarter collections	=Pct_collections_in_current_quarter*B9
11	Subsequent quarter collections	=Beginning_accounts_receivable
12	Operating cash receipts	=B10+B11
13	Operating cash payments	
14	Purchases	
15	Cost of expected sales	=Cost_of_expected_sales*B8
16	Required ending inventory	=Required_ending_inventory*C15
17	Beginning inventory	=Beginning_inventory
18	Purchases	=SUM(B15:B17)
19	Current quarter payments	=Pct_of_purchases_paid_in_current_quarter*B18
20	Subsequent quarter payments	=Cash Budget!B50
21	Cash payments for purchases	=SUM(B19:B20)
22	Selling and administrative expenses	
23	Advertising expense	25000
24	Payroll expense	125000
25	Utilities expense	15000
26	Selling and administrative expenses	=SUM(B23:B25)
27	Operating cash payments	=B21+B26
28	Cash from (to) operating activities	=B12-B27

Figure 6.11

Partial Formula View of the Cash Budget

“I like using names in Excel,” says Nathan. “It is much easier to follow the formula logic when I see descriptions of what is going on rather than just cell references.”

“I agree,” responds Meagan. “It’s not much of a hassle to create and use the names, because Excel gives you the ‘Create from Selection’ option for naming cells and the ‘Use in Formula’ option for using names.”

Excel also has a grouping feature that can dramatically change the way this budget is viewed. Kyle explains that the entire budget can be summarized horizontally (by rows) down to the entries for cash from (to) operating, investing, and financing activities, the net change in cash, beginning cash, and ending cash. The budget can also be grouped vertically to collapse columns and show only the year amounts. Kyle offers to show you Excel’s grouping feature by creating five different levels of grouping.

To use Excel’s grouping feature on the cash budget:

- 1 Click and select rows 6, 7, and 8, as shown in Figure 6.12, to group total revenues.

Click here to group your selection

Click here to ungroup your selection

Click here to select these three rows

Figure 6.12
Grouping

- 2** Click **Group** in the Outline group on the Data tab of the Ribbon.
- Trouble?** What if you accidentally group the wrong rows? No problem, just reselect those rows that you grouped and then click Ungroup from the Outline group on the Data tab of the Ribbon.
- 3** Click and select rows **5** through **11** to group operating cash receipts.
- 4** Click **Group** in the Outline group on the Data tab of the Ribbon.
- 5** Click and select rows **14** through **17** to group purchases.
- 6** Click **Group** in the Outline group on the Data tab of the Ribbon.
- 7** Click and select rows **14** through **20** to group cash payments for purchases.
- 8** Click **Group** in the Outline group on the Data tab of the Ribbon.
- 9** Click and select rows **22** through **25** to group selling and administrative expenses.
- 10** Click **Group** in the Outline group on the Data tab of the Ribbon.
- 11** Click and select rows **13** through **26** to group operating cash payments.
- 12** Click **Group** in the Outline group on the Data tab of the Ribbon.

- 13 Click and select rows 4 through 27 to group operating activities.
- 14 Click **Group** in the Outline group on the Data tab of the Ribbon.
- 15 Click and select rows 29 through 31 to group investing activities.
- 16 Click **Group** in the Outline group on the Data tab of the Ribbon.
- 17 Click and select rows 33 through 35 to group financing activities.
- 18 Click **Group** in the Outline group on the Data tab of the Ribbon.
- 19 Click and select columns B through E to group quarters.
- 20 Click **Group** in the Outline group on the Data tab of the Ribbon.
- 21 Click 1 to collapse the column group to the first level.
- 22 Click 1 to collapse the row group to the first level. Your worksheet should look like Figure 6.13.

Click here to collapse rows to level 1

Click here to collapse columns to level 1

	1	2	3	4	5	A	F
1	What SUP						
2	Cash Budget						Year
3							
28	Cash from (to) operating activities						96,000
32	Cash from (to) investing activities						(300,000)
36	Cash from (to) financing activities						210,000
37	Change in cash						6,000
38	Beginning cash						25,000
39	Ending cash						31,000

Figure 6.13

Cash Budget Grouped at Level-1 Rows and Level-1 Columns

- 23 Click 2 to collapse the column group to the second level.
- 24 Click 2 to collapse the row group to the second level. Your worksheet should look like Figure 6.14.

