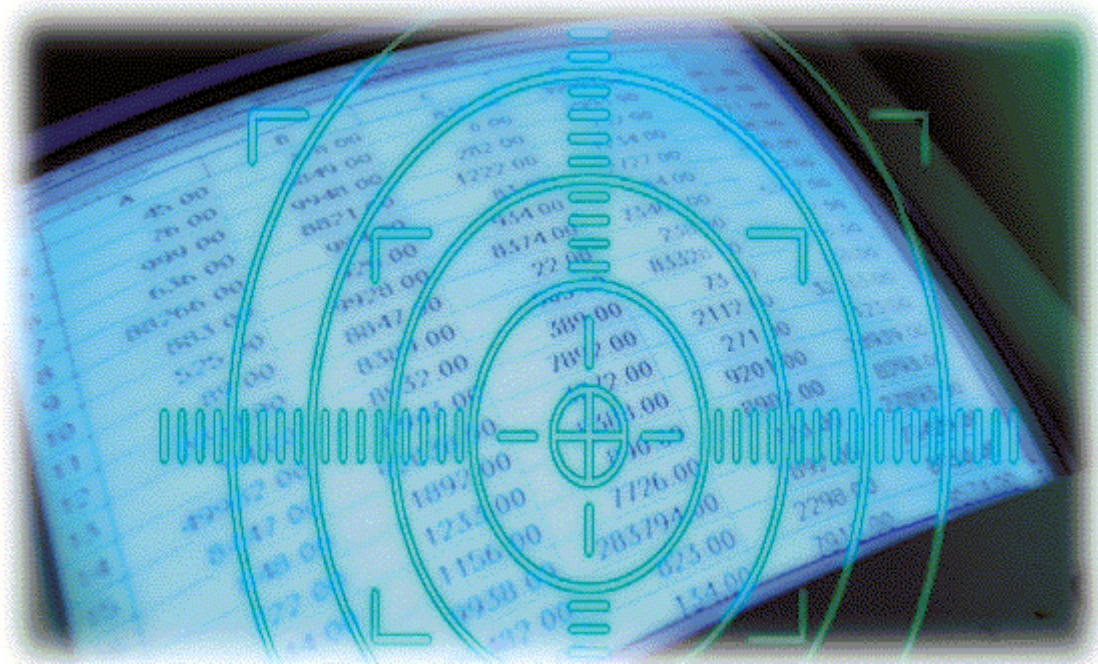


Tutorial

Oros© ABC/M and Oros© Scorecard

Software for Activity-Based Costing Applications

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Oros[®] ABC/M and Oros[®] Scorecard Tutorial

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Introduction

This tutorial is intended to familiarize you with costing and scorecarding using Oros Modeler or Oros Quick.

This introduction addresses:

- Scope of this tutorial
- Before beginning this tutorial
- Tutorial conventions
- Comparison of Oros Modeler and Oros Quick
- Online Help
- Technical Support
- Additional training and tutorials

Scope of this tutorial

This tutorial presents, through a series of hands-on practical exercises, the basic tools and tasks needed to:

- Implement an activity-based costing (ABC) model of your company
- Provide a performance management framework that aligns, measures, and communicates organizational goals and strategies using a scorecard

Before beginning this tutorial, read the Release Notes. The Release Notes contain any last-minute changes or additions to the application. You will find the Release Notes in the Start menu.

To complete the model-building process, move through this tutorial from beginning to end — exactly as it is presented.

If you are new to activity-based costing

If you are new to activity-based costing, you may benefit more from this tutorial by first learning more about activity-based costing. A number of books, articles, and videotapes present excellent overviews of this methodology. Even without this background, you will learn some basic activity-based costing concepts by completing this tutorial.

If you are experienced with activity-based costing

Even though you may know activity-based costing, work through this tutorial to become familiar with Oros Modeler or Oros Quick — the concepts, commands, and dialog boxes.

Before beginning this tutorial

Before you begin this tutorial, you should be familiar with basic Windows operating system techniques such as:

- ❑ Starting and quitting applications
- ❑ Selecting commands from drop-down menus
- ❑ Working with windows (opening, closing, scrolling, moving, minimizing, and selecting)
- ❑ Creating directories or folders
- ❑ Terms such as drop-down menu, window, dialog box, list box, and text box

Tutorial conventions

This section discusses the conventions used throughout this tutorial.

Fonts

This Font	Represents	Example
Typewriter	Files, folders, and path names	Open the model named <code>Tyler.mdl</code> .
Bold	Menu > Command	Select File > Save Model As .
	User Input	Type Tyler Electronics .
	User interface elements such as menus, dialog boxes, buttons, or list items	Select Calculate Specific Modules .

Procedures

A procedure is a task, or “lab exercise,” that includes a set of numbered step-by-step instructions. Some steps are followed by a comment or an explanation. A section with the following format convention indicates a procedure:

➤ **Begin this tutorial**

1. Perform step one.

Explanatory comments and illustrations, explaining and displaying results of proper completion of preceding steps, are included between steps when necessary.

2. Perform step two.

Notes

A note indicates additional information that is relevant to the procedure you are performing. This is the convention for indicated a note:

Note: Text set off in this manner presents important information.

Illustrations

Depending upon your display settings, and the number of times you perform a step or procedure, the application windows may differ slightly from the illustrations presented in this tutorial. If you enter, then delete, then re-enter accounts, cost elements, or objectives, the ReferenceNumber may differ from the illustration. The displayed order of accounts or objectives may differ if you close and reopen the model. Consider the illustrations to be a guide.

Screen illustrations will usually show only the pertinent portions of the screen being discussed.

Comparison of Oros Modeler and Oros Quick

Oros Quick is a demo version of Oros Modeler. The following table lists some of the differences between Oros Modeler and Oros Quick.

Oros Modeler	Oros Quick
Program group name is Oros	Program group name is Oros Quick
Model files use the extension AML. For example, TYLER.AML	Model files use the extension MDL. For example, TYLER.MDL
Allows multiple users	Allows only a single user
Provides an Administrator application for issuing logins and rights	No Administrator application provided because the application is single user
Includes an auto-save option	Does not include an auto-save option
No limit to the number of accounts that can be added in the Resource, Activity, and Cost Object modules	Limited to 24 accounts within the Resource, Activity, and Cost Object models. More than 24 accounts can be created but then the model cannot be saved
No limit to the number of objectives that can be added in the Scorecard module	Limited to 6 objectives in the Scorecard module. More objectives can be created but then the model cannot be saved

Online Help

The Online Help is a comprehensive information system with full text search capabilities containing a wealth of knowledge about the application. It includes:

- Detailed step-by-step instructions to complete specific tasks
- Information about new features
- Reference material about other functionality

Technical support

If you encounter problems that you cannot solve by reading Online Help or the Release Notes:

- ❑ Collect as much information about the problem as you can
- ❑ Review the pertinent sections in Online Help
- ❑ Write down the steps you performed before the problem occurred
- ❑ Write down any messages that appear on the screen

When you are ready to contact ABC Technologies, send e-mail to support@abctech.com providing the information you collected.

Note: Because Oros Quick is a demo version of Oros Modeler, technical support for Oros Quick is limited to installation problems only.

Additional training and tutorials

Additional training and tutorials can be found at the ABC Technologies, Inc. corporate web site, <http://www.abctech.com>, and companion web site, <http://www.bettermanagement.com>. BetterManagement.com offers in-depth content on selected management concepts aimed at improving a company's performance. The web site is a comprehensive source for performance management information and resources including training and tutorial materials.

Topics covered include value-based management, profitability analysis, strategic enterprise management, activity-based costing/management, business intelligence, performance measurement, and the balanced scorecard.

In the next lesson

Now you are ready to get acquainted with activity-based costing.

Introducing Activity-based Costing

Activity-based costing (ABC) is a system that maintains and processes information about the activities a company performs. Using the application, you build one or more models to maintain ABC information. You can keep all the information in one model or build many models (for example, one for costing each department or each process). Every model includes a set of basic components: the resources, activities, and cost objects.

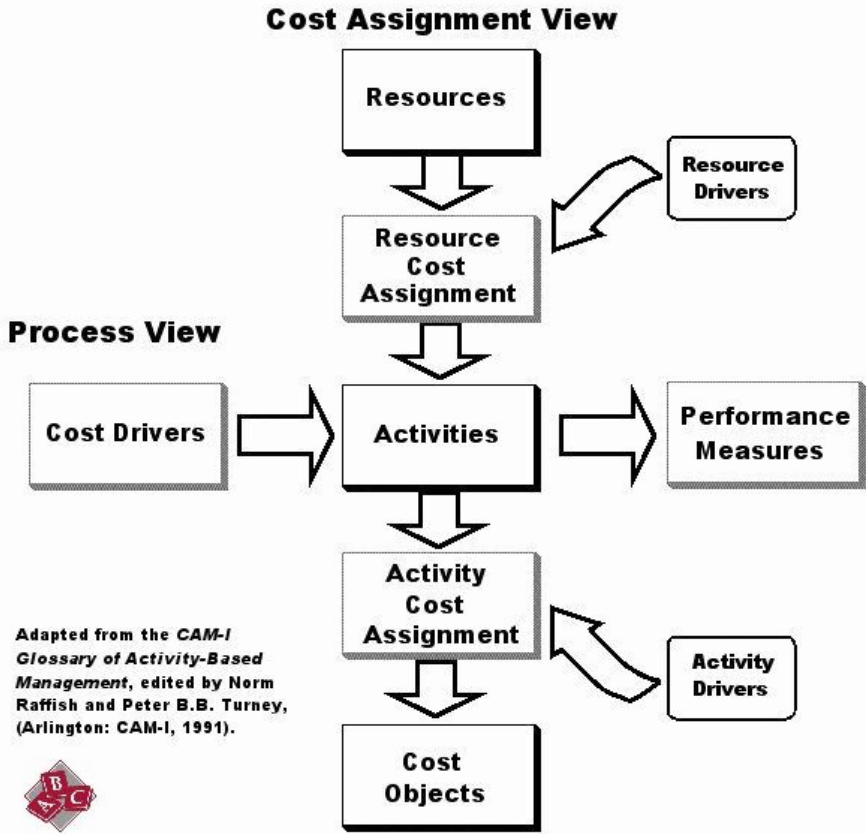
This lesson addresses:

- The ABC model and CAM-I (Consortium for Advanced Manufacturing International) standards
- Basic steps to building a model
- Collecting information
- Creating a model folder
- Installing the application
- Starting the application
- Creating the new model files
- Saving the model
- Automatically saving the model
- The main window
- Exiting the application
- Opening an existing model

The ABC model and CAM-I standards

ABC assumes that activities cause expenditure of resources and that cost objects — the results of activities or products and services produced — create the demand for activities.

The Consortium for Advanced Manufacturing International (CAM-I) develops standards to define critical business issues and to model effective strategies and solutions that resolve cost and resource management issues. Oros utilizes the CAM-I standard for activity-based model development.



The Cost Assignment View

An ABC system allows you to identify the activities performed, associate resources (expenditures) with those activities, and flow the cost of activities to cost objects. Resource Drivers (typically, general ledger entries such as payroll, utilities, or materials) drive expenditures to activities. Activity Drivers (such as the number of part numbers or the number of setups) drive activity consumption to cost objects. This includes information about costs of objects such as products, services, markets, distribution channels, engineering projects, or customers.

The Process View

An ABC system allows you to expose the relationship between why work is done and the results of that work. In ABC terms, Cost Drivers drive the reason for activities and the effort needed to engage in the activities. Performance measures drive the achieved results of activities — the efficiency, the required completion time, and the quality of the activities performed.

Basic steps to building a model

The following list of steps summarizes the process for setting up and analyzing information for an activity-based costing system. This method is described completely in the lessons and exercises that follow.

1	Collecting information Collect resource (expenditure), activity, and cost object (products and services) information to build your ABC model.
2	Building modules, centers, and accounts Create three modules to organize your resource, activity, and cost object accounts. Create relevant cost accounts and organize them into centers.
3	Building drivers Build a list of drivers that measures the consumption of expenses and activities.
4	Creating assignment paths Create the paths used to assign cost among accounts and select the driver for each source account.
5	Adding attributes and performance measures Define and add attributes and performance measures to the appropriate accounts.
6	Adding bills of cost Define and link external and internal cost units to accounts.
7	Entering data Enter resource costs, driver qualities, output measures, and other data for a specific period of time. Create a dimensional view of your model activity and cost information.
8	Calculating costs Calculate costs and display the results.
9	Developing a scorecard Measure and communicate company goals, strategies, and objectives.
10	Analyzing a scorecard Analyze and monitor your company goals, strategies, and objectives
11	Generating reports Review, validate, and analyze activity-based costs to determine company direction.

Collecting information

Activity-based costing projects begin with collecting information. Information concerning resources (expenditures), activities (tasks), and cost objects (products and services produced) provides the basis for building an ABC model. The Tyler Electronics company information is provided in this tutorial.

Tyler Electronics company

Tyler Electronics, a fictitious company looking to use activity-based information to more clearly understand costs and profitability, and wishing to use this information as a foundation for Performance Management, is used as the example throughout this tutorial.

Tyler Electronics compact disc (CD) products roll off the production line of various Tyler plants 24 hours a day. The CD manufacturing plant produces a CD changer, model XM-100, that accounts for 80% of the company's production capacity. The remaining 20% of production capacity is absorbed by a CD specialty product, model XM-500. Film and video producers use the XM-500 CD changer as part of an advanced retrieval system for sound effects. These customers can order unique options as well.

Tyler calculates production support costs using a traditional process. The traditional company accounting system collects the production support costs for all the plants into functional responsibility centers such as Production Control, Quality Assurance, and Receiving. The system allocates production support costs to all the plants. For instance, Tyler allocated \$100,000 per quarter to the CD manufacturing plant. Tyler then allocates production support costs to production based on direct labor dollars. In this case, the costs allocated to the products are: \$70,000 to the XM-100 product, \$30,000 to XM-500 product.

Despite the similarities in the products, the specialty CD changer, with all its options, has higher costs. The XM-500 requires more people for production support, for performing various manufacturing functions, and for updating and programming the corporate computer-based marketing and sales information system.

Tyler's CD plant production manager insists that traditional cost management methods lead to inaccurate costing. The manager suspects that the XM-500 product and options actually consume more costs than reported by the current system. This is indicated by downtime on the high-priced specialty machinery, insufficient component availability, difficult and expensive testing, excess inventory, and employee overtime. The production manager contends, therefore, that Tyler Electronics is not making as much profit on the product as the traditional cost management system indicates.

Because of the trouble with this low-volume specialty product, Tyler Electronics decided to use activity-based costing methods both to verify and validate their current pricing and margins and also as a basis for strategic planning. The company hopes to improve decision-making by basing its decisions on more accurate cost information.

Are Tyler's current cost management system calculations correct? Significant product line or capacity decisions will depend on the answer.

Creating a model folder

For Tyler Electronics, you will build a model called Tyler. You need to create a folder to hold the model.

➤ Create a folder

1. Start Windows Explorer.
2. Create a folder named **TYLER** to hold the model you are about to build. For example, C:\TYLER.

Installing the application

A system administrator usually installs Oros Modeler. You can install Oros Quick.

➤ Install Oros Modeler

Oros Modeler is typically installed and maintained by a designated Oros system administrator. See your Oros system administrator to help get you started and to provide you with an Oros login name and password.

➤ Install Oros Quick

1. Unzip the downloaded Oros Quick file.
2. Run `SETUP . EXE` to start the installation.

Note: Oros Quick does not require a login name or password.

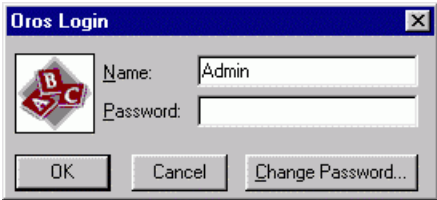
Starting the application

Oros Modeler and Oros Quick are both started from the Start menu.

➤ Start Oros Modeler

1. Select **Start > Programs > Oros [version #] > Oros Modeler**.

You see the **Oros Login** dialog box.



2. In the Name text box, replace “Admin” with your Oros login name as set up by you or your Oros system administrator.
3. Type your **Password**.
As you enter each character, an asterisk (*) appears in its place. If you do not have a password, leave this empty. Not all organizations use passwords.
You will see the product splash screen appear and disappear. When the program opens, you see an empty workspace with a menu bar and toolbar at the top, and a status bar at the bottom.
4. Click **OK**.

➤ **Start Oros Quick**


- 1. Select **Start > Programs > Oros Quick > Oros Quick**.

You will see the product splash screen appear and disappear. When the program opens, you see an empty workspace with a menu bar and toolbar at the top, and a status bar at the bottom.

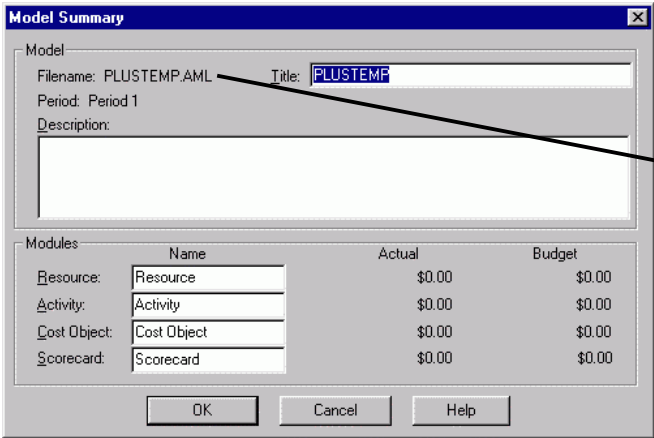
Creating the new model files

The previously created TYLER folder will contain the model files you are about to build.

➤ **Create a new model**

- 1. Select **File > New Model**, or click  on the toolbar.

You see the Model Summary dialog box with the default model Title (PLUSTEMP) highlighted.



Oros Quick uses the file extension .MDL

- 2. Replace the default **Title** with **Tyler Electronics**.

The title is not the same as the model filename. The title appears in reports that you create and should be long enough to clearly identify the model. The filename is assigned when the model is first saved.

- 3. To communicate the purpose of this model to other team members, or to make a record of what you have created, type the **Description**:

Assigns the production support costs to the setting up, scheduling, inspecting, and assembling activities. Assigns the activity costs to the XM-100 and XM-500 products and the power supply component.


- 4. Click **OK**.

You see a module window with Resource [Period1] [Named View – Multilevel] displayed in the title bar.

Saving a model

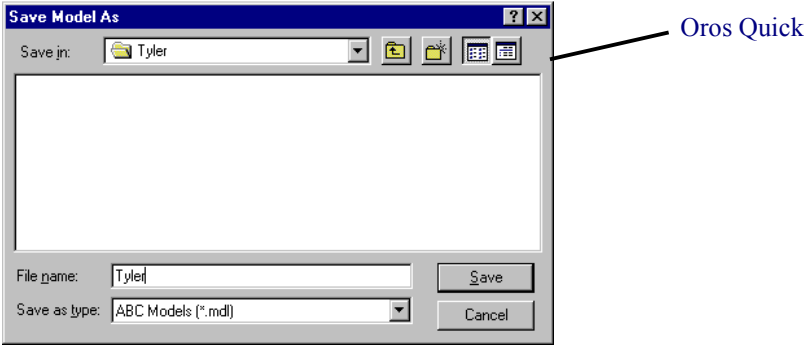
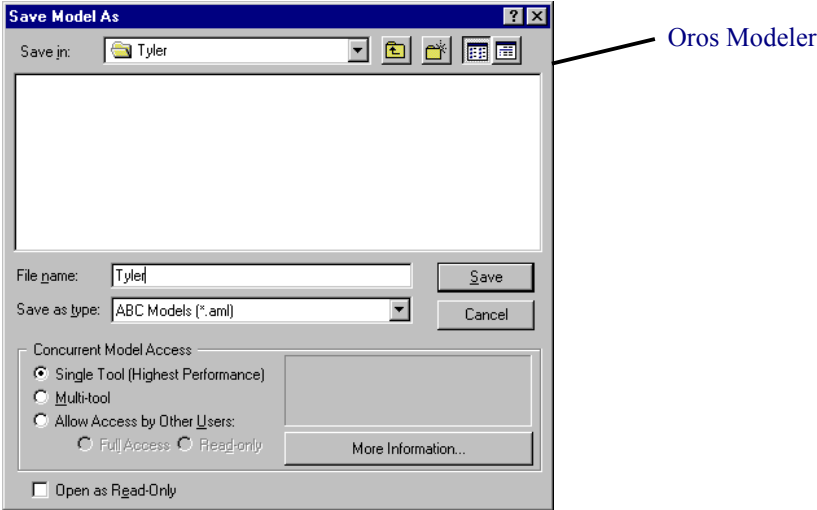
Saving a model is the same as saving files in other Windows applications. As you work, you should save your model whenever you have made changes or additions you would not want to lose.

➤ **Save a model**

1. Select **File > Save**, or click  on the toolbar.

Because you are saving the model for the first time, you see the Save Model As dialog box.

2. Navigate to the C : \Tyler folder.
3. In the **File name** text box, type **TYLER**.



- 4. Click **Save**.

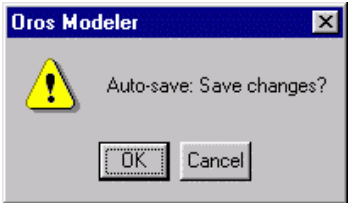
The model file (Tyler .aml or Tyler .mdl) is created. Additional support files required by the model are also created.