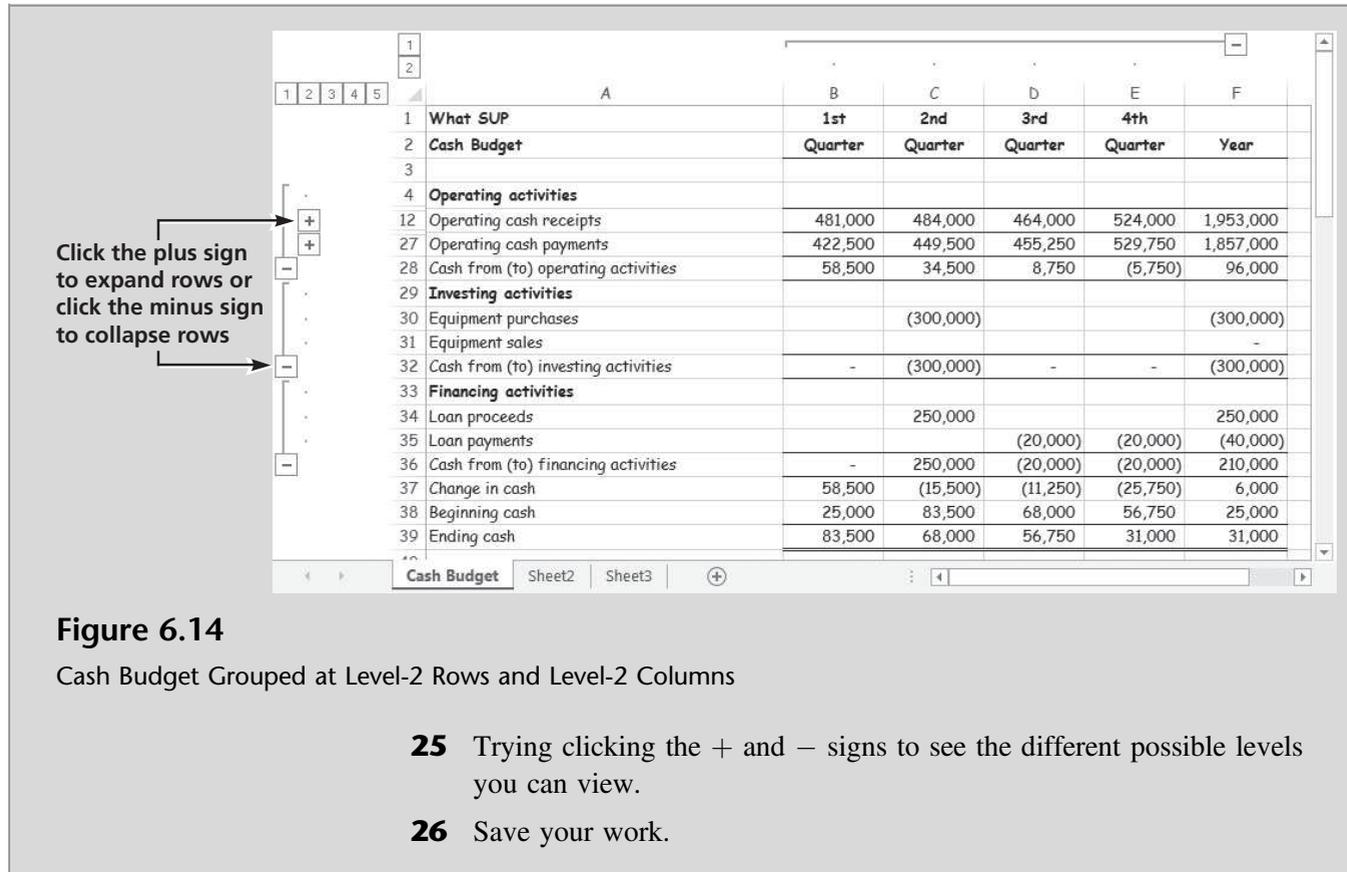


Figure 6.14

Cash Budget Grouped at Level-2 Rows and Level-2 Columns

- 25** Trying clicking the + and – signs to see the different possible levels you can view.
- 26** Save your work.

The resulting cash budget leaves the company with only \$31,000 at the end of the fourth quarter—which, as Nathan explains, is not acceptable. “We must have done something wrong. I’m sure the bank will reject my application if I present them this budget,” he says.

Using What-If Analysis and Goal Seeking with the Cash Budget

“Perhaps we can use Excel’s What-If feature to manipulate the budget and give us a better ending balance?” Meagan says. “I propose we increase the hourly rate we charge for repairs from \$50 to \$75 per hour.”

“We can also use the goal seek feature we used before to determine what changes need to be made to achieve a certain target value for ending cash,” you suggest. “For instance, if we want an ending cash balance of \$50,000, what cost of expected sales percentage could you use?”

Kyle suggests you experiment with your newly created cash budget by using what-if analysis and goal seeking for the two scenarios described.

To use what-if analysis and goal seeking with the cash budget:

- 1** Change the hourly rate charged for repairs to \$75 in cell B42.
- 2** The result should be ending cash of \$187,000, assuming the change in hourly rate had no effect on the projected repair hours.
- 3** Change the hourly rate charged for repairs back to \$50.
- 4** Use goal seek by setting cell F39 (ending cash) on the cash budget to \$50,000 by changing cell B46 (the cost of expected sales). The result should be a percent cost of sales of 59 percent (actually, 59.0142671854734 percent before rounding).
- 5** Close the workbook without saving changes.

“Now, that is a powerful tool.” Nathan says. “I think I can shave off a little on the percentage of cost of sales by increasing my markup slightly.”

End Note

You’ve applied some of what you learned in the first five chapters to better understand how Excel can be used to create a cash budget. In doing so, you created an operating cash receipts budget based on budgeted sales and a predicted pattern of expected cash collections. You also created an operating cash payments budget based on budgeted purchases and a pattern of expected cash payments. To round out the cash budget you created a budget for investing and financing activities and pulled it all together with Excel’s grouping feature to create a complete annual cash budget. In addition, you applied the what-if analysis and goal seek features of Excel to answer common questions posed when analyzing budgets. Finally, you used names extensively to better understand formulas and calculations in Excel. In the next chapter, you’ll explore some additional ways in which Excel is used in accounting.

Chapter 6 Questions

- 1 Why should you locate budget assumptions in a special section of the worksheet?
- 2 What information is provided in the operating cash receipts portion of the cash budget?
- 3 Why does the typical cash budget spread collection of sales revenue over more than one month?
- 4 What information is provided in the operating cash payments portion of the cash budget?
- 5 What factors determine monthly purchases in the cash budget?
- 6 Why does the typical cash budget spread payment of purchases over more than one month?
- 7 What information is provided in the investing activities portion of the cash budget?
- 8 What information is provided in the financing activities portion of the cash budget?
- 9 How is the goal seeking feature used in this chapter?
- 10 How is grouping used with the cash budget?

Chapter 6 Assignments

- 1 Create a new What SUP Operating Cash Receipts Budget

Using the ch6-02 file to start your work, create a worksheet similar to the one created in this chapter to budget operating cash receipts by month for 3 months. Place assumption information in the cells provided, and define and use names extensively. The company expects to incur repair hours of 600, 700, and 800 in January, February, and March (respectively) at an expected hourly rate of \$75. Product sales revenue of \$150,000, \$165,000, and \$175,000 is expected in January, February, and March, together with interest revenue of \$14,000, \$13,000, and \$17,000, respectively. Professional service revenue and interest revenue are all collected in the month earned. It is anticipated that 75 percent of product sales revenue will be collected in the same month as earned, 20 percent collected in the next month, and 5 percent in the following month. Product sales revenue last November was \$180,000 and last December was \$190,000. (*Hint:* Use these amounts in your budget to determine cash

collections in the current 3 months of January, February, and March as a function of prior product sales. Use Excel's grouping feature to group "revenues" rows together and to group the three monthly columns together. Save your file as ch6-02_student_name (replacing student_name with your name).