Note: Only one model can reside in a folder. Do not save a model in a folder that already contains a model unless you intend the new model to replace the existing model. You are asked to confirm replacement of an existing model.

Automatically saving a model

To help prevent data loss, there is an auto-save feature that saves a model automatically at a repeating, preset interval. The default interval is 10 minutes. At the end of each interval, you see a dialog box asking you to save your changes.

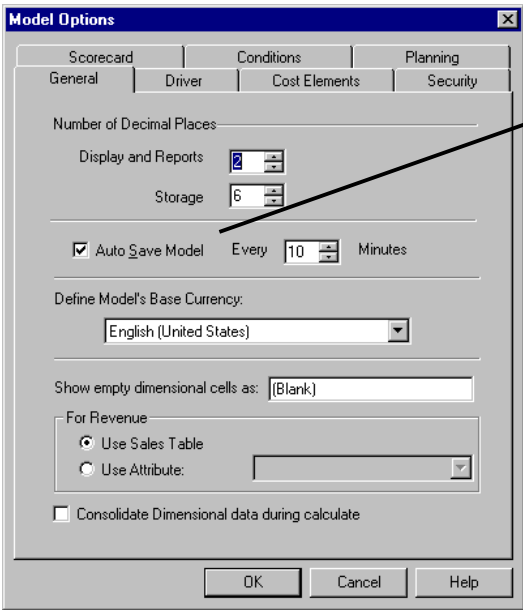
Note: Auto-save is not available in Oros Quick.



➤ Change the auto-save time interval

- 1. Select **Model > Options**.

You see the Model Options dialog box.



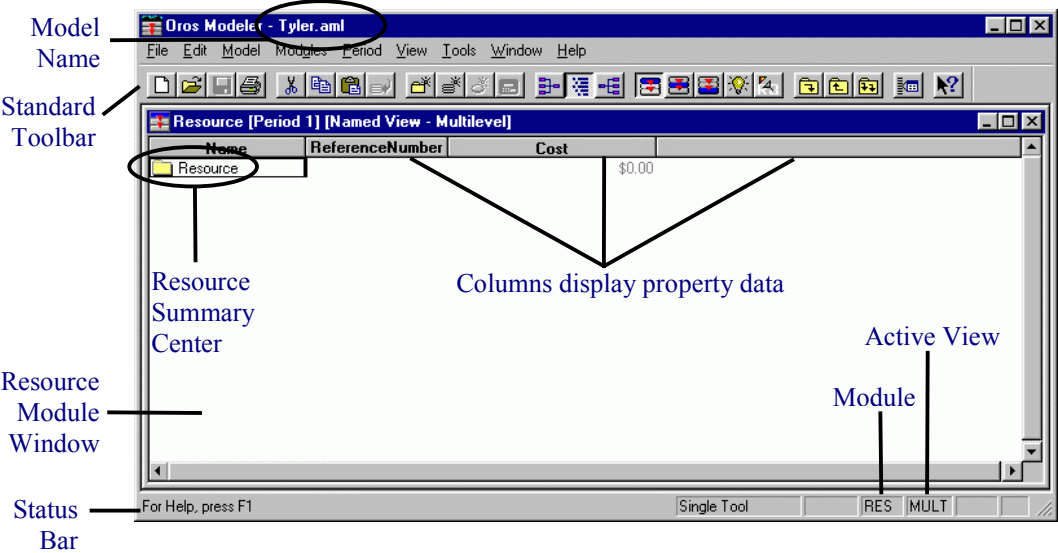
Auto-save is not available in Oros Quick

- 2. In the **Every** text box, set the number of auto-save interval minutes.
Note: You can disable the auto-save feature by clearing Auto Save Model.
- 3. Click **OK**.

The main window

The following figure illustrates the main window displaying the Resource module for the model named Tyler .aml (or Tyler .mdl for Oros Quick). There are three other similar module windows in which you will be working — the Activity module, the Cost Object module, and the Scorecard module.

Note: The model name does not appear in the title bar until you save the model.



Properties and columns

Columns in a module display properties associated with items in the model. For example, to display an account’s reference number, the property ReferenceNumber can be added as a column. By default, the model is initially set up to display the Name, Reference Number, and Cost properties of each center, account, and cost element. There are many other types of properties that you can add to your views; you will become familiar with them as you gain more experience.

Summary center

By default, each module opens with a summary center displayed. Its purpose is to roll up the costs of all accounts in the module.

Status bar

The status bar at the bottom of the window provides information about the module: the active module, the active view, and whether or not your model should be calculated to incorporate changes.

Toolbars

There are two toolbars: standard and assignment. As you pause the mouse pointer over a toolbar button, you see a tool tip describing the button function. Some buttons are available only when their function can, or should, be used. For example, when your model requires calculation, the Calculate button is available. You will learn about some of the individual buttons on the toolbar as you go through this tutorial.

Standard toolbar

This icon is not available in Oros Quick



The standard toolbar is always visible and provides shortcuts to many basic model building and maintenance functions.




Assignment toolbar



The assignment toolbar is displayed only when you create assignment paths. Assignment paths are built in Source or Destination view. The assignment toolbar allows you to insert source accounts and to show and clear assignment paths — more on this in a later lesson.

Views

There are three views that change the way that information is displayed — Multilevel, Destination, and Source.

- ❑ **Multilevel view**  — view and change the hierarchical structure in a module
- ❑ **Destination view**  — view and work with the contribution of costs to destination accounts from source accounts. The current module’s accounts are the destination accounts
- ❑ **Source view**  — view and work with the assignment of costs from module source accounts to destination accounts

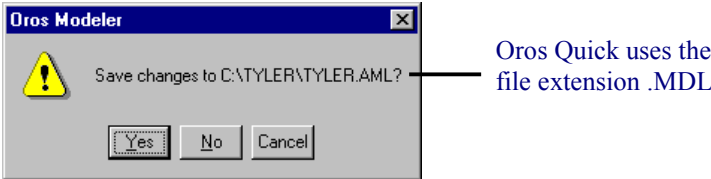
When a new model is created, Multilevel view is displayed automatically. Most often, you work in Multilevel view when you create and manipulate a module hierarchical structure. The Destination and Source views will be discussed in more detail as you proceed.

Each view has its own basic column setup. For example, the basic columns in Multilevel view are Name, ReferenceNumber, and Cost. This is also referred to as a “named view.” Other named views are Destination view and Source view. Each named view has its own default column setup. You can also create your own column setup and save it as a named view. See the Online Help for more information.

Exiting the application

- 1. Select **File > Exit**.

If you have made changes since the model was last saved, you see a dialog box asking you to save changes.



- 2. Click **Yes**.

This closes the model and exits the application

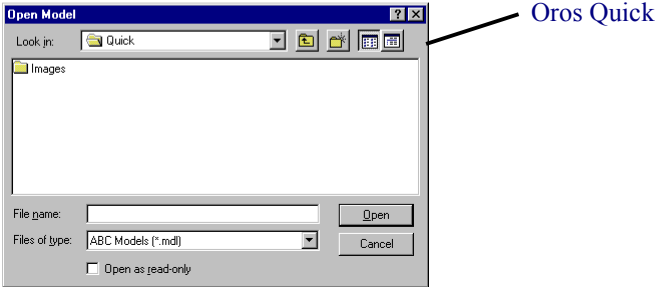
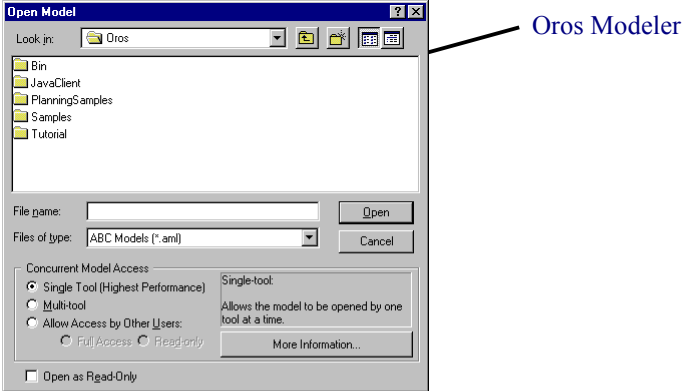
Opening an existing model

- 1. Start the application.

For directions, see “Starting the application” on page 9.

- 2. Select **File > Open Model**, or click  on the toolbar.

You see the Open Model dialog box.



3. Navigate to the TYLER folder, and open it.
4. Select the model file (Tyler .aml or Tyler .mdl).
5. Click **Open**.

You see the Tyler Electronics model open.

In the next lesson

Next, you will build the Resource, Activity, and Cost Object modules.

Building modules, centers, and accounts

Once the files have been created to contain the model data, you are ready to begin building the model.

This lesson addresses:

- Building by design
- Model structure
- Building the Resource module structure
- Creating a center
- Creating an account
- Building the Activity module structure
- Building the Cost Objects module structure
- Working with properties and columns

Building by design

Before beginning to build a model, evaluate and make preliminary decisions about the design of the model. Just as a building contractor needs a plan before beginning to build a house, a model builder needs a plan for the structure of a model before beginning to build.

Factors that influence a model's design include the:

- Purpose of the model — the operational or strategic questions the activity-based cost program is intended to answer
- Types of reports that will be needed
- Data already collected and their format
- Data needed that are not being collected

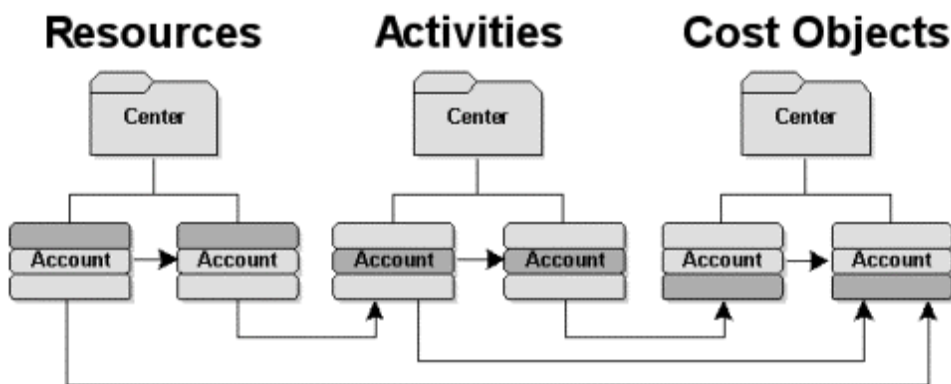
This tutorial uses a simple design and focuses on the steps for building a model. The design of the model and the effort it takes can be simple or complex. The model builder will need to understand these factors, and others that are unique to each modeling situation, to arrive at a design.

Terminology

The discipline of activity-based cost management (ABC) has a set of specialized terms. Some are used in this tutorial precisely because of their specialized meaning to the theory and practice of ABC. As these terms are introduced, this tutorial provides brief definitions; more complete definitions can be found in the *CAM-I Glossary of Activity-Based Management*. A glossary is also included in Online Help.

Model structure

Information in a model is organized by structures called modules. Modules organize model information to make it easier to manipulate and view. A basic model is built with three modules: the Resource module, the Activity module, and the Cost Object module.



In the rest of this lesson, you will work with modules to store information about resources (expenses), activities, and cost objects (products, services, or customers).

Each of the three modules is built individually but uses the same procedure. Each module has the same characteristics but contains different types of information:

- Module name
- Summary center
- Properties and columns

The fundamental objects used to track costs within modules are accounts. Accounts contain cost elements. Cost elements are actual and budgeted costs for an account. The cost of an account is, therefore, the sum of its cost elements.

Accounts can be grouped into centers. Each module has at least one center (the Module Summary center).

Note: Oros Quick is limited to a total of 24 accounts within the Resource, Activity, and Cost Object modules. More than 24 accounts can be created but then the model cannot be saved.

Resource module

The Resource module contains the expenses (or costs) for the company or department being modeled (salaries, materials, and depreciation).

Activity module

The Activity module contains activities. Activities have centers and accounts with cost elements. Costs may be assigned to activities from resource accounts or from other activity accounts.

Cost Object module

The Cost Object module contains cost objects (products, services, channels, customers). These cost objects are assigned costs from resources, activities, other cost objects, or any combination of the three.

Building the Resource module structure

Start by creating a structure to hold the resource costs in the model. Most accounts in the Resource module have at least one cost element, so it is a good idea to set the model options so cost elements are added automatically each time you add an account.

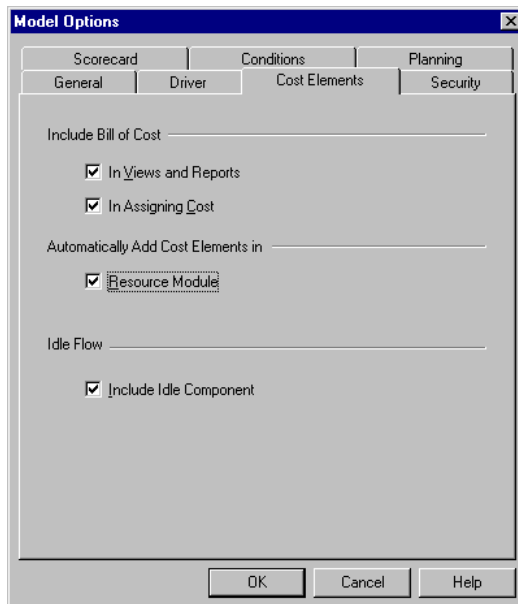
➤ Automatically add cost elements

1. Select **Model > Options**.

You see the Model Options dialog box.


2. Click the **Cost Elements** tab.
3. In the **Automatically Add Cost Elements in** section, select **Resource Module**.

With this option selected, at least one cost element will be available to receive resource account expenditures.




4. Click **OK**.

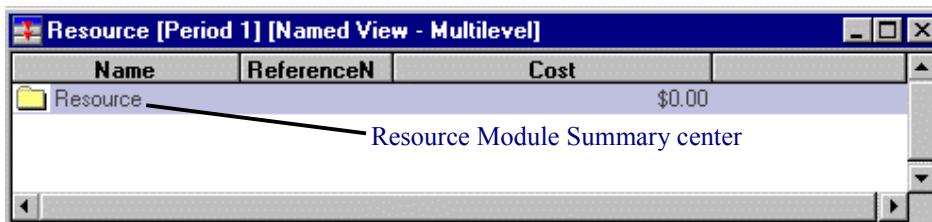
Creating a center

Centers, represented by a folder icon , allow grouping of related accounts. For each module, a summary center is created by default. This topmost center in a module is called the Module Summary center. Place any other centers and accounts within this Module Summary center so that, all costs will roll-up within it.

For this lesson, you will create a center for the Manufacturing department and create an account for Production costs in that center. The cost element is automatically added to the Production account. If you add other Manufacturing accounts, place them in the Manufacturing center.


➤ Create a center

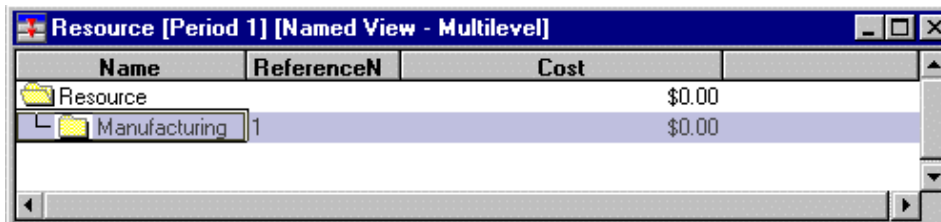
1. Select **Modules > Resource Module**, or click  on the toolbar.
2. Select the Resource Module Summary center.



Name	ReferenceN	Cost
Resource		\$0.00

Resource Module Summary center

3. Select **Edit > Create Center**, or click .
- You see a new center created with the default name Account Center1.
4. Double-click the name **Account Center1**.
5. Type **Manufacturing**.
6. Press **Enter**.



Name	ReferenceN	Cost
Resource		\$0.00
└ Manufacturing	1	\$0.00

Note: When you need to modify an item's name as completed above, you need to select only the item's name, not the icon representing the item (that action selects the entire row). If you double click the item's name, you see the item's row selected and a box surrounding the cell, indicating you can change the contents of that cell.



└ Account Center1	1	\$0.00
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Creating an account

Now you are ready to add the Production account to the Manufacturing center.


Note: Oros Quick is limited to a total of 24 accounts within the Resource, Activity, and Cost Object modules. More than 24 accounts can be created but then the model cannot be saved.


➤ Create an account



1. Select the **Manufacturing** center.


Accounts and centers are added below the selected account or center. When adding an account or center, select the account or center to which the new account or center belongs. The new account or center is added to the top of the selected account or center list. You can re-order the accounts and centers later by dragging them.


2. Select **Edit > Create Account**, or click  on the toolbar.

You see a resource account named Account1 added to the Manufacturing center. You can tell it is a resource account because the top tier of its icon  is highlighted.

A  symbol beside the Account1 resource account indicates that you can expand the account to a lower level, to view its cost elements. Remember that you enabled the application to automatically add a cost element whenever you add a new resource account.

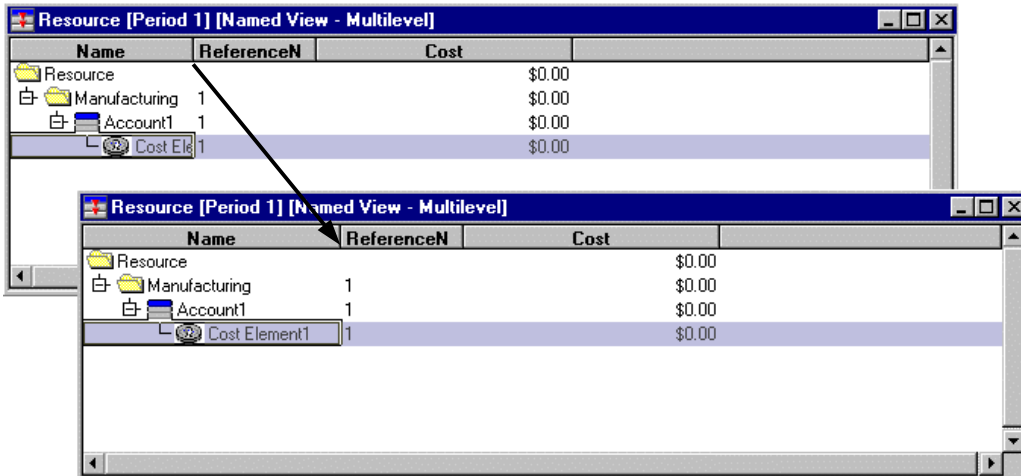
3. Click  to the left of the **Account1**, or select **Account1** and click  on the toolbar.

You see an entered cost element  that enables you to enter costs for the account. To see the entire name of the cost element, you may need to resize the Name column.

Note: You can also create a cost element by selecting an account and clicking  on the toolbar.

➤ **Resize a column**

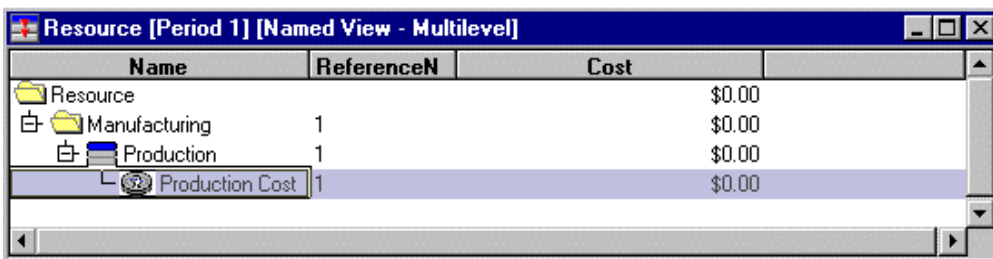
1. Move the mouse pointer over the right edge of the **Name** column heading.
2. When the pointer changes to a pair of parallel vertical lines with arrows pointing left and right, drag the column separator to the right and then release the mouse button.



Tip: You can also double-click the right column separator to resize the column

➤ **Rename an account**

1. Double-click **Account1**.
2. Type **Production**.
3. Press **Enter**.
4. Double-click **Cost Element1**.
5. Type **Production Cost**.
6. Press **Enter**.



7. Save the model.

Building the Activity module structure

An activity is a task that consumes resources. Examples of activities include setting up a machine to produce a particular part, scheduling production of a certain number of products, or inspecting a batch of parts. In a model, you can identify activities and calculate their costs.

Next, you will use the Activity module to store information about production support activities at the Tyler Electronics plant. As you recall from the discussion about creating centers, the topmost center in a module is called the Module Summary center.

Creating activities


You will open the Activity module, and then you will create four activity accounts.

➤ Open the Activity Module

1. Select **Modules > Activity Module**, or click  on the toolbar.
2. Select the Activity Module Summary center.

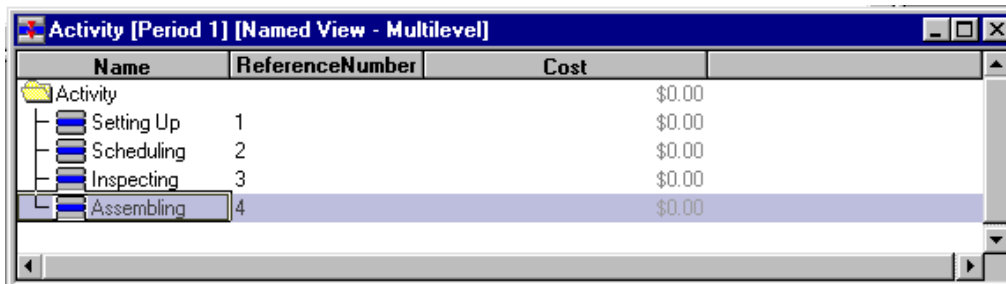
➤ Create activity accounts

1. Select **Edit > Create Account**, or click  on the toolbar.

You see a new activity account created with the default name **Activity1**. You can tell it is an activity account because the middle tier of its icon  is highlighted.