- a. Print the newly completed worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer.
- b. Print the worksheet from part a, above, in Formula view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only the January cash budget, no assumptions.
- c. Collapse all rows and columns and then print the worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only the total cash budget, no assumptions.
- d. Expand all rows and columns. Use what-if analysis to calculate operating cash receipts if 85 percent of product sales revenue were collected in the same month as earned, 10 percent in the next month, and 5 percent in the following month. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer.
- e. Reset the collection expectations to their original values (of 75, 20, and 5 percent). Use goal seek to determine what number of repair hours must be worked in January in order to achieve operating cash receipts of \$180,000 in January. Print the resulting cash budget, no assumptions in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer.

2 Create a new What SUP Operating Cash Payments Budget

Using the ch6-03 file to start your work, create a worksheet similar to the one created in this chapter to budget operating cash payments by month for 3 months. Place assumption information in the cells provided, and define and use names extensively. Product sales revenue of \$150,000, \$165,000, \$175,000, and \$180,000 is expected in January, February, March, and April respectively. Purchases cost 65 percent of product sales. The company would like to maintain an ending inventory equal to 60 percent of the next month's cost of sales. At the beginning of January, the company had \$75,000 in inventory and \$15,000 in accounts payable; 85 percent of a month's purchases are paid in the current month, with the remaining paid in the following month. Selling expenses are expected to be \$6,000, \$7,000, and \$8,000 in January, February, and March (respectively), while general and administrative

expenses are expected to remain constant at \$40,000 per month. All expenses are paid in the month incurred. Use Excel's grouping feature to group purchases, payments for purchases, and expense rows together and to group the three monthly columns together. Save your file as ch6-03_student_name (replacing student_name with your name).

- a. Print the newly completed worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer.
- b. Print the worksheet from part a, above, in Formula view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only the January cash budget, no assumptions.
- c. Collapse all rows and columns and then print the worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer.
- d. Expand all rows and columns. Use what-if analysis to calculate operating cash payments if 70 percent of purchases are paid in the current month and 30 percent are paid in the following month. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer.
- e. Reset the payments expectations to the original 85 percent and 15 percent values. Use goal seek to determine what cost of expected sales percentage would cause the operating cash payments to be \$500,000 for the quarter. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer.

Chapter 6 Case Problem 1:

KELLY'S BOUTIQUE

Kelly's Boutique is contemplating several means of financing their acquisition of \$200,000 in special equipment. One alternative is to borrow \$200,000 from a local bank for 10 years at 12 percent per annum. The bank has asked them to produce a 1-year cash budget broken down by months (January through December). Sales of \$40,000 are expected in the first month, with each month thereafter increasing 2 percent. Purchases are based on an expected cost of sales of 55 percent and a required ending inventory of 70 percent of next month's cost of sales. Beginning inventory was \$11,000. Sales for January next year are expected to be \$50,000. Sales in the previous November and December were \$29,000 and \$28,000, respectively. Expenses include advertising expense of \$900, depreciation expense of \$800, interest expense of \$1,000, payroll expense of \$8,000, supplies expense of \$500, and utilities expense of \$600 per month throughout the year. All expenses except depreciation are paid in the month during which they are incurred. Collections in the month of sale are expected to

be 60 percent, collections in the first month following a sale 30 percent, and in the second month 10 percent. Payments in the month of purchase are expected to be 75 percent, payments in the first month following a purchase 15 percent, and payments in the second month to be 10 percent. Purchases in the previous November and December were \$16,000 and \$17,000, respectively. Proceeds from the \$200,000 loan are expected in June, and \$200,000 of equipment will be purchased in July. Monthly payments of \$1,400 on the loan also begin in July. The beginning cash balance in January was \$15,000.

Using the ch6-04 file to start your work, create a cash budget (as you did in the chapter) that is based on the assumptions listed in the previous paragraph. Use Excel's grouping feature to group operating cash receipts, operating cash payment, cash from (to) operating activities, cash from (to) investing activities, and cash from (to) financing activities and also to group the twelve monthly columns together. Save your file as ch6-04_student_name (replacing student_name with your name).

- a. Print the newly completed worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer.
- b. Print the worksheet from part a, above, in Formula view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only columns A and B of the cash budget, no assumptions.
- c. Collapse rows to level 2 and columns to level 1, and then print the worksheet in Value view with your name and date printed in the lower left footer and the file name in the lower right footer. Print cash budget only, no assumptions.
- d. Expand rows to level 3 and columns to level 2, and then use what-if analysis to calculate end-of-year cash if the sales growth each month were 4 percent and payroll expense were \$18,000 per month. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print cash budget only, no assumptions.
- e. Undo the what-if analysis performed in part d. Use goal seek to determine what sales growth would be needed to produce an ending cash balance of \$150,000. Print the resulting worksheet in Value view with your name and date printed in the lower left footer and the file name in the lower right footer. Print cash budget and assumptions.

Chapter 6 Case Problem 2:

WINE DEPOT

The Wine Depot is contemplating several alternative means of financing their annual acquisition of \$70,000 in equipment. One option is to borrow \$300,000 from a local bank for 5 years at 11 percent per annum. The bank has asked them to produce a 4-year cash budget broken down by year (2015 through

2018). Sales of \$750,000 are expected in 2015, with sales increasing each year thereafter by 15 percent. Sales in 2014 were \$600,000. Purchases are based on an expected cost of sales of 45 percent and a required ending inventory of 10 percent of next year's sales. Purchases in 2014 were \$200,000, and beginning inventory was \$32,000. Annual expenses include advertising expense of \$10,000, marketing expense of \$6,000, depreciation expense of \$8,000, interest expense of \$35,000, salaries expense of \$250,000, wages expense of \$65,000, supplies expense of \$7,500, and utilities expense of \$10,000. All expenses except depreciation are paid in the year in which they are incurred and are expected to increase 5 percent each year. Collections in the year of sale are expected to be 92 percent, with the remaining 8 percent collected in the next year. Payments in the year of purchase are expected to be 93 percent, with the remaining 7 percent paid in the next year. Proceeds from the \$300,000 loan are expected in 2015, and \$70,000 of facilities will be purchased each year. Proceeds from expected equipment sales each year are expected to amount to \$10,000. Annual payments of \$81,171 on the loan also begin in 2015. The beginning cash balance in 2015 was \$20,000.

Using the ch6-05 file to start your work, create a cash budget (as you did in the chapter) based on the assumptions just provided. Use Excel's grouping feature to group operating cash receipts, operating cash payment, cash from (to) operating activities, cash from (to) investing activities, and cash from (to) financing activities. Save your file as ch6-05_student_name (replacing student_name with your name).

- a. Print the newly completed worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer.
- b. Print the worksheet from part a, above, in Formula view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only columns A, B, and C of the cash budget, no assumptions.
- c. Collapse rows to level 2; then print the worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print cash budget only, no assumptions.
- d. Collapse rows to level 2, and then use what-if analysis to calculate end-of-year cash if the sales growth each year were 10 percent. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print cash budget only, no assumptions.
- e. Undo the what-if analysis performed in part d. Collapse rows to level 2, and then use goal seek to determine what annual sales growth would be needed to produce an ending cash balance of \$100,000 in 2018. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print cash budget and assumptions.

Chapter 6 Case Problem 3:

SNICK'S BOARD SHOP

Snick's Board Shop is contemplating several alternative means of financing their acquisition of \$350,000 in new equipment in year 1. One option is to borrow \$300,000 from a local bank. The bank has asked them to produce a 3-year cash budget broken down by year (Year 1, 2, and 3). Sales in the prior year were \$240,000 and are expected to increase 10 percent each year. Purchases are based on an expected cost of sales of 40 percent and a required ending inventory of 25 percent of next year's sales. Prior year expenses included advertising expense of \$2,500, depreciation expense of \$1,000, wages expense of \$56,000, supplies expense of \$450, and utilities expense of \$1,600. All expenses except depreciation are paid in the year in which they are incurred and are expected to increase 8 percent each year. Interest expense is expected to remain constant at \$15,000 each year for years 1–3. Collections in the year of sale are expected to be 90 percent, with the remaining 10 percent collected in the next year. Payments in the year of purchase are expected to be 85 percent, with the remaining 15 percent paid in the next year. Proceeds from the \$300,000 loan are expected in year 1, and \$350,000 of equipment will be purchased during year 1. In subsequent years equipment purchases are expected to be \$1,000 each year. Proceeds from projected equipment sales each year are expected to amount to \$200. Annual payments of \$110,000 on the loan also begin in year 1.