2. Double-click **Activity1**.
3. Type **Setting Up**.
4. Press **Enter**.
5. Use the procedure you just learned to create three more activity accounts named:

Scheduling
Inspecting
Assembling



Name	ReferenceNumber	Cost
Activity		\$0.00
Setting Up	1	\$0.00
Scheduling	2	\$0.00
Inspecting	3	\$0.00
Assembling	4	\$0.00

6. Save the model.

Building the Cost Object module structure

You have used one module to hold resource information and one to hold activity information. Products, customers, or services that consume activities are cost objects. The Cost Object module will hold information about the products manufactured at the Tyler Electronics CD plant: the XM-100 and the XM-500, plus the power supply that goes into both. The following diagram represents the Resource, Activity, and Cost Object modules for the Tyler Electronics model.




Usually, products are grouped into centers by categories. For this tutorial, you will simply add the products to the Cost Object Module Summary center.

Creating cost objects


Next, you will move to the Cost Object Module and add two Tyler Electronics products: the XM-100 and the XM-500 plus the Power Supply.

➤ Open the Cost Object Module

1. Select **Modules > Cost Object Module**, or click  on the toolbar.
2. Select the Cost Object Module Summary center.

➤ Create cost object accounts

1. Select **Edit > Create Account**, or click  on the toolbar.

You see a new cost object account created with the default name **Cost Object1**. You can tell it is a cost object account because the bottom tier of its icon  is highlighted.

2. Double-click the name **Cost Object1**.

3. Type **XM-100**.
4. Press **Enter**.
5. Use the procedure you just learned to add two more cost objects named:

XM-500
Power Supply


Name	ReferenceNumber	Cost
Cost Object		\$0.00
XM-100	1	\$0.00
XM-500	2	\$0.00
Power Supply	3	\$0.00

6. Save the model.

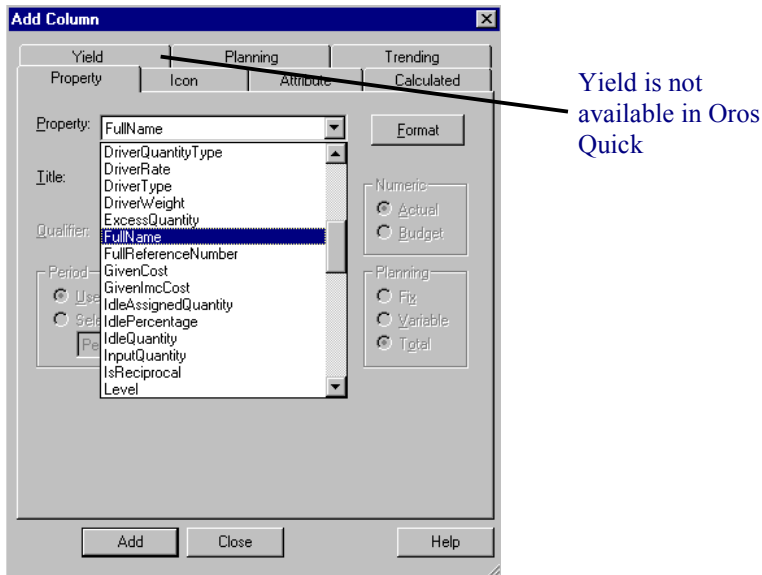
Working with properties and columns

By default, a model is set up initially to display the basic properties of each center, account, and cost element. These basic object properties are name, reference number, and cost. There are other types of properties that you can display. In the example the follows, you will add the FullName property in a column in the Resource module. This new column will display the full path of each of the items in the model.

➤ Select and display a property in a column

1. Select **Module > Resource Module** or click  on the toolbar.
2. Click the **Cost** column heading.
You see the entire column selected.
3. Select **View > Add Column**.
You see the Add Column dialog box.
4. Click the **Property** tab.

- From the **Property** drop-down list, select **FullName**.



- Click **Add**.
- Click **Close**.

You see a column named FullName added to the right of the Cost column. You may need to widen the FullName column and the module window to see the additions.

Name	ReferenceNumber	Cost	FullName
Resource		\$0.00	
<ul style="list-style-type: none"> Manufacturing <ul style="list-style-type: none"> Production <ul style="list-style-type: none"> Production Cost 	1	\$0.00	Resource\Manufacturing
		\$0.00	Resource\Manufacturing\Production
		\$0.00	Resource\Manufacturing\Production\Production Cost

Changing the properties of a column

You can change the type of property displayed in a column. In the following example, you will change the FullName column to display the Level property instead.

➤ **Change a property**

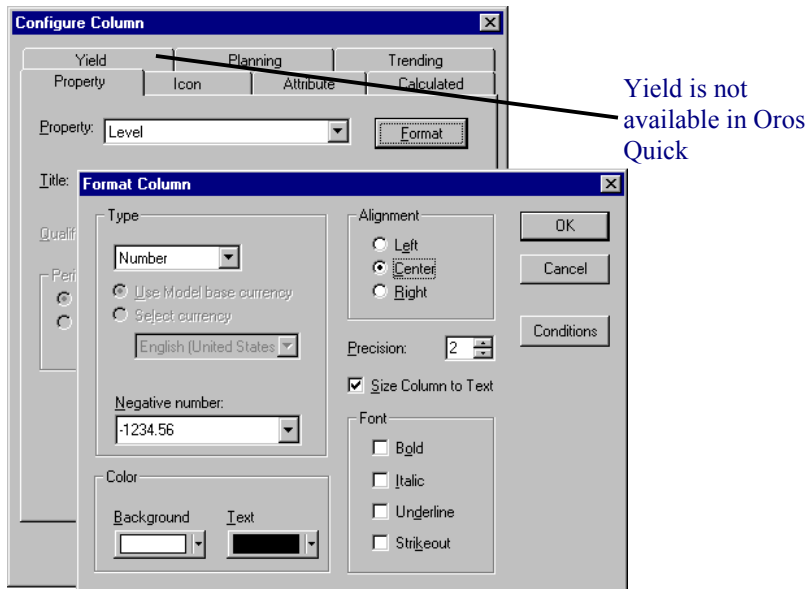
1. Double-click the **FullName** column heading.

You see the Configure Column dialog box. This dialog box looks similar to the Add Column dialog box. However, the Configure Column dialog box allows you to modify only the column selected, whereas the Add Column dialog box allows you to add several columns at one time and make modifications to the columns as they are added.

2. Click the **Property** tab.
3. From the **Property** drop-down list, select **Level**.
4. Click **Format** to center-align the text within the column.

You see the Format Column dialog box.

5. From the **Alignment** section, select **Center**.
6. Select **Size Column to Text**.



- Click **OK** until you return to the Resource module.

You see the FullName column replaced with the Level column and the level properties of each object centered in the column.

Name	ReferenceNumber	Cost	Level
Resource		\$0.00	0
Manufacturing	1	\$0.00	1
Production	1	\$0.00	2
Production Cost	1	\$0.00	

Deleting a column

Delete columns when you do not need them. Delete the Level column as an example.

➤ Delete a column

- Click the **Level** column heading.
- Select **Edit > Delete Column**, or press **Delete**.
You see the column removed.
- Save the model.

In the next lesson

After building the three basic modules, you need to add resource and activity drivers to the model. These drivers allocate resources to activities and activities to cost objects. In the next lesson, you will learn about drivers and create a list of drivers for the model.

Building drivers

An important aspect of activity-based costing (ABC) is an understanding of how activities in a company consume expenses and how products consume activities. These consumptions are managed by drivers, which measure the frequency or intensity of the cost demands placed on resources and activities. A driver specifies how costs will be assigned.

This lesson addresses:

- ❑ Types of drivers
- ❑ Building a list of drivers for the model

Types of drivers

Two types of drivers are used in this tutorial.

- ❑ Resource driver

A measure of the frequency and intensity of the demands placed on resources by activities. A resource driver assigns costs (expenditures) to activities.

- ❑ Activity driver

A measure of the frequency and intensity of the demands placed on activities by cost objects. An activity driver assigns costs to cost objects (products or services).

There are two system-defined drivers: EVENLY ASSIGNED and PERCENTAGES.

- ❑ EVENLY ASSIGNED

Assigns costs equally among the destination accounts from the source account.

- ❑ PERCENTAGES

Assigns costs among destination accounts from the source account according to a percentage you specify.

User-defined drivers can also be created.

Building a list of drivers for the model

The first step in linking resource costs to activities and activity costs to cost objects is building a list of drivers.

At Tyler Electronics, technicians set up the production line every time either the XM-100 or the XM-500 is manufactured. The frequency of performing various activities connected with setting up the production line is measured by the number of times the production line is set up. Therefore, you will define a driver named no. of setups for the Setting Up activity.

Schedulers receive orders from customers. To fill those orders for products, they:

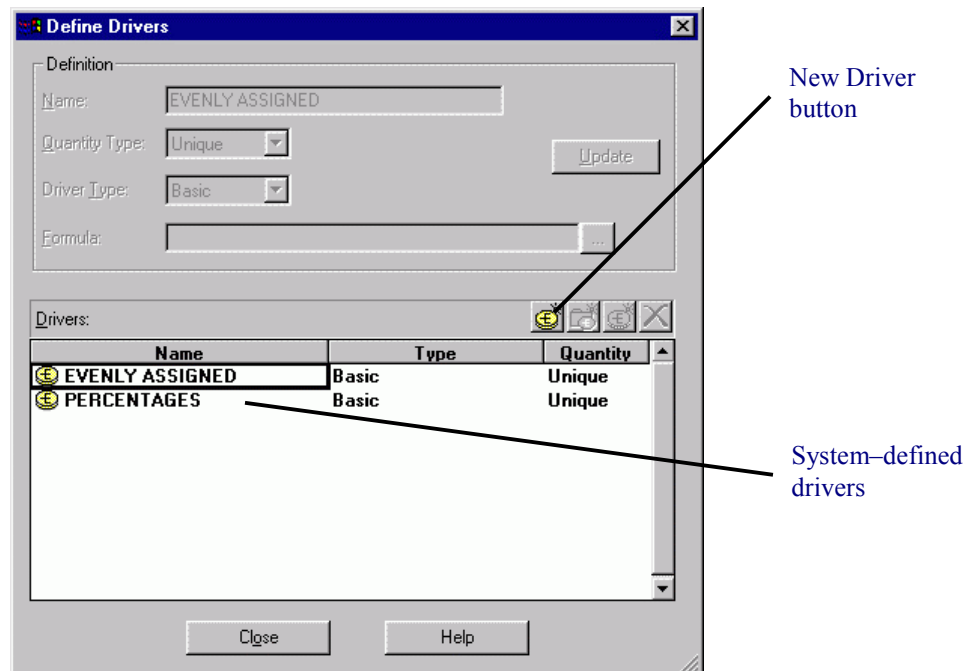
- ❑ Schedule the production capacity of the plant
- ❑ Determine how many units of each kind must be produced
- ❑ Group the products into manageable batches (lots)

Now, you will build a list of drivers for the model.

➤ Define a list of drivers

1. Select **Model > Define Drivers**.

You see the Define Drivers dialog box.



2. Click .

You see a new driver, Driver 3, displayed in the Name text box and the driver added to the Drivers list.

3. For the **Name**, type **no. of setups**.

- Verify that the default value for **Quantity Type** is **Unique**.

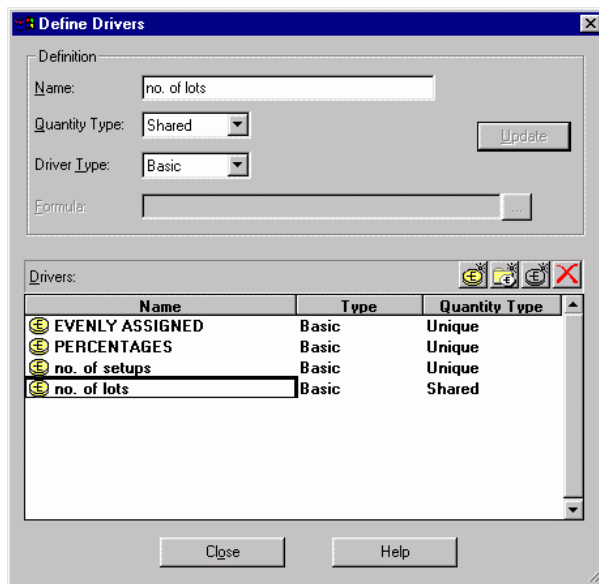
A quantity type can be unique or shared. A unique quantity type driver is assigned to one account. A shared quantity type driver can be assigned to two or more accounts that have the same driver quantity.

- Verify that the default value for **Driver Type** is **Basic**.

A basic driver presumes that destination accounts consume source account cost or activities using only one factor or variable; for example, the number of hours, units, and employees. Other driver types include calculated and weighted.

- Click **Update** to save the new driver.

- Use the procedure you just learned to define another driver named **no. of lots** with a **Quantity Type** of **Shared**.



- Click **Close**.
- Save the model.

In the next lesson

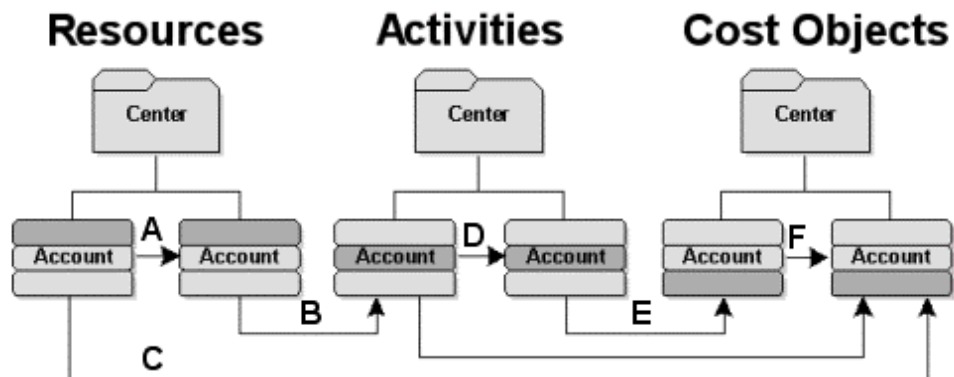
Now that drivers are built, costs can be linked from resources to activities and from activities to cost objects. In the next lesson, you will build these links by assigning costs through assignment paths.

Creating assignment paths

An assignment path links source accounts to destination accounts. Costs flow along this path from resources to activities to cost objects — from expenses to activities to products, services, or customers. A source account is the source of a cost assignment. A destination account receives the results of a cost assignment.

This lesson addresses:

- ❑ Selecting a default driver for assigning costs
- ❑ Creating assignment paths from resources to activities
- ❑ Creating assignment paths from activities to cost objects



As shown in the above diagram, the possible assignment paths, as indicated by a letter, are:

- A** — From a Resource account to another Resource account
- B** — From a Resource account to an Activity account
- C** — From a Resource account to a Cost Object account
- D** — From an Activity account to another Activity account
- E** — From an Activity account to a Cost Object account
- F** — From a Cost Object account to another Cost Object account

Selecting a default driver for assigning costs

At Tyler Electronics, the expenses (resources) will be assigned to the four activity accounts using the system-defined PERCENTAGES driver. The activity costs are then assigned to the products by the system-defined PERCENTAGES driver and the drivers you defined previously: no. of setups, no. of lots.

Before specifying the drivers for the source accounts, set a default driver. Each source account will use this default driver as its initial driver. Using the default driver option saves time when many assignments use the same driver. The driver can be changed on an account-by-account basis when necessary.

➤ Select the default driver

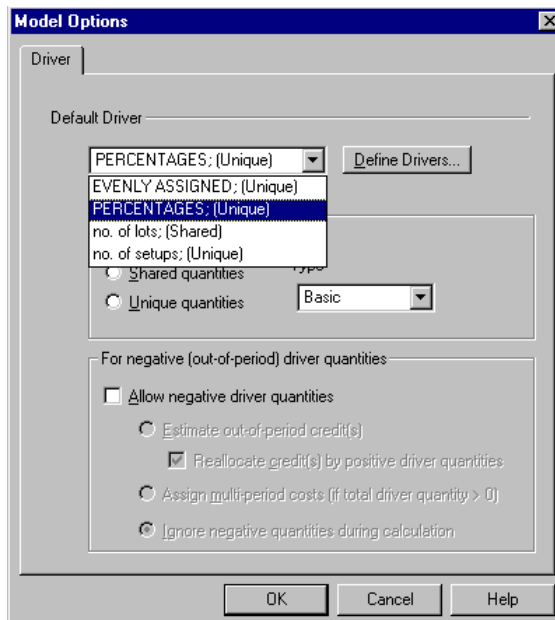
1. Select **Model > Select Default Driver**.

You see the Model Options dialog box.

The Default Driver is currently EVENLY ASSIGNED; (Unique). This means the source account costs are equally divided among destination accounts.

Because different Production support activities at Tyler Electronics consume different amounts of time (resources), the cost driver is the percentage of time Production support spends on each activity. Therefore, the PERCENTAGES driver is a better default driver.

2. From the **Default Driver** drop-down list, select **PERCENTAGES; (Unique)**.



3. Click **OK**.

In a later lesson, when data is entered into the model, you will specify the percentage of resource costs to assign to each activity account.

Creating assignment paths from resources to activities

While building the model hierarchical structure, you have been working in Multilevel view. To create assignment paths, you must change to either Destination view or Source view. In both these two-pane views, you can see source accounts, destination accounts, assignment paths, driver names, and driver quantities. Because cost is assigned through activities across modules, you will work in the Activity module. To assign resource costs to activity accounts, you will change to the Destination view. To assign costs from the activity accounts to the cost object accounts, you will change to the Source view.

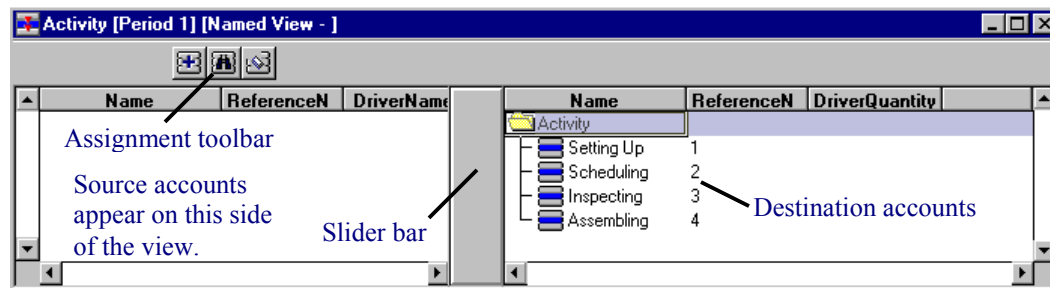
➤ Create assignment paths

1. Select **Modules > Activity Module**, or click  on the toolbar.

You see the Activity module brought to the front and made the active module.

2. Select **View > Destination View**, or click  on the toolbar.

The following illustration shows the new company of the information. Notice that the defined activity accounts are automatically shown on the right side of the window. These will become the destination accounts. You might need to widen the module window and columns to see all the information.




3. If the slider bar hides any information in the left pane, drag the slider bar to the right.

Adding resource accounts as source accounts

In the left pane of the window, you will add the Production account whose costs will be assigned to all the activities. You assign cost of accounts not cost of centers.

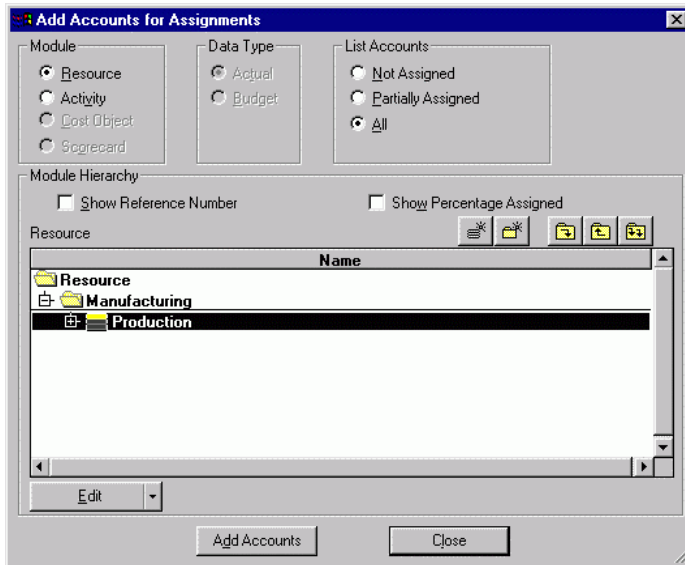
➤ Add source accounts for assignments

1. Click  on the assignment toolbar.

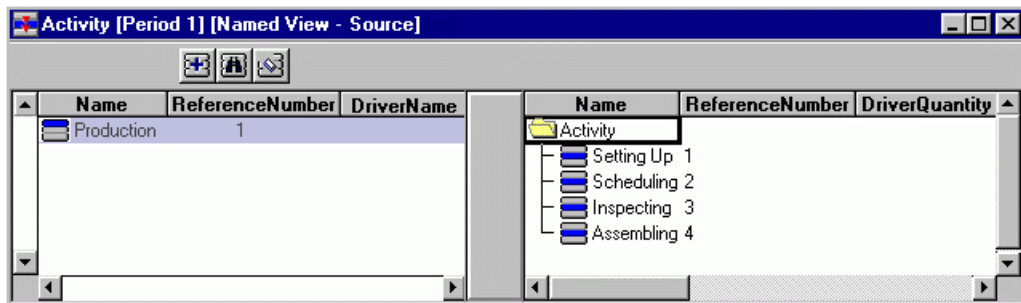
You see the Add Accounts for Assignments dialog box.




This dialog box allows you to display and select available source accounts for assignment of cost to destination accounts. Because you are in the Activity module, you see information about the Resource module centers and accounts.

2. In the **Module Hierarchy** section, double-click the **Manufacturing** center.
You see the center expand.
3. Select the **Production** account.



4. Click **Add Accounts**.
5. Click **Close**.



You see Production now listed as a source account in the Activity module. The top tier of the Production source account icon  is highlighted, indicating that it is a source account from the Resource module. Icons for source accounts from the Activity module  have the middle tier shaded; icons for source accounts from the Cost Object module  have the bottom tier shaded.

Specifying activities to receive resource costs

Next, you will create assignment paths from the Production source account to activity destination accounts.

➤ Create assignment paths

1. Select the **Production** resource account in the left pane.

You see assignment arrowheads on the slider bar.

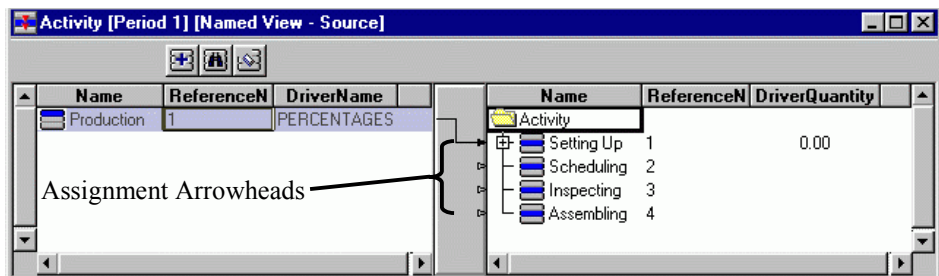
2. Place the mouse pointer over the arrowhead next to the **Setting Up** activity account.

The arrowhead turns red, indicating that an assignment to the destination account can be made.

3. Click the assignment arrowhead pointing to the **Setting Up** activity account.

You see an arrow from the Production source account to the Setting Up activity destination account.

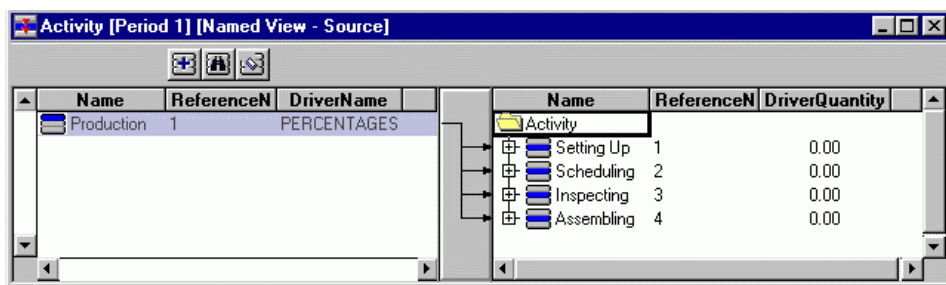
This indicates that Production costs will be assigned to the Setting Up activity.



Note: The driver name is PERCENTAGES, the default driver you set previously, although you might need to move the slider bar to see it.

4. Create assignment paths from the Production resource account to the remaining activity destination accounts:

Scheduling
Inspecting
Assembling



Creating assignment paths from activities to cost objects

Source view facilitates assigning costs from the activity accounts (source accounts) to the cost objects accounts (destination accounts).

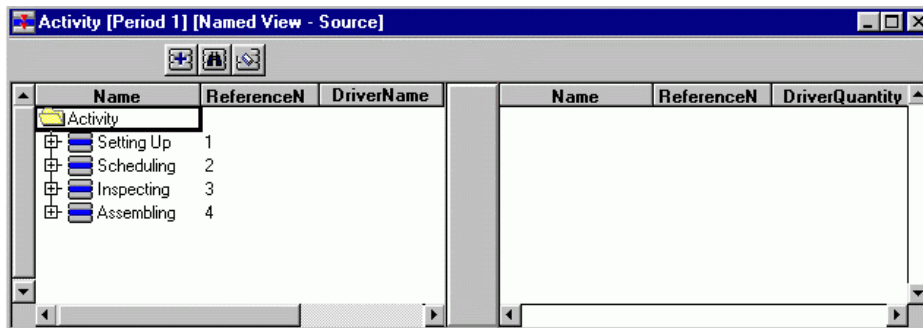
Adding cost objects as destination accounts


Adding activity accounts as source accounts uses the same procedure as adding resource accounts as source accounts. In Source view, the Activity module hierarchy appears on the left side. The activity account costs will be assigned to the products (cost objects). The right side of the view lists the cost object accounts (after they are added) that receive the activity costs.

➤ Add accounts

1. Select **View > Source View**, or click  on the toolbar.

You see the Activity accounts in the left pane.

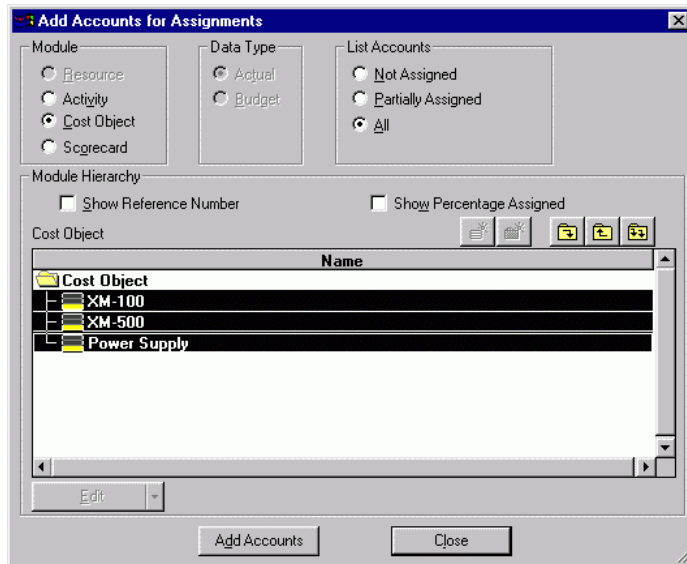


2. Click  on the assignment toolbar.

You see the Add Accounts for Assignments dialog box.

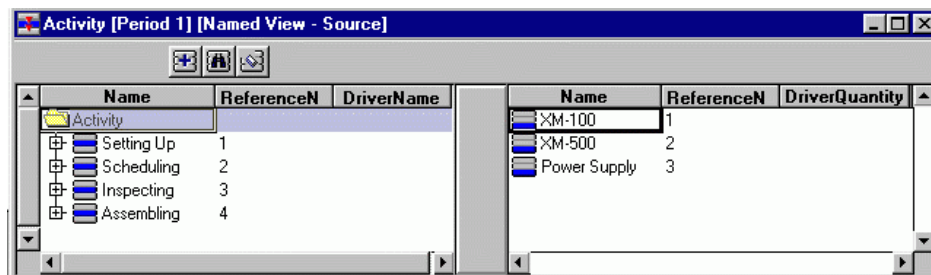
3. Drag the cursor over all the cost objects (products).

You see them selected.



4. Click **Add Accounts**.
5. Click **Close**.

You see the XM-100, XM-500, and Power Supply listed as destination accounts for the Activity module.



Specifying cost objects to receive Setting Up costs

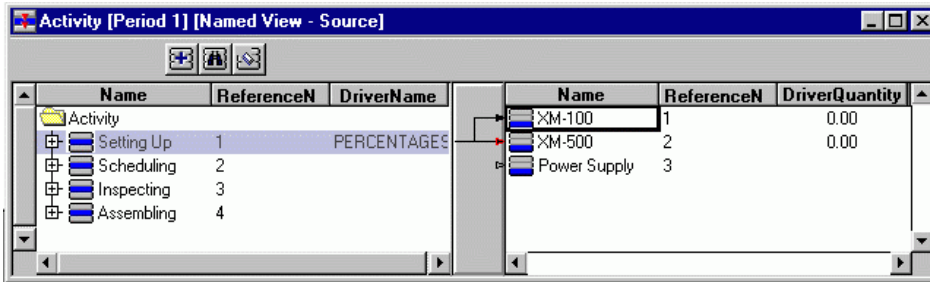
In the beginning half of assignment paths, you assigned resource accounts (as source accounts) to activity accounts (as destination accounts). To complete the final half of the cost assignment paths, the activity accounts are the source accounts and the products (cost objects) are the destination accounts.

➤ Create assignment paths

1. Select the **Setting Up** source account.

You see the assignment arrowheads on the slider bar.

- Click the assignment arrowheads pointing to the **XM-100** and the **XM-500** cost object account.
You see costs assigned from the Setting Up activity source account to both product destination accounts.
- Resize the columns and drag the slider bar to view the entire **DriverName** column.



- Save the model.

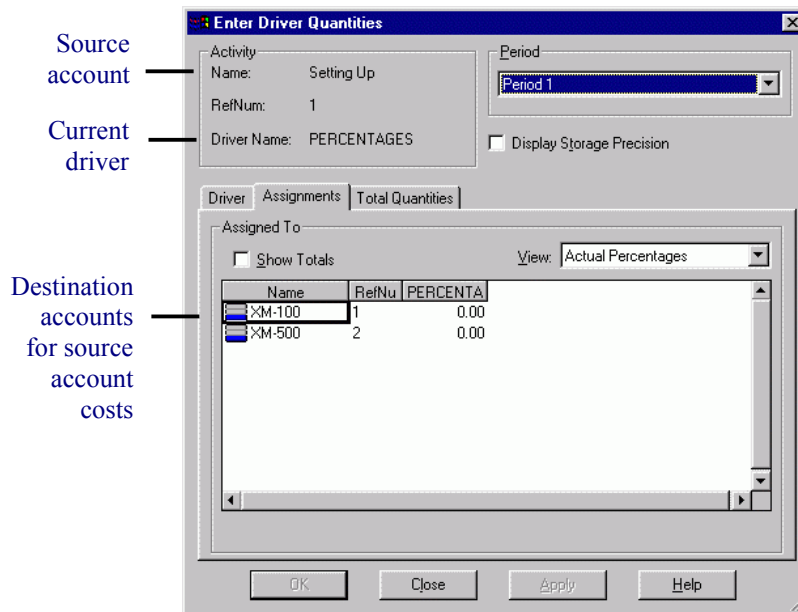
Changing the Setting Up source account driver

The default driver, PERCENTAGES, is assigned to the Setting Up activity source account. You created two new drivers in the previous lesson. The driver no. of setups was created to be the driver for the Setting Up source account. You now must change the Setting Up activity driver to that driver.

➤ Change drivers

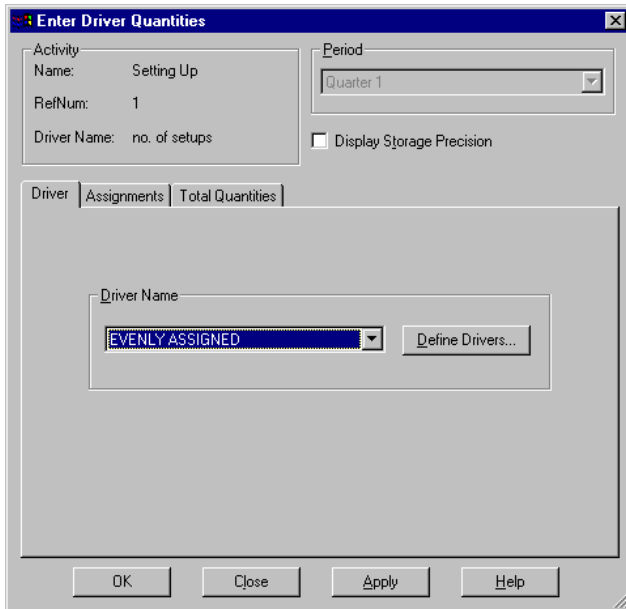
- Double-click the **Setting Up** activity icon.

You see the Enter Driver Quantities dialog box.



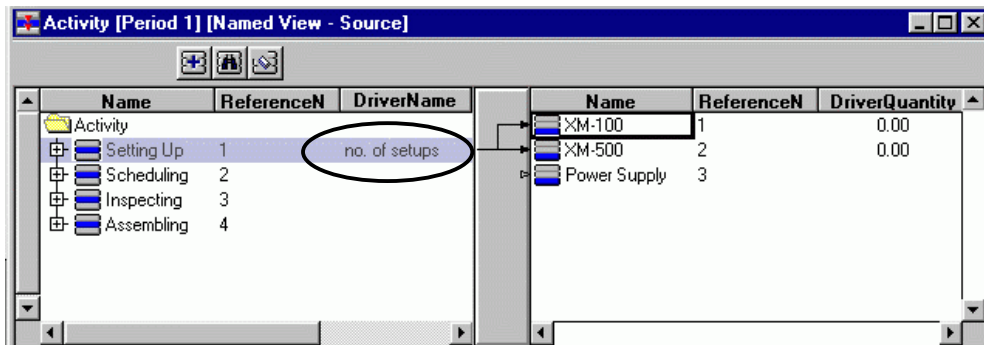
The Assignments tab lists the destination accounts to which you will assign the Setting Up activity source account cost. The destination account's current driver is PERCENTAGES.

2. Click the **Driver** tab.



3. From the **Driver Name** drop-down list, select **no. of setups**.
4. Click **OK**.

The driver for the Setting Up activity is now no. of setups.



Note: You can also select a driver by double-clicking the driver name in the window shown above.

Specifying cost object accounts to receive Scheduling costs

Complete the final half of the cost assignment paths from the Scheduling source account to two product (cost object) destination accounts: XM-100 and XM-500.

➤ Create assignment paths

1. Select the **Scheduling** activity account.
2. Click the assignment arrowheads pointing to the **XM-100** cost object account and the **XM-500** cost object account.

You see costs assigned from the Scheduling activity source account to both product destination accounts.

Changing the Scheduling source account driver

The default driver, PERCENTAGES, is assigned to the Scheduling activity source account. The no. of lots, which you created in a previous lesson, should be the driver for the Scheduling source account. You will now change the Scheduling account driver to that driver.

➤ Change drivers

1. Double-click the **Scheduling** activity account.
You see the Enter Driver Quantities dialog box.
2. Click the **Driver** tab.
3. From the **Driver Name** drop-down list, select **no. of lots**.
4. Click **OK**.

The driver for the Scheduling activity is now no. of lots.

Name	ReferenceN	DriverName
Activity		
Setting Up	1	no. of setups
Scheduling	2	no. of lots
Inspecting	3	
Assembling	4	

Name	ReferenceN	DriverQuantity
XM-100	1	0.00
XM-500	2	0.00
Power Supply	3	

Specifying cost object accounts to receive Inspecting costs

Next, you need to create assignment paths from the Inspecting source account to the cost object accounts.

➤ Create assignment paths

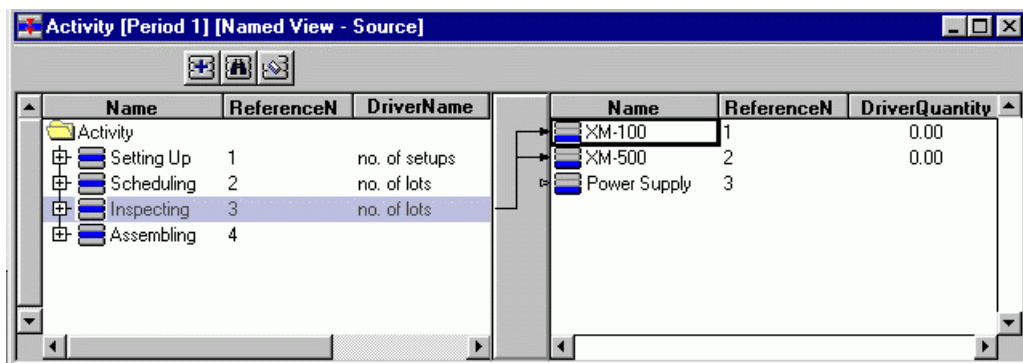
1. Use the procedures you just learned to create assignment paths from the Inspecting source account to the XM-100 and XM-500 products.
2. Save the model.

Changing the Inspecting source account driver

Now change the driver of the Inspecting activity account.

➤ Change drivers

Use the procedures you just learned to select the no. of lots driver for the Inspecting activity account.



Specifying the cost object account to receive Assembling costs

Finally, complete the final half of the Assembling cost assignment path.

➤ Create assignment paths

1. Use the procedure you just learned to create an assignment path from the Assembling activity source account to the Power Supply cost object destination account.

You see the model default driver, PERCENTAGES, assigned to the Assembling activity.

The screenshot shows a software window titled "Activity [Period 1] [Named View - Source]". It contains two main panes. The left pane is a tree view showing a hierarchy of activities: "Activity" (parent), "Setting Up" (child), "Scheduling" (child), "Inspecting" (child), and "Assembling" (child). The "Assembling" activity is selected. The right pane is a table with the following data:

Name	ReferenceN	DriverName	DriverQuantity
XM-100	1		
XM-500	2		
Power Supply	3		0.00

2. Save the model.

In the next lesson

You have now completed creating a Cost Assignment View of an ABC model.

Specifically, you have built:

- The Resource module, created the Manufacturing center that contains the Production account, and set up the Production account cost element
- The Activity module to include the activity accounts: Setting Up, Scheduling, Inspecting, and Assembling
- The Cost Object module to include the cost object accounts: XM-100, XM-500, and Power Supply
- Resource and Activity drivers: no. of lots, no. of setups
- Assignment paths to flow costs from source accounts to destination accounts

In the next lesson, you will add attributes and performance measures to your model.

Adding attributes and performance measures

An attribute is a label or identification tag attached to a center, account, or entered cost element. The attribute conveys information about the object to which it is attached.

Attributes have multiple purposes. They can be used to:

- Group ABC data to simplify report preparation and interpretation
- Attach numeric information to use in calculated drivers and calculated attributes
- Link numeric information to performance measures
- Create different dimensions of data
- Describe how well an activity is performed, what type of activity it is, and how activity cost behaves
- Report similar cost categories across cost centers
- Highlight improvement opportunities
- Classify cost components as fixed or variable, value-added or non value-added

This lesson addresses:

- Types of attributes
- Attribute centers
- Attaching attributes
- Removing attributes
- Model Periods
- Entering attribute quantities
- Performance measures
- Adding or removing performance measures

Types of attributes

There are four attributes types, which are discussed more in detail later in this lesson:

- Text
- Numeric
- Calculated
- Center

Text attributes

Text attributes describe model information. These attributes enable you to categorize, select, and subtotal information in a report. Activities may be grouped by summary-level processes — detailed manufacturing activities roll up to “manufacturing,” detailed distribution activities roll up to “distribution.” The names of these higher-level processes are defined as text attributes and are attached to their respective activities. You can then generate a report or export query that groups and totals detailed activity cost by text attribute.

Other examples of text attributes include:

- Value-added categories (high, medium, low) attached to activities
- Fixed cost/variable cost attached to resources — allows activity or cost object costs to be grouped by fixed and variable cost components
- Cost object groupings to roll up products by product family, brand, market segment, or package type or to group customers by region, channel, or salesperson
- Total Quality Management (TQM) categories — allows activities to be identified by cost of quality category such as prevention, appraisal, and internal or external repair

➤ Define a text attribute in a model

1. Select **Model > Define Attributes**.

You see the Define Attributes dialog box.

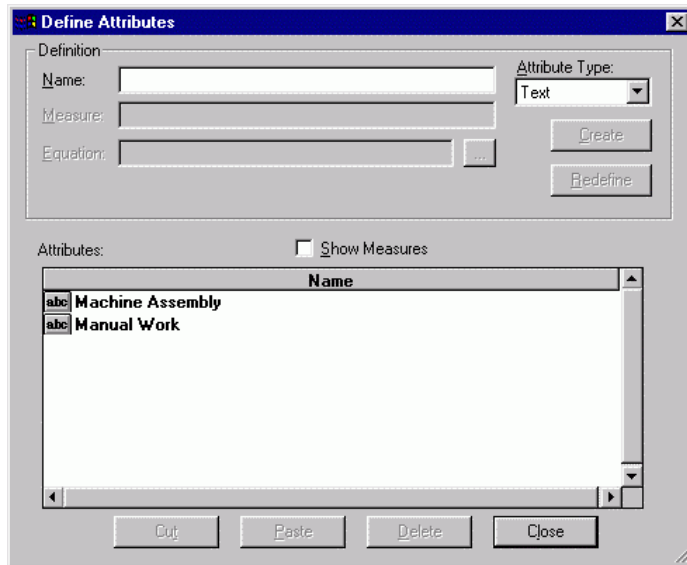
2. In the **Definition** section, for the **Name**, type **Manual Work**.

Note: The maximum length of an attribute name is 64 characters.

3. From the **Attribute Type** drop-down list, select **Text**.

4. Click **Create**.

You see that text attributes are identified by **abc** in the Attributes list.



5. Use the procedure you just learned to define a text attribute named **Machine Assembly**.
6. Click **Close**.

Numeric attributes

Numeric attributes provide an opportunity to enter data not entered or otherwise generated in a model.

Typically, numeric attributes are measures or quantities of units contributing to the total cost of an activity, such as number of cases, number of pounds, number of orders, or number of times an activity is performed.

Numeric attributes are used extensively in calculating performance measures and in an ABC scorecard. As an example, the total cost of an activity, divided by a “number of times performed” numeric attribute, provides the average cost of performing one unit of that activity — cost per order or cost per inspection.