Using the ch6-06 file to start your work, create a cash budget (as you did in the chapter) based on the assumptions just provided. Use Excel's grouping feature to group operating cash receipts, operating cash payment, cash from (to) operating activities, cash from (to) investing activities, and cash from (to) financing activities. Define names as appropriate.

Save your file as ch6-06_student_name (replacing student_name with your name).

- a. Print the newly completed worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only columns A through E of the cash budget, no assumptions.
- b. Print the worksheet from part a, above, in Formula view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only columns A through D of the cash budget, no assumptions.
- c. Collapse rows to level 2, then print the worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only columns A through E of the cash budget, no assumptions.
- d. Collapse rows to level 2, and then use what-if analysis to calculate end-of-year cash if the sales growth each year were 25 percent. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right

- footer. Print only columns A through E of the cash budget, no assumptions.
- e. Undo the what-if analysis performed in part d. Collapse rows to level 2, and then use goal seek to determine what annual sales growth would be needed to produce an ending cash balance of \$0 in year 3. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only columns A through E of the cash budget, no assumptions.

Chapter 6 Case Problem 4:

ROSEY'S ROSES

Rosey's Roses is contemplating several alternative means of financing their acquisition of \$100,000 in new equipment in year 1. One option is to borrow \$80,000 from a local bank. The bank has asked them to produce a 3-year cash budget broken down by year (Year 1, 2, and 3). Sales of \$150,000 were earned in the prior year and are expected to increase each year thereafter by 15 percent. Purchases are based on an expected cost of sales of 60 percent and a required ending inventory of 20 percent of next year's sales. Prior year expenses included advertising expense of \$15,000, depreciation expense of \$1,000, wages expense of \$20,000, supplies expense of \$1,000, and utilities expense of \$3,300. All expenses except depreciation and interest expense are paid in the year in which they are incurred and are expected to increase 10 percent each year. Interest expense is paid in the year incurred and is expected to remain constant at \$4,000 each year for years 1–3. Collections in the year of sale are expected to be 85 percent, with the remaining 15 percent collected in the next year. Payments in the year of purchase are expected to be 90 percent, with the remaining 10 percent paid in the next year. Proceeds from the \$80,000 loan are expected at the beginning of year 1, and \$100,000 of equipment will be purchased during year 1. In subsequent years, equipment purchases are expected to be \$2,000 each year. Proceeds from projected equipment sales each year are expected to amount to \$500. Annual payments of \$10,360 on the loan occur at the end of each year.

Using the ch6-07 file to start your work, create a cash budget (as you did in the chapter) based on the assumptions just provided. Use Excel's grouping feature to group operating cash receipts, operating cash payment, cash from (to) operating activities, cash from (to) investing activities, and cash from (to) financing activities. Define names as appropriate.

Save your file as ch6-07_student_name (replacing student_name with your name).

- a. Print the newly completed worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only columns A through E of the cash budget, no assumptions.
- b. Collapse rows to level 2, and then print the worksheet in Value view, with your name and date printed in the lower left footer and the file

- name in the lower right footer. Print only columns A through E of the cash budget, no assumptions.
- c. Collapse rows to level 2, and then use what-if analysis to calculate end-of-year cash if the sales growth each year were 0 percent. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only columns A through E of the cash budget, no assumptions.
 - d. Undo the what-if analysis performed in part c. Collapse rows to level 2, and then use goal seek to determine what annual sales growth would be needed to produce an ending cash balance of \$50,000 in year 3. Print the resulting worksheet in Value view, with your name and date printed in the lower left footer and the file name in the lower right footer. Print only columns A through E of the cash budget, no assumptions.