You can establish numeric attributes as performance measures for special reporting purposes, such as tracking productivity (number of inputs or rejects, cycle time, and quality), or classifying information (level of complexity or number of sub-assemblies). Establishing a target cost-per-unit, and attaching a performance meter to the activity, provides a “scorecard” against which accomplishment of company strategies and objectives can be measured

Numeric attributes and calculated drivers

The variable data contained in numeric attributes can be used in calculated drivers to yield additional functionality and flexibility.

Consider a driver for assigning delivery costs to customers. It may be a function of both the number of trips (frequency) and the relative time per trip (intensity). It also may be a function of the type of product shipped to the customer — refrigerated or dry.

Numeric attributes for these multiple variables can be defined and attached to each customer to more effectively model the consumption of activities based on specific customer characteristics.

Note: Calculated drivers are not addressed in this tutorial.

Numeric attributes and calculated attributes

You can couple numeric attributes with calculated attributes. In fact, the same numeric attribute can be used simultaneously in both a calculated driver and a calculated attribute. For example, a numeric attribute measuring inventory returns could be used in a calculated attribute measuring return on investment (ROI) or carrying costs and also be used as a variable in a calculated driver to assign storage costs to products.

➤ Define a numeric attribute in a model

1. Select **Model > Define Attributes**.

You see the Define Attributes dialog box.


2. For the **Name**, type **Rejects**.

3. Select the **Attribute Type** of **Numeric**.

You see the Measures text box is now available.

4. For the **Measure**, type **number rejected in inspection**.

5. Click **Create**.

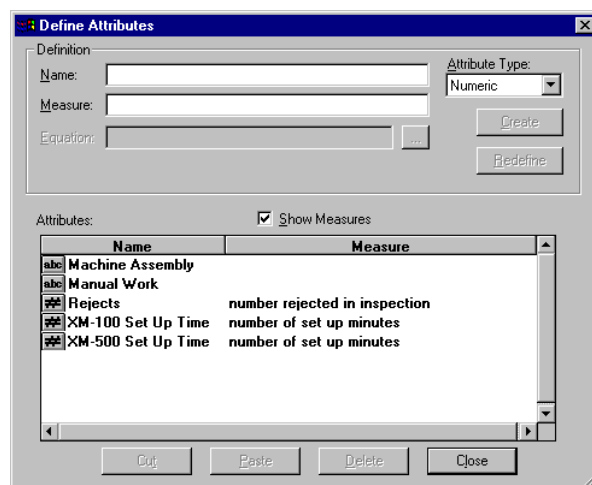
You see that numeric attributes are identified by  in the Attributes list.

6. Select **Show Measures**.

You see the measure associated with the attribute in the Attributes list.

7. Use the procedure you just learned to define two more numeric attributes with measures as follows:

Name	Measure
XM-100 Set Up Time	number of set up minutes
XM-500 Set Up Time	number of set up minutes



8. Click **Close**.

Calculated attributes

Calculated attributes are used to define numeric attributes built with mathematical formulas using basic arithmetic functions — addition, subtraction, multiplication, and division. The numeric value of this type of attribute is the calculated result of its defined formula. Any numeric properties and numeric attributes used in the equation must also be associated with, or attached to, the object (center or account).

Formulas for calculated attributes may contain any variation of the following objects:

- System-defined numeric properties, such as output quantity and cost
- User-defined numeric attributes
- User-entered numeric constants, such as 3, 1.5, and so on.


Calculated attributes consist of four attribute elements: Name, Measure, Formula, and Object.

Calculated attributes relate a minimum of two attributes and their associated costs. These attributes provide a more informative picture of an activity than the activity cost alone.

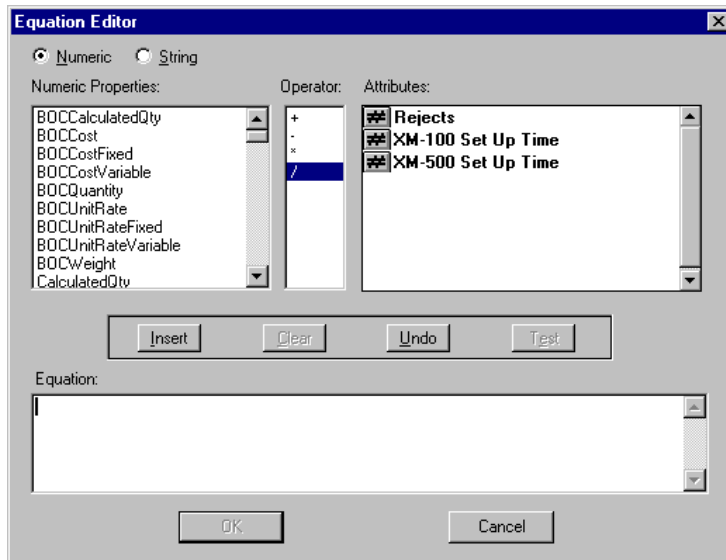
As an example, a calculated attribute relating the number of orders per full-time equivalent (FTE) using two numeric attributes (No. Orders Processed and FTEs, both of which have been assigned to the activity and contain numeric values for the activity,) conveys more information than No. of Orders by itself.

Calculated attributes cannot be used as performance measures.

➤ Define a calculated attribute in a model

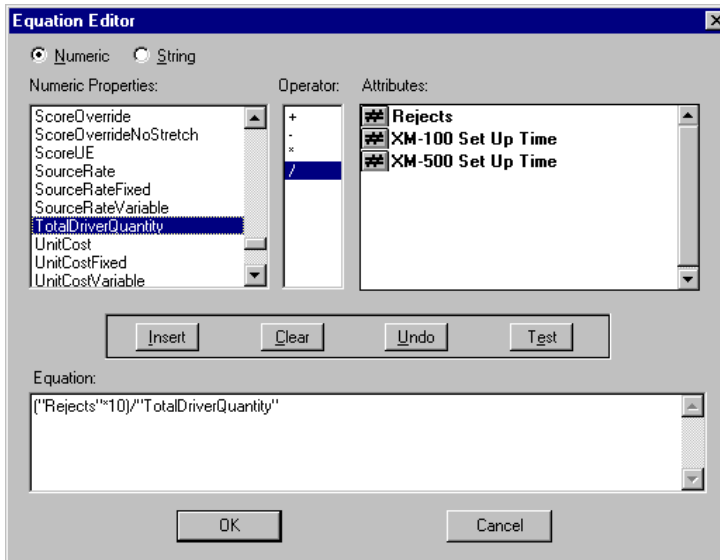
1. Select **Model > Define Attributes**.
You see the Define Attributes dialog box.
2. For the **Name**, type **Inspection Reject Rate**.
3. Select the **Attribute Type** of **Calculated**.
4. For the **Measure**, type **number of rejects per 10 lots**.
5. Click  beside **Equation**.

You see the Equation Editor dialog box.




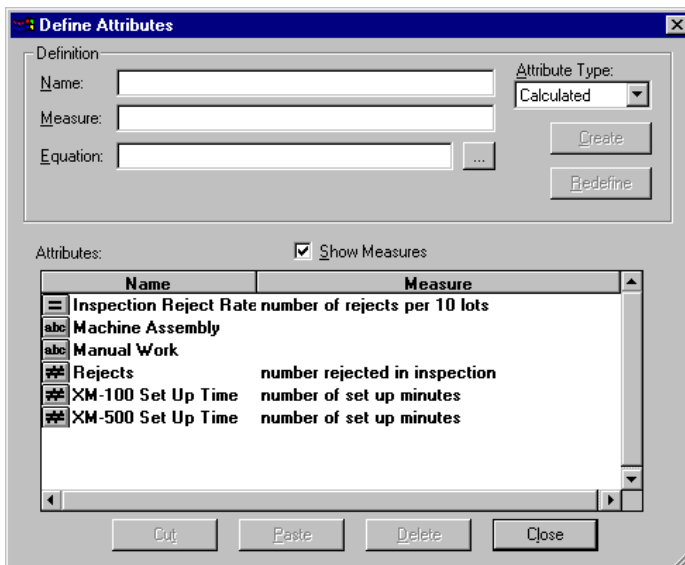
6. In the **Equation** text box, type ((an opening parenthesis).
7. From the **Attributes** list, select **Rejects**.
8. Click **Insert**.
This inserts the attribute named Rejects into the equation.
9. From the **Operator** list, insert *.
10. In the **Equation** text box, type **10)** (the number 10 followed by a closing parenthesis) immediately after *.
11. From the **Operator** list, insert /.

- From the **Numeric Properties** list, insert **TotalDriverQuantity**.



- Click **OK**.
- Click **Create**.

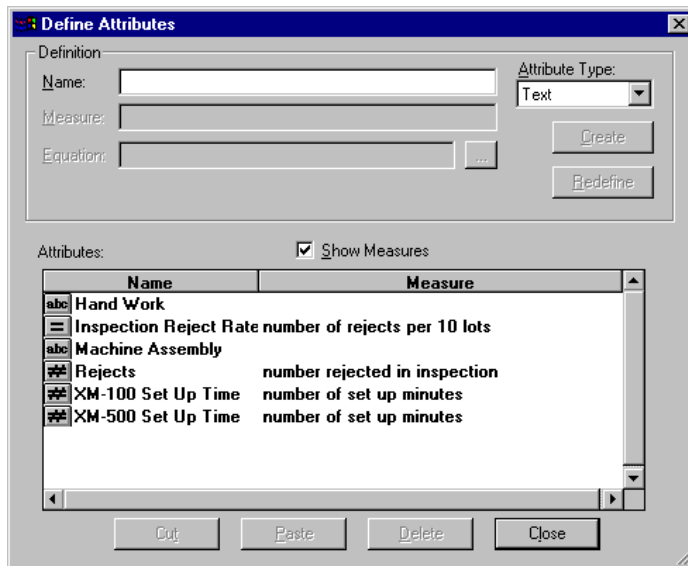
You see that calculated attributes are identified by  in the Attributes list.



➤ **Redefine an attribute in a model**

1. In the **Define Attributes** dialog box, select **Show Measures**.
2. From the **Attributes** list, select **Manual Work**.
3. Change the **Name** to **Hand Work**.
4. Click **Redefine**.

You see a message asking you to confirm that you want to redefine Manual Work as Hand Work.



5. Click **OK**.

Attribute centers



Attribute centers group individual text, numeric, and calculated attributes and other attribute centers.

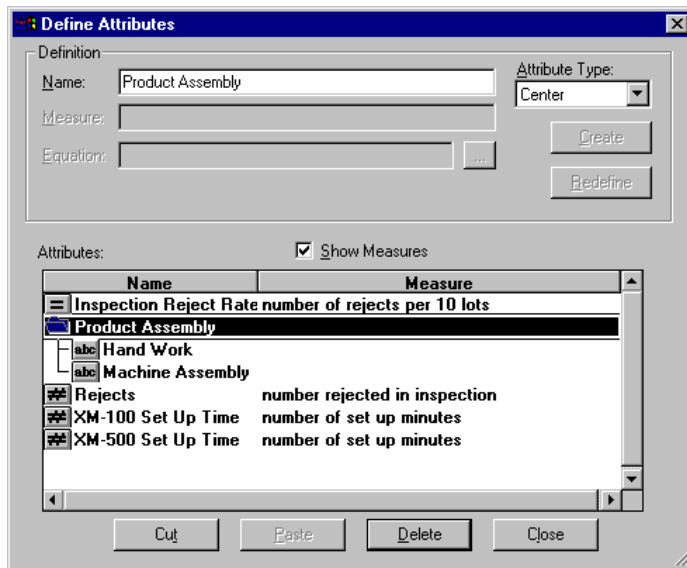
A large model may contain many attributes. Managing attributes is easier if you group them. Related attributes are grouped by creating an attribute center and moving the related attributes into the center.

Once attributes are assigned to an attribute center, the attribute center type cannot be changed from center to text, numeric, or calculated, and it cannot be deleted. You can rename the center, and you can delete the center only after first removing the contents.

➤ **Define an attribute center**

1. In the **Define Attributes** dialog box, select **Show Measures**.
2. For the **Name**, type **Product Assembly**.
3. Select the **Attribute Type** of **Center**.

4. Click **Create**.
You see an attribute center named Product Assembly.
5. Drag the attributes **Hand Work** and **Machine Assembly** to the **Product Assembly** center.
Note: You see the icon change to . This icon indicates an attribute center contains attributes.
6. Double-click  to expand the center and display the center attributes.




7. Click **Close**.
8. Save the model.

Attaching attributes

After attributes have been defined, they must be attached to centers, activities, or entered cost elements. Each such object in a model can have any number of attributes. Once an object has an attribute attached, any changes made to the attribute are reflected in the object. If you change a numeric attribute, however, you must recalculate the model to reflect the change.

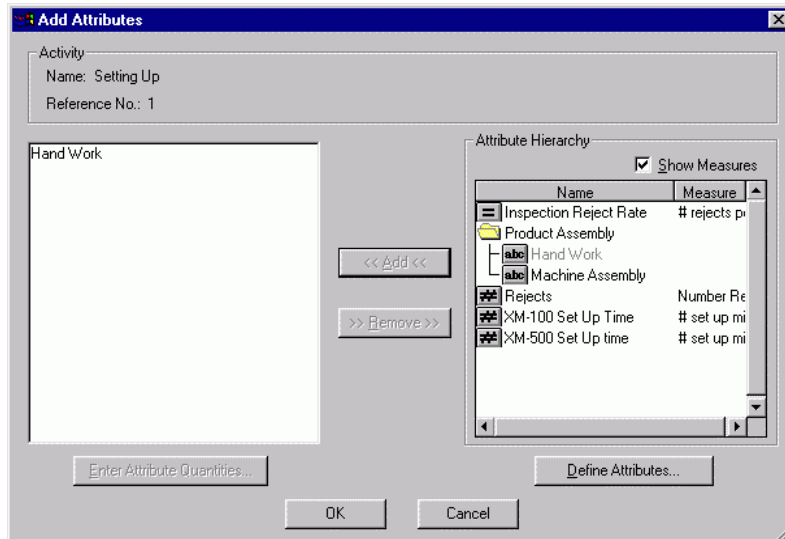
➤ Attach attributes to objects

1. If necessary, select the Activity module.
2. Select **View > Multilevel View**, or click  on the toolbar.
3. Select the **Setting Up** activity.
4. Select **Edit > Add Attributes**.

You see the Add Attributes dialog box.

5. Double-click the **Product Assembly** attribute center.
You see the attributes within the attribute center.
6. From the **Attribute Hierarchy** list, select **Hand Work**.
7. Click **<<Add<<**.

You see Hand Work move to the list on the left.



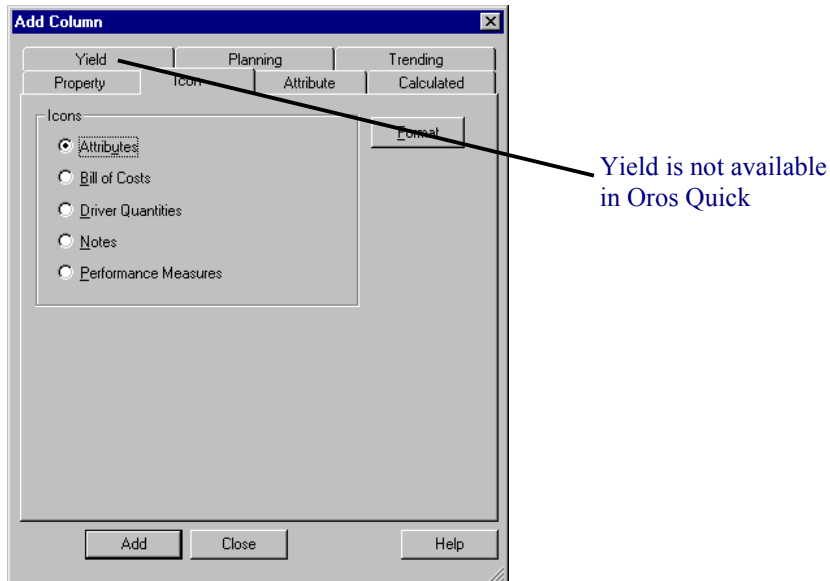
8. Click **OK**.
The attribute is now attached to the Setting Up activity.
9. Use the procedure you just learned to attach attributes to the activities that follow:

Activity	Attribute
Inspecting	Inspection Reject Rate
Inspecting	Rejects
Assembling	Machine Assembly

➤ **Add a column to indicate activities with attached attributes**

1. In the Activity module, double-click the blank heading on the column-heading bar.
You see the Add Column dialog box.
2. Click the **Icon** tab.

3. Select **Attributes**.



4. Click **Add**.
5. Click **Close**.

You see an attribute column added that displays an icon for activities that have attached attributes.

Name	ReferenceNumber	Cost
Activity		\$0.00
Setting Up	1	\$0.00
Scheduling	2	\$0.00
Inspecting	3	\$0.00
Assembling	4	\$0.00

6. Save the model.

Note: It is important to save your work now. In the next lesson, you will make a change that you do not want to keep and will revert to the previously saved model. Do not save the model again until you are instructed to so by this tutorial.

Removing attributes

There are two aspects to removing attributes:

- ❑ Detaching an attribute from an activity — the opposite of attaching an attribute
- ❑ Deleting attributes from the model — the opposite of defining an attribute

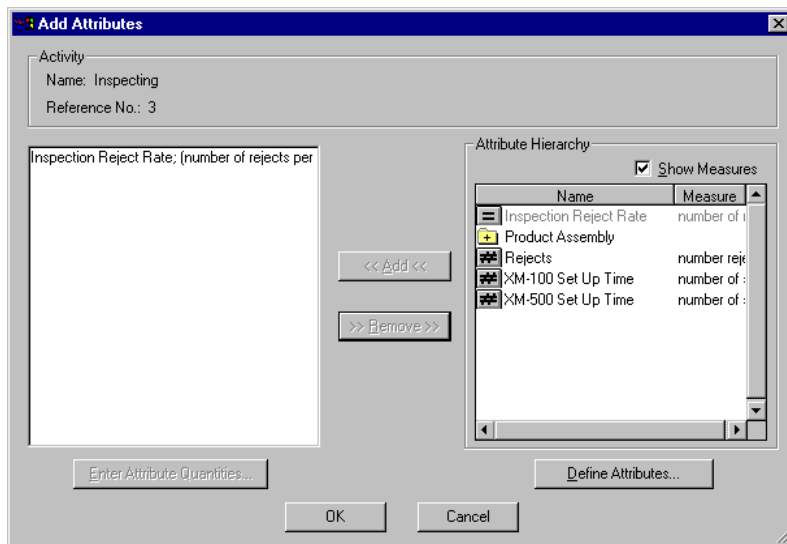
➤ Detach an attribute from an object

1. Select the **Inspecting** activity.
2. Select **Edit > Add Attributes**.

You see the Add Attributes dialog box.

3. From the list on the left, select the **Rejects** attribute.
4. Click **>>Remove>>**.

You see the selected attribute moved to the Attribute Hierarchy list on the right.



5. Click **OK**.

You see that the attribute icon column in the Activity module window still indicates an attribute for the Inspecting activity. This is because the Inspection Reject Rate attribute is still attached to this activity.

➤ Delete an attribute from the model

1. Select **Model > Define Attributes**.

You see the Define Attributes dialog box.

2. Expand the **Product Assembly** attribute center.

3. Select **Hand Work**.

Note: You can choose more than one attribute at a time using standard operating system multiple-selection methods or dragging the mouse through a contiguous set of attributes.

4. Click **Delete**.

You see a message advising you that all uses of the selected attribute will be deleted.

5. Click **OK**.

You see the selected attribute removed.

6. Click **Close**.

Note: Do not save the model.

Let us assume you did not intend to delete this attribute. Now, you must revert to the previously saved model version. Reverting allows you to discard all changes made to the model since it was last saved.

➤ **Revert to a previously saved model version**

1. Select **File > Revert to Saved**.

You see a message asking if you want to discard all changes made since the model was last saved.

2. Click **OK**.

You see the model close and then the last saved version of the model open.

Note: Remember that you will lose all work performed after the last save, so be sure to save often in case you need to use this feature.

Model Periods

A model period is an interval of time in which activity-based costing data is maintained. A model can hold data for different periods but only one period at a time is active. The real value of model periods is the ability to compare the model data between different periods. For example, you can enter costs into the model on a month-by-month basis and examine the costs for March vs. the costs for February.

A default period named Period1 is automatically created when a model is created. This period is intended to hold information that pertains to the entire model and model structure. Although individual period data can be stored in Period1, it is more meaningful to store data in customary business intervals of time.

Creating and selecting a model period

Tyler Electronics analyzes production costs from quarter to quarter, so the model will be structured to analyze quarter-on-quarter costs.

➤ **Create a model period**

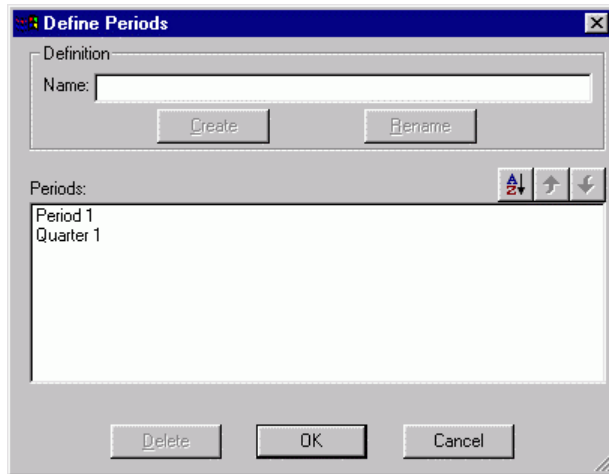
1. Select **Period > Define Periods**.

You see the Define Periods dialog box.

2. For the **Name**, type **Quarter 1**.

3. Click **Create**.

You see the period Quarter 1 added to the Periods list.



4. Click **OK**.
5. Save the model.

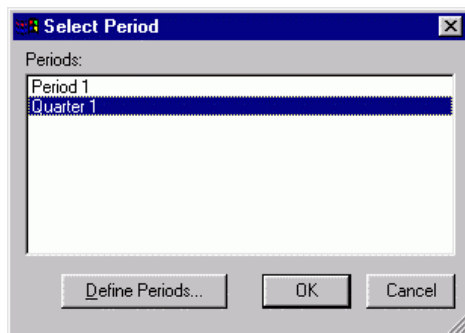
You will now select Quarter 1 as the active period so that you can enter attribute quantities for this period.

➤ **Select a period**

1. Select **Period > Select Period**.

You see the Select Period dialog box.

2. Select **Quarter 1**.




3. Click **OK**.

You see the model period, which is displayed in the title bar of the module, set to Quarter 1.

Entering attribute quantities

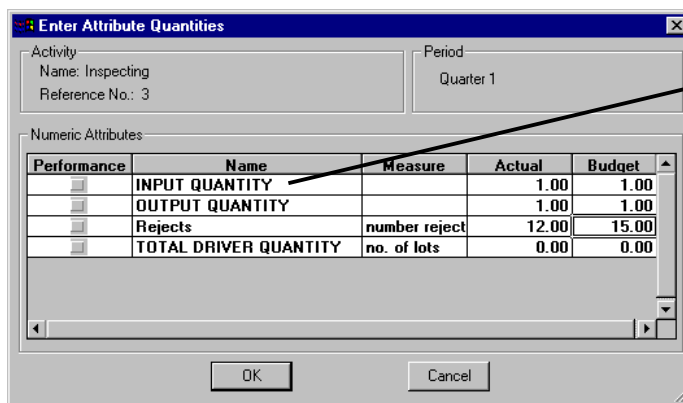
You have defined attributes and assigned them to activities. Now, you need to attach quantities to the attributes. Attribute quantities are used by numeric attributes to allocate cost to activities and to calculate performance values.

➤ Enter attribute quantities

1. Select the Activity module.
2. Select **View > Multilevel View**, or click  on the toolbar.
3. Select the **Inspecting** activity.
4. Select **Period > Enter Attribute Quantities**.

You see the Enter Attribute Quantities dialog box.

5. Where the **Actual** column and **Rejects** row intersect, type **12**.
6. Where the **Budget** column and **Rejects** row intersect, type **15**.



Performance	Name	Measure	Actual	Budget
<input type="checkbox"/>	INPUT QUANTITY		1.00	1.00
<input type="checkbox"/>	OUTPUT QUANTITY		1.00	1.00
<input type="checkbox"/>	Rejects	number reject	12.00	15.00
<input type="checkbox"/>	TOTAL DRIVER QUANTITY	no. of lots	0.00	0.00

Input Quantity is not available in Oros Quick

7. Click **OK**.
8. Save the model.

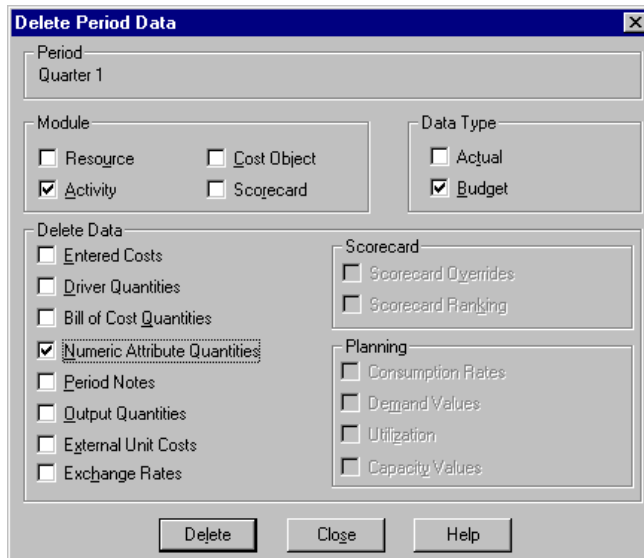
➤ Delete attribute quantities

1. Select **Period > Delete Period Data**.

You see the Delete Period Data dialog box.

- Select the following options:

Module section	Data Type section	Delete Data section
Activity	Budget	Numeric Attribute Quantities



- Click **Delete**.
- Select **Period > Enter Attribute Quantities**.
You see the Enter Attributes Quantities dialog box. Notice that the budget numeric attribute quantity for Rejects, which you entered previously, has been deleted.
- Where the **Budget** column and **Rejects** row intersect, type **15**.
- Click **OK**.
- Save the model.

Performance measures

Performance measures indicate results achieved from work or activities performed. They also indicate how well a company accomplishes its strategies and objectives. These measures can be financial or non-financial and include three aspects of performance:

- Efficiency of the activity — the volume of an activity compared to the resources needed to sustain the activity measures cost indirectly. Cost-per-item is a measure of efficiency.
- Timeliness of the activity — the elapsed time to perform an activity, or to produce a product or service, are indirect measures of cost. The average elapsed time to produce a product is a measure of time.
- Quality of the activity — the percentage of error-free or one-time-only activities are direct measures of quality and indirect measures of cost. The percentage of rejected items and the percentage of reworked items are measures of quality.

Adding or removing performance measures

To track how well Tyler Electronics is performing, you will enter some performance measures for selected activities.

Performance measures are labels attached to centers, activities, or cost elements. In this sense, they are like attributes but, in addition, performance measures are a source of measures that drive the balanced scorecard.

➤ Add or remove performance measures

1. Select the **Inspecting** activity.
2. Select **Edit > Add Performance Measures**.

You see the Add Performance Measures dialog box.

3. Click **Add Performance**.
4. Click in the cell where the **Performance** column and **Rejects** row intersect.

You see a check that indicates the attribute is selected as a performance measure.

Performance	Name	Measure	Actual	Budget
<input type="checkbox"/>	INPUT QUANTITY		1.00	1.00
<input type="checkbox"/>	OUTPUT QUANTITY		1.00	1.00
<input checked="" type="checkbox"/>	Rejects	number reject	12.00	15.00
<input type="checkbox"/>	TOTAL DRIVER QUANTITY	no. of lots	0.00	0.00

Input Quantity is not available in Oros Quick

5. Click **OK**.

6. Click **Close**.

➤ **Add a column to indicate activities with performance measures**

1. Double-click the blank heading on the column-heading bar.

You see the Add Column dialog box.

2. Click the **Icon** tab.
3. Select **Performance Measures**.
4. Click **Add**.
5. Click **Close**.

You see an icon column added that displays performance measure icons for activities that have assigned performance measures.

Name	ReferenceN	Cost	
Activity		\$0.00	
Setting Up	1	\$0.00	📊
Scheduling	2	\$0.00	
Inspecting	3	\$0.00	📊
Assembling	4	\$0.00	📊

6. Save the model.

In the next lesson

The foundation of your ABC model is complete. Tyler Electronics has built a structure that permits the company to logically and accurately assign costs to work performed and products produced. Attributes are in place to classify activities and performance measures are defined to demonstrate the results of those activities.

Next, it is time to enter external and internal bills of costs — cost for items purchased from external sources and incurred through internal accounts.

Adding bills of costs

Not all costs assigned through an activity-based costing model come from the general ledger. For example, material cost (the cost of purchased components) often comes from a Materials Requirements Planning (MRP) system. The bill of costs feature provides a way to add material and unit costs directly to accounts when implementing activity-based costing.

Bill of costs information is used to calculate the cost of all the materials or components contributing to a product or process.

Bills of costs are common to process-manufacturing activities. A bill of costs for an activity lists all the materials added at that step in the process. By adding material costs to activities that consume them, you can trace the cost of waste, as well as finished products, more accurately.

Bills of material exist in many discrete manufacturing environments. A bill of material can be a list of the items that make up a product, the number of items needed for a product, and the unit cost for each item.

The application does not reconcile the number of units used in a period with the number of units produced and remaining in inventory. However, the unit usage report lists all of the items that use each unit, and the number used, during the period. This report can be used in conjunction with an inventory control system.

This lesson addresses:

- Using bills of costs
- Internal and external bills and units
- Creating and attaching external and internal units and bills of costs

Using bills of costs

Bills of costs are used to find the resources consumed by an activity and consist of external or internal units. Bills of cost are used when:

- Costs outside the general ledger must be introduced into a model
- Unit costs associated with product families must be tracked
- The cost structure of an account is incomplete in some respect

Each Cost property is defined with a list of internal and external units added to any account.

Internal and external bills and units

In discrete–manufacturing environments, many products are components of other products. These “internal units,” produced by the company, can be used in any bill of costs. Units purchased by the company, with costs maintained outside the model, are used as “external units” in a bill of costs.

These internal and external units are another type of cost element in addition to entered and assigned cost elements.

The unit cost contribution for an account is included when calculating the total account cost for a period.

Creating and attaching external and internal units and bills of costs

Once you have the information for the external and internal units, you can add the external units to an account as a bill of costs. First, make a list of external units available to the whole model. For example, the required raw materials for each product. Then, select units from the list for use as a bill of costs to be attached to an account.

➤ Create external units

1. Select **Model > Define External Units**.

You see the Define External Units dialog box.

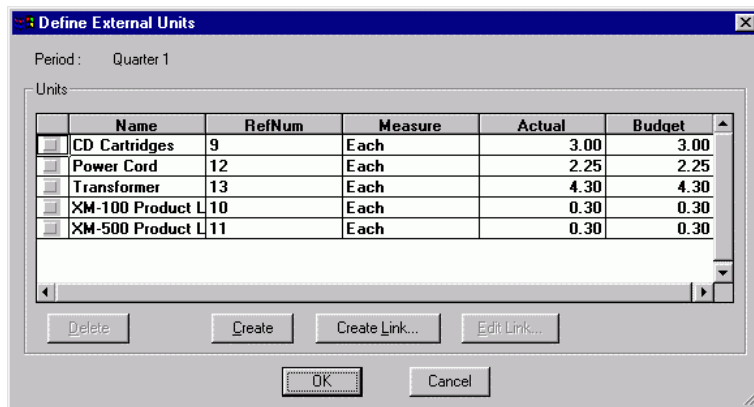
2. Click **Create**.

You see a default unit called External Unit added, followed by a reference number. The default name is selected and ready for you to rename.

3. Change the default name of **External Unit** to **CD Cartridges**.
4. Type **Each** as the **Measure**.
5. Change the **Actual** and **Budget** amounts to **3.00**.



6. Create four additional external units as follows:

Name	Measure	Actual	Budget
XM-100 Product Label	Each	0.30	0.30
XM-500 Product Label	Each	0.30	0.30
Power Cord	Each	2.25	2.25
Transformer	Each	4.30	4.30

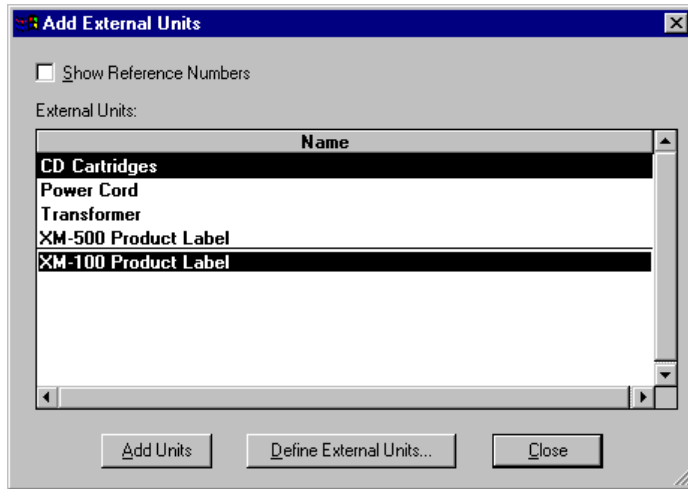


7. Click **OK**.

➤ **Attach an external bill of costs**

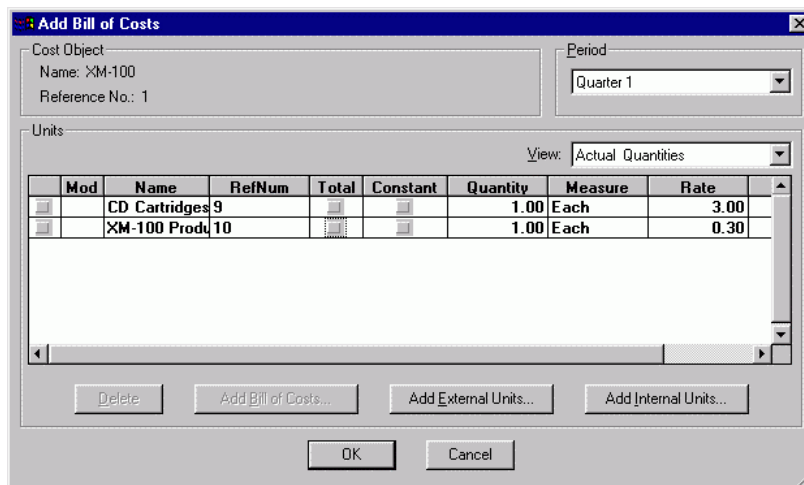
1. Select **Modules > Cost Object Module**, or click  on the toolbar.
2. Select **View > Multilevel View**, or click  on the toolbar.
3. Select the **XM-100** account.
4. Select **Edit > Add Bill of Costs**.
You see the Add Bill of Costs dialog box.
5. Click **Add External Units**.
You see the Add External Units dialog box.

6. Select **XM-100 Product Label**, then press and hold **Ctrl** while selecting **CD Cartridges**.
You see both CD Cartridges and XM-100 Product Label selected.




7. Select **Add Units**.
8. Click **Close**.

You see the Add Bill of Costs dialog box with the two external units in the Units list.



9. Click **OK**.
10. Add another column to display the **BOCCost** property.

11. Expand the **XM-100** account.

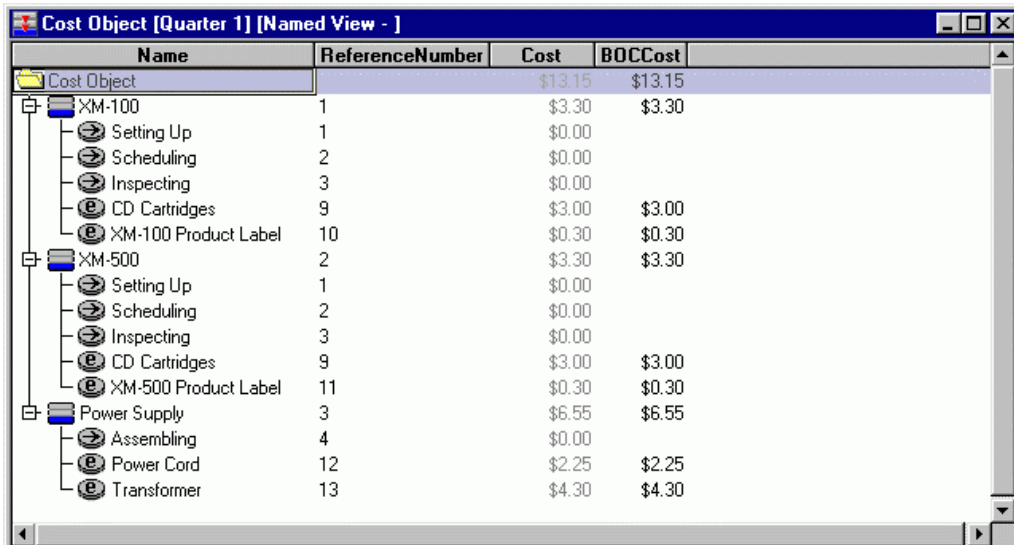
You see the external bills of costs  attached to the account.



Name	ReferenceNumber	Cost	BOCCost
Cost Object		\$3.30	\$3.30
XM-100	1	\$3.30	\$3.30
Setting Up	1	\$0.00	
Scheduling	2	\$0.00	
Inspecting	3	\$0.00	
CD Cartridges	9	\$3.00	\$3.00
XM-100 Product Label	10	\$0.30	\$0.30
XM-500	2	\$0.00	\$0.00
Power Supply	3	\$0.00	\$0.00

12. Use the procedure you just learned to add external bills of costs as follows:

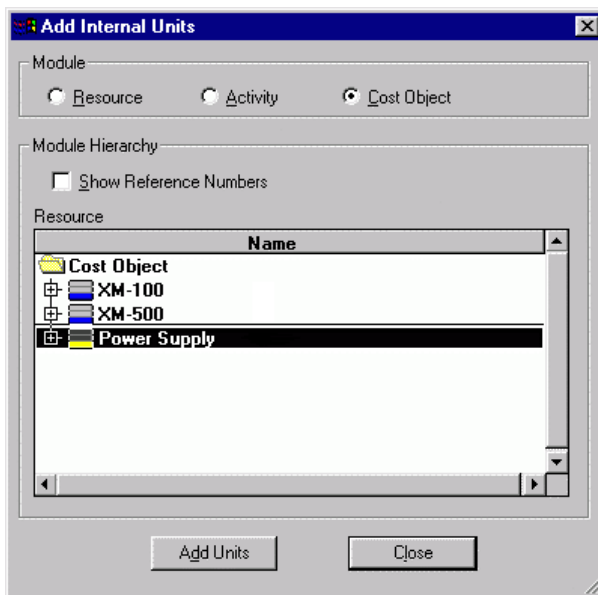
Account	External Bill of Costs
XM-500	CD Cartridges
XM-500	XM-500 Product Label
Power Supply	Power Cord
Power Supply	Transformer



Name	ReferenceNumber	Cost	BOCCost
Cost Object		\$13.15	\$13.15
XM-100	1	\$3.30	\$3.30
Setting Up	1	\$0.00	
Scheduling	2	\$0.00	
Inspecting	3	\$0.00	
CD Cartridges	9	\$3.00	\$3.00
XM-100 Product Label	10	\$0.30	\$0.30
XM-500	2	\$3.30	\$3.30
Setting Up	1	\$0.00	
Scheduling	2	\$0.00	
Inspecting	3	\$0.00	
CD Cartridges	9	\$3.00	\$3.00
XM-500 Product Label	11	\$0.30	\$0.30
Power Supply	3	\$6.55	\$6.55
Assembling	4	\$0.00	
Power Cord	12	\$2.25	\$2.25
Transformer	13	\$4.30	\$4.30

➤ **Attach an internal bill of cost**

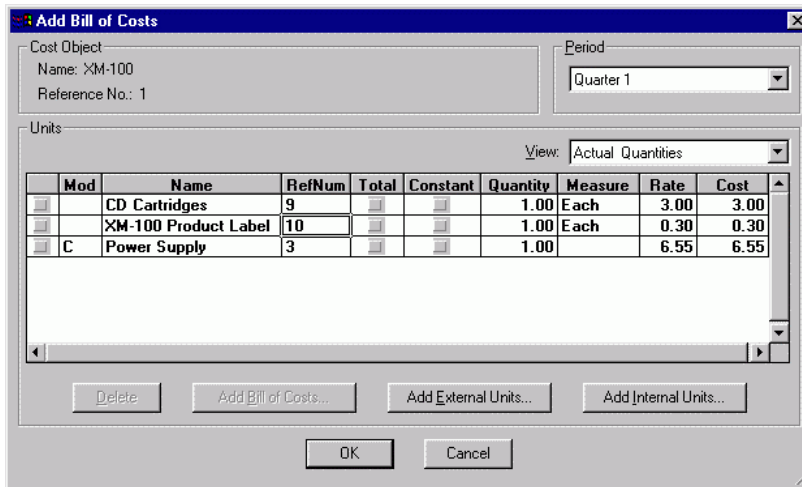
1. Select the **XM-100** account.
2. Select **Edit > Add Bill of Costs**.
You see the Add Bill of Costs dialog box.
3. Click **Add Internal Units**.
You see the Add Internal Units dialog box.
4. In the **Module** section, select **Cost Object**.
5. Select **Power Supply**.



6. Select **Add Units**.

- Click **Close**.

You see the Add Bill of Costs dialog box. A letter C (for Cost Object) appears in the Mod (Module) column. If Total is not selected, the cost is interpreted as a bill of costs unit cost. The bill of costs is calculated as the Actual Cost multiplied by the Quantity to produce Total Cost. If Total is selected, the Actual Cost is interpreted as the bill of costs Total Cost.



- Click **OK**.
- Use the procedure you just learned to attach an internal bill of costs named **Power Supply** to the **XM-500** account.

You see the internal bills of costs attached to the accounts.

- Add an icon column to display **Bill of Costs**.

You see a column added that displays bills of costs icons for cost objects that have assigned bills of cost.

Note: Notice that the internal bills of costs amounts are not included in the total costs. This occurs when you calculate the model, which you will do in a later lesson.



11. Save the model.

In the next lesson

Costs that are attached to products, and vary according to the number of units produced, have been established in the model.

Next, for Tyler Electronics Quarter 1, you will enter data.

Entering data

By building the structure of the ABC model, you have defined how costs flow from resources (expenditures) to activities (work) to cost elements (products and services) or expenditures.

Cost information is maintained in periods. Usually, these periods are months, quarters, and years. Now you will add costs incurred by Tyler Electronics for the period Quarter 1.




This lesson addresses:

- Entering resource costs
- Assigning resource driver paths
- Entering resource driver quantities
- Assigning activity driver paths
- Entering activity driver quantities
- Entering output quantities

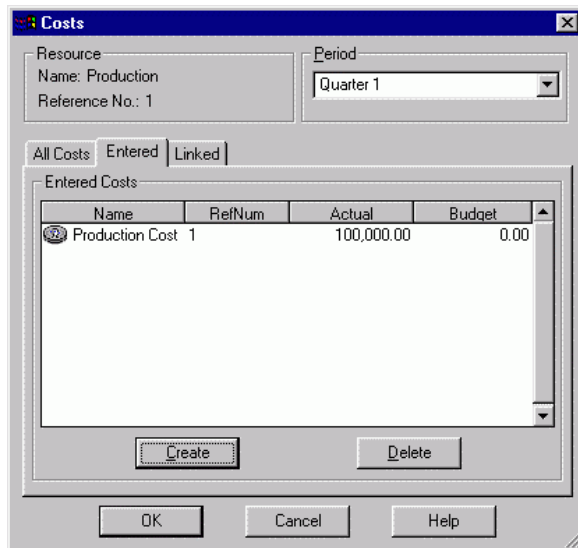
Entering resource costs

Resource costs are expenditures made by a company. Typically, these expenditures are maintained in the company's general ledger. Up to this point, you have built the structure of the model, including some period-specific data. Now, you will add Resource module costs for Quarter 1 to the model.

➤ Enter costs in the Resource module

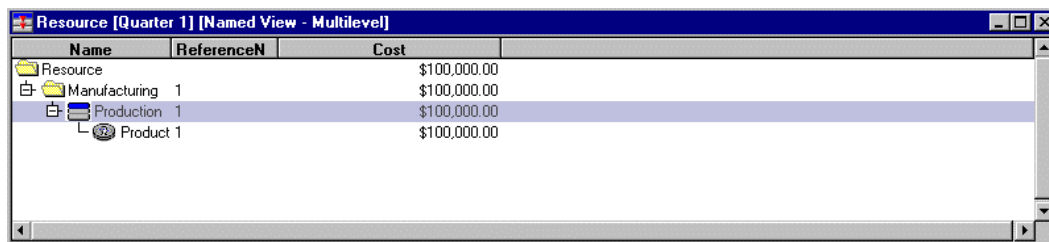
1. Select **Modules > Resource Module**, or click  on the toolbar.
2. Select **View > Multilevel View**, or click  on the toolbar.
3. Navigate through the resource hierarchy to the **Production** account.
4. Select the **Production** account.
5. Select **Period > Enter Costs**, or double-click the cost element icon .
- You see the Costs dialog box.
6. Select the **Period** of **Quarter 1**.
7. Click the **Entered** tab.

- Double-click where the **Actual** column and **Production Cost** row intersect, and type **100,000**.



- Click **OK**.

You see the costs in the Resource module.





- Save the model.


You can enter cost directly in the Cost column of an entered cost element in a module. You cannot add a cost directly to an account or a center.

Assigning resource driver paths

Now that the total resource cost has been set, specify the activities that receive a portion of the Production costs, and then assign them to the resource driver.

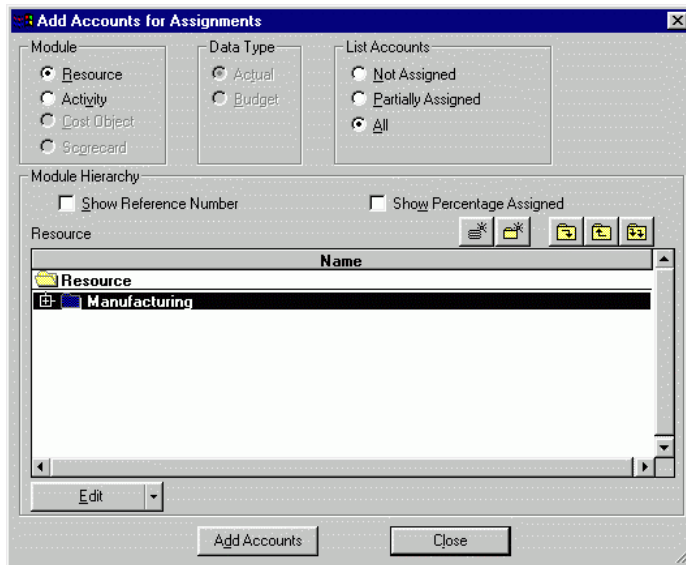
➤ Create resource driver assignment paths

- Select **Module > Activity Module**, or click  on the toolbar.
- Select **View > Destination View**, or click  on the toolbar.
- Select the **Activity Module Summary** (the highest-level folder in the Activity module).

- Click  on the Assignment toolbar.

You see the Add Accounts for Assignments dialog box and the resource accounts available for assignment to the activity accounts.

- In the **Module Hierarchy** section, select **Manufacturing**.



- Click **Add Accounts**.
- Click **Close**.
- Select the **Production** account.

You see the resource driver assignment paths.

Name	ReferenceN	DriverName
Production	1	PERCENTAGES

Name	ReferenceN	DriverQuantity
Activity		
Setting Up	1	0.00
Scheduling	2	0.00
Inspecting	3	0.00
Assembling	4	0.00

Entering resource driver quantities

To complete apportioning resource cost among activities, specify the portion of the \$100,000 Production cost the resource driver uses to allocate cost to each activity.

➤ Enter resource driver quantities

1. Select **Period > Enter Driver Quantities**.

You see the Enter Driver Quantities dialog box.

2. Click the **Assignments** tab.
3. Type **40** in the cell where the **PERCENTAGES** column and **Setting Up** row intersect.
4. Press **Enter**.
5. Use the procedure you just learned to add percentages for the following activities:

Activity	Percentages
Scheduling	20
Inspecting	10
Assembling	30

Note: If you enter amounts that total more than 100, you will see a dialog box telling you that the account is over assigned. You will be allowed to continue but over assigning will cause a fatal error when you calculate the model.

6. Click **OK**.

You see the resource cost assignment paths and the assigned driver quantities.

Name	ReferenceN	DriverName
Production	1	PERCENTAGES

Name	ReferenceN	DriverQuantity
Activity		
Setting Up	1	40.00
Scheduling	2	20.00
Inspecting	3	10.00
Assembling	4	30.00



Note: To enter driver quantities directly, select a resource account's cell in the DriverQuantity column, and type the driver quantity.

7. Save the model.

Assigning activity driver paths

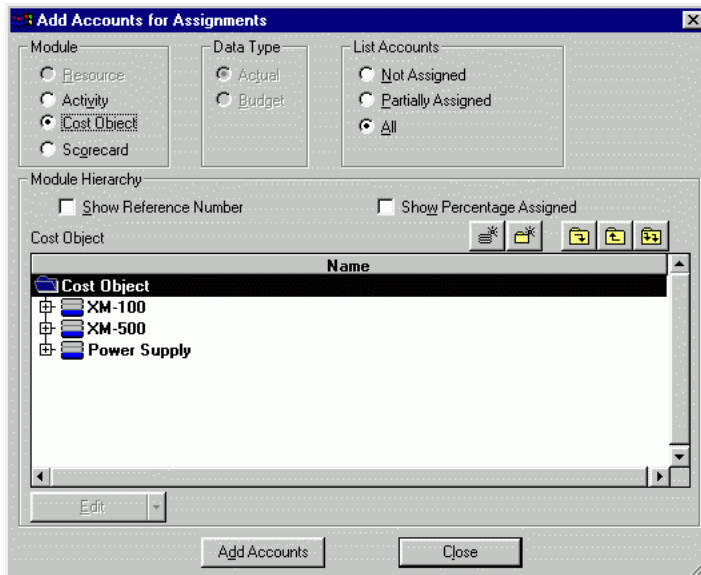
Activity drivers relate the consumption of activities by cost objects (products and services) a company produces. Activity drivers have assignment paths specifying the cost objects that consume a portion of an activity.

➤ Create activity driver assignment paths

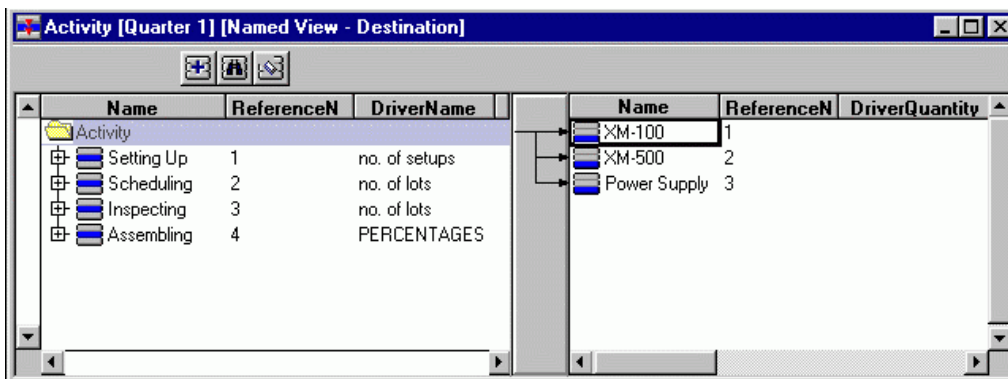
1. Select **View > Source View**, or click  on the toolbar.
2. Select the **Activity Module Summary**.
3. Click  on the Assignment toolbar.

You see the Add Accounts for Assignments dialog box and the accounts available for assignment from the activity accounts.

- In the **Module Hierarchy** section, select **Cost Object**.



- Click **Add Accounts**.
- Click **Close**.
- Select the **Activity Module Summary**.
You see the activity driver assignment paths.



Entering activity driver quantities

To complete apportioning activities among cost objects, specify the quantity of each activity consumed by a cost object.

➤ Enter activity driver quantities

1. Double-click the **Setting Up** activity account in the left pane.
You see the Enter Driver Quantities dialog box.
2. Select **no. of setups** cell column for the **XM-100** account.
3. Type **14** for the quantity of setups to assign to the **XM-100** account.
4. Click **Apply**.
5. Use the procedure you just learned to assign a **no. of setups** quantity of **13** to the **XM-500** cost object.

The dialog box 'Enter Driver Quantities' contains the following information:

- Activity:** Name: Setting Up, RefNum: 1, Driver Name: no. of setups
- Period:** Quarter 1
- Display Storage Precision
- Assigned To Table:**

Name	RefNum	no. of setups
XM-100	1	14.00
XM-500	2	13.00
- View:** Actual Driver Quantities
- Show Totals
- Buttons:** OK, Close, Apply, Help

- Click **Close**.

You see the Setting Up activity assignment paths and the assigned driver quantities.

The screenshot shows a software window titled "Activity [Quarter 1] [Named View - Source]". It contains two tables. The left table lists activities, and the right table lists accounts with their assigned driver quantities.

Name	ReferenceN	DriverName
Activity		
Setting Up	1	no. of setups
Scheduling	2	no. of lots
Inspecting	3	no. of lots
Assembling	4	PERCENTAGES

Name	ReferenceN	DriverQuantity
XM-100	1	14.00
XM-500	2	13.00
Power Supply	3	

- Select the **Scheduling** activity account.
- Select the **DriverQuantity** cell column for the **XM-100** account in the right pane.
- Type **9** as the **no. of lots** driver quantity to assign to **XM-100**, and press **Enter**.
- Type **13** as the **no. of lots** driver quantity to assign to **XM-500**, and press **Enter**.

You see the Scheduling activity assignment paths and the assigned driver quantities.

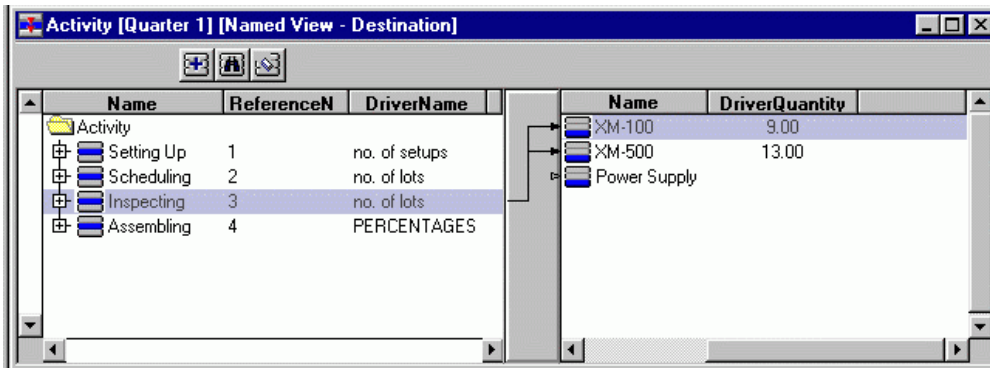
The screenshot shows the same software window as before, but with the "Scheduling" activity selected in the left pane. The driver quantities in the right pane have been updated: XM-100 is now 9.00 and XM-500 is now 13.00.

Name	ReferenceN	DriverName
Activity		
Setting Up	1	no. of setups
Scheduling	2	no. of lots
Inspecting	3	no. of lots
Assembling	4	PERCENTAGES

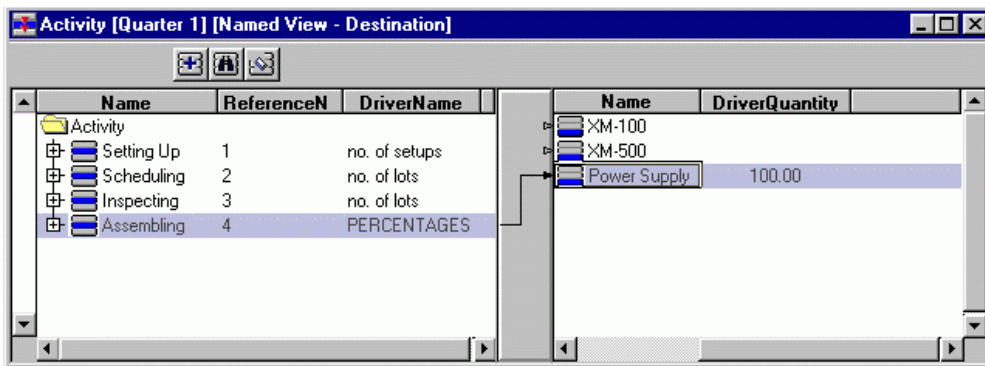
Name	ReferenceN	DriverQuantity
XM-100	1	9.00
XM-500	2	13.00
Power Supply	3	

11. Select the **Inspecting** activity account.

You see the Inspecting activity assignment paths and the assigned driver quantities. Because the no. of lots driver is a shared driver, activities that use this driver share the same quantities. Therefore, you see the quantities you entered for the Scheduling account.



12. Select the **Assembling** activity account.
 13. In the **DriverQuantity** cell column for the **Power Supply** cost object and type **100** and press **Enter**.
- You see the PERCENTAGES driver quantity assigned to the Power Supply cost object.





14. Save the model.

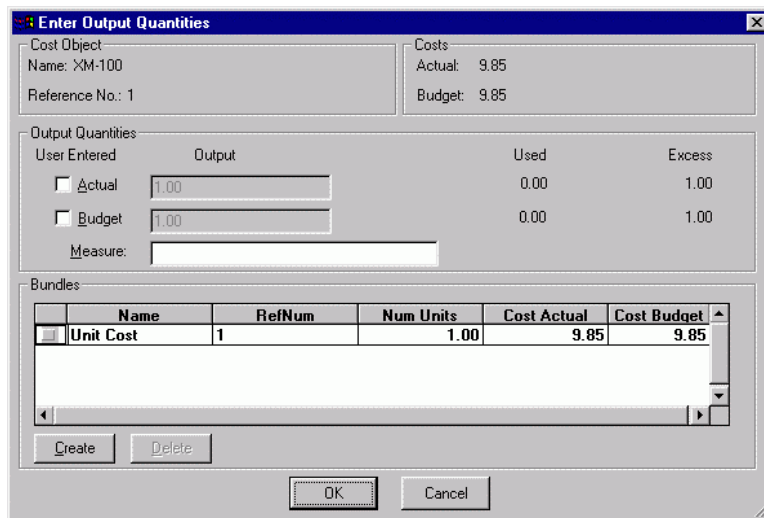
Entering output quantities

Output quantities are amounts or units of manufactured product, services provided, or customers served by a company.

➤ Enter output quantities

1. Select **Modules > Cost Object Module**, or click  on the toolbar.
2. Select **View > Multilevel View**, or click  on the toolbar.
3. Select the **XM-100** account.
4. Select **Period > Enter Output Quantities**.

You see the Enter Output Quantities dialog box.



Cost Object		Costs	
Name:	XM-100	Actual:	9.85
Reference No.:	1	Budget:	9.85

Output Quantities			
User Entered	Output	Used	Excess
<input type="checkbox"/> Actual	1.00	0.00	1.00
<input type="checkbox"/> Budget	1.00	0.00	1.00

Bundles					
	Name	RefNum	Num Units	Cost Actual	Cost Budget
<input checked="" type="checkbox"/>	Unit Cost	1	1.00	9.85	9.85

5. In the **Output Quantities** section, select User Entered **Actual**.
6. For **Output**, type **1040**.
7. Click **OK**.
8. Use the procedure you just learned to enter **260** as the **XM-500** output quantity.
9. Add a column to display the **UserOutputQty** property.

You see the number of units of each product produced during Quarter 1.

Name	ReferenceNumber	Cost	BOCCost	UserOutputQty
Cost Object		\$13.15	\$13.15	
XM-100	1	\$9.85	\$9.85	1,040.00
Setting Up	1	\$0.00		
Scheduling	2	\$0.00		
Inspecting	3	\$0.00		
CD Cartridges	9	\$3.00	\$3.00	
XM-100 Product Label	10	\$0.30	\$0.30	
Power Supply	3	\$6.55	\$6.55	
XM-500	2	\$9.85	\$9.85	260.00
Setting Up	1	\$0.00		
Scheduling	2	\$0.00		
Inspecting	3	\$0.00		
CD Cartridges	9	\$3.00	\$3.00	
XM-500 Product Label	11	\$0.30	\$0.30	
Power Supply	3	\$6.55	\$6.55	
Power Supply	3	\$6.55	\$6.55	
Assembling	4	\$0.00		
Power Cord	12	\$2.25	\$2.25	
Transformer	13	\$4.30	\$4.30	

10. Save the model.

In the next lesson

Next, you will calculate the model and see how activity-based costing allocates and distributes costs.

Calculating costs

The structure of an ABC model defines drivers and cost–assignment paths which direct how costs flow from resources to activities to cost elements — from expenditures to work to products, services, and customers.

Typically, costs are entered in an ABC model at the end of a company–defined period. These cost data come from the company’s general ledger accounts and from external bills of costs. Additional cost information can come from an MRP system. Production data are also entered into a model.




This lesson addresses:

- ❑ Calculating costs
- ❑ Interpreting the calculation summary
- ❑ Viewing and verifying calculation results

Calculating costs

Tyler Electronics cost and production quantities were entered for the Quarter 1 period, so calculations will be performed for Quarter 1.

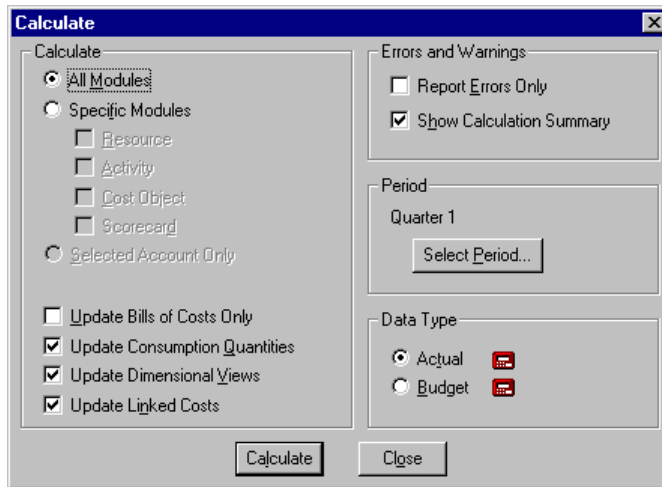
➤ Calculate costs

1. Select **Modules > Cost Object Module**, or click  on the toolbar
2. Select **View > Multilevel View**, or click  on the toolbar.
3. Select **Model > Calculate**, or click  on the toolbar.

You see the Calculate dialog box.

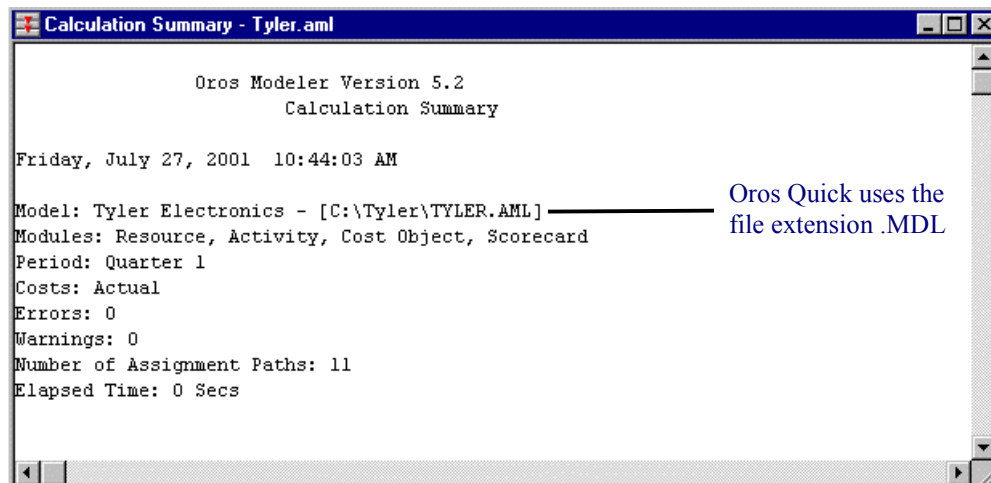
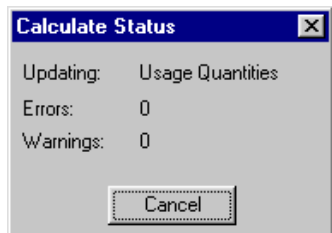
4. In the **Calculate** section, select **All Modules**.
5. In the **Errors and Warnings** section, select **Show Calculation Summary**.
6. If the **Period** is not Quarter 1, click **Select Period** and double–click **Quarter 1**.

7. In the **Data Type** section, select **Actual**.



8. Click **Calculate**.

You see a Calculate Status dialog box during the calculation and a Calculation Summary window after the calculation finishes.



9. Click  to close the **Calculation Summary** window.

Notice that there were no warnings or errors.

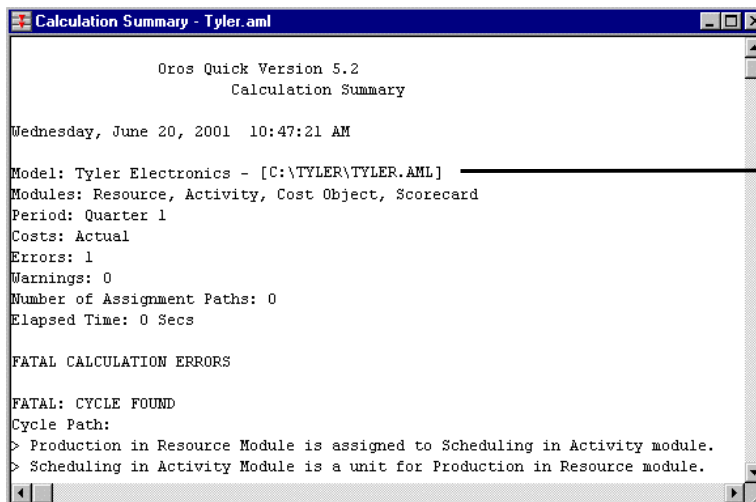
Interpreting the calculation summary

In most cases, the calculation summary shows no warnings or errors. However, warnings or errors might occur that are informative rather than problematic. For example, errors and warnings may highlight cost data that was 000entered incorrectly or omitted, incorrect assignment of resources to activities or of activities to cost objects, or modules with information yet to be entered.

Experienced activity-based costing users frequently perform a model calculation after creating accounts, assignment paths, and driver quantities, or entering cost data, as a validation and quality assurance technique. Calculations can be performed on particular modules using the Specific Modules options in the Calculate Costs dialog box.

Calculation summary error example

This Calculation Summary displays an error deliberately introduced to demonstrate the information provided in a Calculation Summary with errors.



```

Oros Quick Version 5.2
Calculation Summary

Wednesday, June 20, 2001 10:47:21 AM

Model: Tyler Electronics - [C:\TYLER\TYLER.AML]
Modules: Resource, Activity, Cost Object, Scorecard
Period: Quarter 1
Costs: Actual
Errors: 1
Warnings: 0
Number of Assignment Paths: 0
Elapsed Time: 0 Secs

FATAL CALCULATION ERRORS

FATAL: CYCLE FOUND
Cycle Path:
> Production in Resource Module is assigned to Scheduling in Activity module.
> Scheduling in Activity Module is a unit for Production in Resource module.

```

Oros Quick uses the file extension .MDL

A fatal calculation cycle error occurred.

Attaching the Scheduling activity as an internal Bill of Cost to the Production account in the Resource module was an invalid association. Some of the Production account cost is assigned to the Scheduling activity and Scheduling is assigned as a unit for Production that is in the Resource module. This creates an endless calculation cycle that prevents the model from calculating.

To correct the error, remove the Scheduling activity as an internal bill of cost from the Production account in the Resource module.

Viewing and verifying calculation results

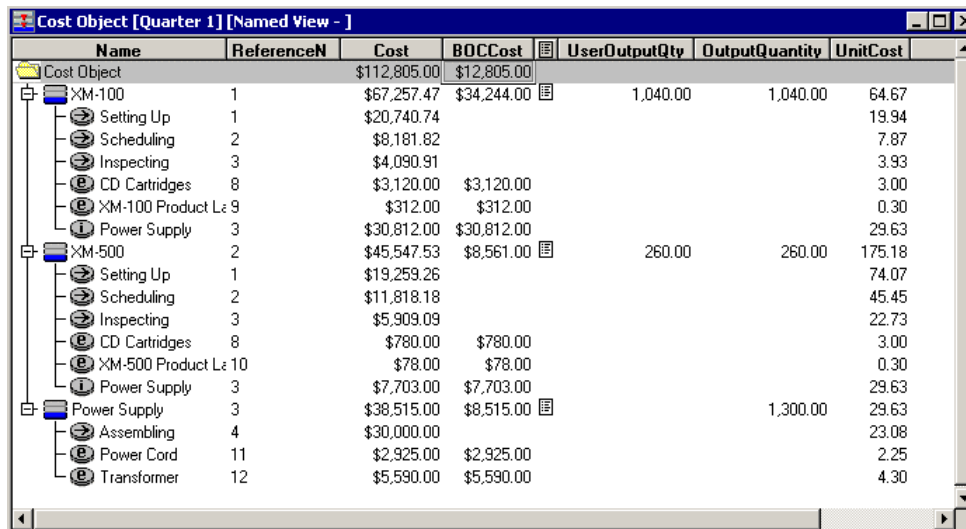
The calculation flows resource costs to activities using the resource drivers and activity costs to cost objects using the activity drivers. After calculating costs, you will want to see the total production costs for each of the products for Quarter1.

➤ View cost flow

1. Add two columns to display **OutputQuantity** and **UnitCost**.

Note: The BOCCost and UserOutputQty columns were added in the Add Bills of Cost lesson. If necessary, complete that lesson before continuing and add the BOCCost and UserOutputQty columns to the Cost Object module. If you added these columns but they are not visible, move the scroll bar completely to the left and they should become visible.

2. Expand of the three accounts — **XM-100**, **XM-500**, **Power Supply**.



Name	ReferenceN	Cost	BOCCost	UserOutputQty	OutputQuantity	UnitCost
Cost Object		\$112,805.00	\$12,805.00			
XM-100	1	\$67,257.47	\$34,244.00	1,040.00	1,040.00	64.67
Setting Up	1	\$20,740.74				19.94
Scheduling	2	\$8,181.82				7.87
Inspecting	3	\$4,090.91				3.93
CD Cartridges	8	\$3,120.00	\$3,120.00			3.00
XM-100 Product L	9	\$312.00	\$312.00			0.30
Power Supply	3	\$30,812.00	\$30,812.00			29.63
XM-500	2	\$45,547.53	\$8,561.00	260.00	260.00	175.18
Setting Up	1	\$19,259.26				74.07
Scheduling	2	\$11,818.18				45.45
Inspecting	3	\$5,909.09				22.73
CD Cartridges	8	\$780.00	\$780.00			3.00
XM-500 Product L	10	\$78.00	\$78.00			0.30
Power Supply	3	\$7,703.00	\$7,703.00			29.63
Power Supply	3	\$38,515.00	\$8,515.00		1,300.00	29.63
Assembling	4	\$30,000.00				23.08
Power Cord	11	\$2,925.00	\$2,925.00			2.25
Transformer	12	\$5,590.00	\$5,590.00			4.30

3. Save the model.

Verifying the calculation results

By looking at the Costs column in the Cost Object module, you can see that the XM-100 product consumed \$67,257.47 of the Tyler Electronics Quarter 1 production expenses during Quarter 1 and the XM-500 product consumed \$45,547.53. These totals include:

- Amount of activity cost each product consumed owing to the activity driver quantities assigned
- Cost of external and internal bills of costs attached to each product

Activity-based costing assigns the \$100,000 of production costs to each activity according to the resource driver assignments and quantities:

Setting Up	\$40,000 (40%)
Scheduling	\$20,000 (20%)
Inspecting	\$10,000 (10%)
Assembling	\$30,000 (30%)

The products (cost objects) consume activities, and related activity costs, according to the activity driver assignments and quantities:

Setting Up:	XM-100	14 setups
	XM-500	13 setups
Scheduling:	XM-100	9 lots
	XM-500	13 lots
Inspecting:	XM-100	9 lots
	XM-500	13 lots
Assembling:	Power Supply	100%

The external bills of costs attached to the products include:

CD Cartridge and XM-100 Product Label	XM-100	\$3.30
CD Cartridge and XM-500 Product Label	XM-500	\$3.30

The internal bills of costs attached to the products include:

Transformer and Power Cord	Power Supply	XM-100 and XM-500	\$6.55
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The application calculates cost as follows:

Activity	XM-100	XM-500
Setting Up	14 setups times \$40,000	13 setups times \$40,000
Scheduling	9 lots times \$20,000	13 lots times \$20,000
Inspecting	9 lots times \$10,000	13 lots times \$10,000
Production Sub Total	\$33,013.47	\$36,986.53
Bill of Cost	XM-100	XM-500
Assembling	1,040 units times \$30,000	260 units times \$30,000
Power Supply	1,040 units times \$8,515	260 units times \$8,515

Power Supply Sub Total	\$30,812.00	\$7,703.00
CD Cartridges	1,040 units @ \$3.00 each	260 units @ \$3.00 each
Product Labels	1,040 units @ \$0.30 each	260 units @ \$0.30 each
Package Sub Total	\$3,432.00	\$858.00
	XM-100	XM-500
Total Manufacturing Cost	\$67,257.47	\$45,547.53
Unit Cost	XM-100	XM-500
	\$67,257.47/1,040 units	\$45,547.53/260 units
Total Unit Cost	\$64.67	\$175.18

In the next lesson

Now is an appropriate time to compare activity-based costing and traditional costing methods as these affect Tyler Electronics business decisions.

Activity-based costing vs. traditional costing

The key to the difference between ABC and traditional costing methods lies in the ABC drivers.

Activity-based costing (ABC) relates resources through activities to product cost. Resource drivers relate how general ledger costs or expenditures are attached and apportioned to work activities. Activity drivers relate how the products produced, services performed, and customers served consume work activities and attached general ledger expenditures.

The flow of costs through the two drivers determines the final company business cost and ultimate profitability.

Viewing production cost through an ABC perspective can have a dramatic effect on company business practices.

This lesson addresses:

- ❑ Activity-based costing and traditional costing
- ❑ ABC summary

Activity-based costing and traditional costing

The following table compares Tyler Electronics production costs from an activity-based and a traditional costing perspective.

Activity-based costing vs. traditional costing

Traditional method	XM-100	XM-500	Total
Output quantity	1,040	260	
Total production support cost (direct labor cost only)	\$70,000.00	\$30,000.00	\$100,000.00
Production support cost per unit: XM-100 = \$70,000 / 1,040 units XM-500 = \$30,000 / 260 units	\$67.31	\$115.38	
Activity-based costing method	XM-100	XM-500	Total
Output quantity	1,040	260	
Activity-based costing method Total cost including materials	\$67,257.47	\$45,547.53	\$112,805.00
Less materials cost (not included in traditional method)	(10,244.00)	(2,561.00)	
Total production support cost	\$57,013.47	\$42,986.50	\$100,000.00
Production support cost per unit: XM-100 = \$57,013 / 1,040 units XM-500 = \$42,986 / 260 units	\$54.82	\$165.33	
Percent Difference (ABC vs. Traditional)	-18.6%	43.3%	

Tyler Electronics traditional cost management system assigned cost based on percentage of direct labor cost attached to production. Tyler used a direct labor pro rata share of 70% for the XM-100 products and 30% for the XM-500 products.

Comparing the activity-based cost assignment to the traditional cost assignment, it is apparent that the XM-100 product consumes much less production support cost whereas the XM-500 product consumes considerably more.

The ABC analysis more accurately reflects the true and relevant costs of producing the two products for the period. Tyler Electronics can use this information to support meaningful decisions about product mix, enhancements, pricing, and the strategic management of the company.

Before making any decisions, Tyler Electronics will enhance and complete their activity-based costing model. If current trends continue, it appears that the Tyler traditional production support cost for the XM-100 and XM-500 products will be misleading.

ABC summary

Activity-based costing provides information that more accurately reflects incurred costs. All production costs are assigned on the basis of consumption of activities performed then are based on actual resource expenditures. Contrast this with traditional cost systems that assign costs on the basis of indirect, unrelated, or arbitrary measures.

For example, product costs that accurately reflect incurred costs reduce the possibility that prices are set incorrectly or that unprofitable products are sold aggressively.

In addition to product costing, you can use activity-based costing to:

- Pinpoint the causes of cost
- Determine the costs of activities and processes
- Analyze activities or policies that cause costs
- Examine closely all the resource costs of your company
- Scrutinize how company expenditures are assigned to activities and products
- Estimate the cost of new products
- Analyze business processes
- Calculate the cost impact of proposed process improvements
- Analyze value-added and non value-added activities in processes
- Analyze quality

In addition to providing strategic information for manufacturing enterprises, the application supports activity analysis in service businesses and organizations, process industries, engineering projects, and many other areas of commerce.

In the next lesson

In the next lesson, you will build a scorecard to determine whether you are measuring and communicating your strategic goals. When these elements have been defined and implemented, and with the company scorecard in place, company goals can be prioritized, aligned, and effectively focused into a coherent system.

Developing a scorecard

A scorecard is a performance management tool to measure and communicate strategic goals. Organizations use this tool to align the performance efforts of each department with goals defined for the company and to integrate their strategic plan into the fiber of the company.

By building a scorecard, management can express corporate strategic goals as a set of measurable financial and non-financial objectives. A scorecard increases the management effectiveness in accomplishing company goals by enhancing the transition from strategic objectives to tactics to results.

A scorecard can:

- Foster communication among employees
- Measure successes against strategies and objectives
- Align and focus team efforts while the opportunity to improve exists
- Focus proper resources on the necessary activities to realize company strategies
- Increase organizational efficiency
- Form the basis for reviews to reduce risk

Building and using the scorecard produces a tangible reporting system for translating strategy into action.

This lesson addresses:

- Identifying scorecard elements
- Defining strategies and objectives
- Building the Scorecard module structure
- Deleting columns from the view
- Ranking and weighting strategies and objectives
- Measuring accomplishments
- Defining meters
- Assigning meters using the Scorecard Wizard

Identifying scorecard elements

To build a company scorecard, certain fundamental elements are necessary:

1. A set of strategy-based objectives expressed in measurable terms
2. Performance data based on data being tracked by the company
3. A reporting and analysis tool

When these elements have been defined and implemented, and with the company scorecard in place, company goals can be prioritized, aligned, and effectively focused into a coherent system. The gap between the company mission and the day-to-day activities the company performs narrows. World-class improvement and achievement using performance measures becomes the company standard.

Defining strategies and objectives

Once the company mission is established, the strategies and objectives by which the company will achieve its mission are defined.

The Tyler Electronics mission: High performance CD products from a high performance company.

Based on this mission, Tyler has defined the following strategies:

- Build high-quality products
- Deliver cost-effective products



Building the Scorecard module structure

You begin building the Scorecard module by adding your company's strategies and the objectives to meet those strategies.

Adding strategies

Before adding the first strategy, you must make the Scorecard module active.

➤ Add a strategy

1. Select **Modules > Scorecard Module**, or click  on the toolbar.
You see the Scorecard module open.
2. Select **Edit > Create Strategy**, or click  on the toolbar.
You see a new strategy named Strategy1 added to the module.
3. Double-click the name **Strategy1**.
4. Type **Deliver Cost-Effective Products**.

5. Press **Enter**.
To view the entire strategy name, click and drag the right edge of the Name column.
6. Select the **Scorecard Module Summary**.
Note: Strategies and objectives are added below the selected objective or strategy. When adding a strategy or objective, select the strategy or objective to which the new strategy or objective belongs. The new strategy or objective is added to the top of the selected strategy or objective list. You can re-order the strategies and objectives later by dragging them.
7. Use the procedure you just learned to add another strategy named **Build High-Quality Products**.

Name	S	Score	W	Stretch	Inactive	Cancel	Override	Approve	Potential
Scorecard		0.00							
Build High-Quality Products		-2.00							
Develop Cost-Effective Products		-2.00							

8. Save the model.

Adding objectives

Having defined the company strategies, objectives must be developed to support the overall strategies.


Note: Oros Quick is limited to six objectives in the Scorecard module. More than six objectives can be created but then the model cannot be saved.


Tyler has defined the following objectives:

- Control the cost to produce XM-100 and XM-500 CDs to no more than 95% of budget during each operating period
- Setting up the XM-100 production run will not exceed 33 minutes
- Setting up the XM-500 production run will not exceed 56 minutes
- Inspections will result in an average of less than 1.5 rejected CDs per 10 lots
- The XM-100 and XM-500 will receive the ‘Best-in-Industry’ award

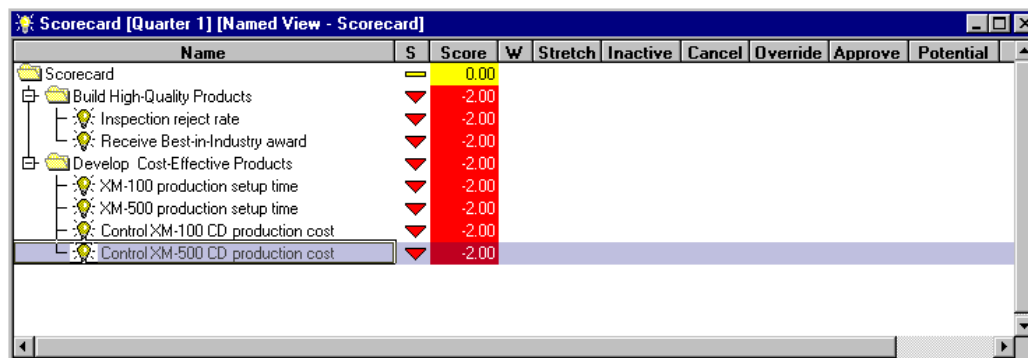
Now, you will create six objectives for the Tyler Electronics model.

➤ Add an objective

1. Select the **Build High-Quality Products** strategy.
2. Select **Edit > Create Objective**, or click  on the toolbar.
3. Double-click **Objective1**.
4. Type **Receive Best-in-Industry award**.
5. Press **Enter**.
6. Use the procedure you just learned to another objective named **Inspection reject rate**.

7. Select the **Deliver Cost-Effective Products** strategy.
8. Click  four times.
9. Double-click **Objective3**.
10. Type **XM-100 production setup time**.
11. Repeat steps 9 and 10 to rename the remaining objectives as follows:

Objective
XM-500 production setup time
Control XM-100 CD production cost
Control XM-500 CD production cost



12. Save the model.

Deleting columns from the view

When you select the Scorecard module, a default scorecard view is loaded. For now, you will delete columns from this view. In the next lesson, you will add new columns and create a new view.

➤ Delete a column

1. Right-click the column heading titled **W**.
You see a pop-up menu.
2. Select **Delete Column**.
3. Press **Shift** and click the remaining columns to the right to select them.

4. Press **Delete**.

You see just the Name, Score icon, and Score property columns remain.

The screenshot shows a window titled "Scorecard [Quarter 1] [Named View -]". It displays a tree view of objectives and their scores. The table below represents the data shown in the screenshot:

Name	S	Score
Scorecard	—	0.00
Build High-Quality Products	▼	-2.00
Inspection reject rate	▼	-2.00
Receive Best-in-Industry award	▼	-2.00
Develop Cost-Effective Products	▼	-2.00
XM-100 production setup time	▼	-2.00
XM-500 production setup time	▼	-2.00
Control XM-100 CD production cost	▼	-2.00
Control XM-500 CD production cost	▼	-2.00

Ranking and weighting strategies and objectives

Now that you have defined and created strategies and objectives you must be rank and weight them.

Ranking and weighting prioritizes strategies and objectives. Prioritizing strategies and objectives allows management to:

- Reflect strategic importance
- Influence the relative importance of each objective
- Compare strategic hierarchies logically
- Focus and allocate resources to achieve company goals

Displaying ranks and weights

By default, the scorecard is set up with four descriptive rank properties and four accompanying numerical weight properties. You view ranks and weights assigned to objectives by adding the ranking and weighting properties to the Scorecard module as columns.

➤ Display ranks and weights

1. In the **Scorecard** module, double-click the blank heading on the column-heading bar.
You see the Add Column dialog box.
2. Click the **Scorecard** tab.
3. From the **Property** drop-down list, select **Ranking**.
4. Click **Add**.
5. From the **Property** drop-down list, select **Weighting**.
6. Click **Add**.

- Click **Close**.

You see that the default rank, Business as usual, and a default weight are assigned to all strategies and objectives.

Name	S	Score	Ranking	Weighting
Scorecard		0.00		100.00%
Build High-Quality Products	▼	-2.00	Business as usual	50.00%
Inspection reject rate	▼	-2.00	Business as usual	50.00%
Receive Best-in-Industry award	▼	-2.00	Business as usual	50.00%
Develop Cost-Effective Products	▼	-2.00	Business as usual	50.00%
XM-100 production setup time	▼	-2.00	Business as usual	25.00%
XM-500 production setup time	▼	-2.00	Business as usual	25.00%
Control XM-100 CD production cost	▼	-2.00	Business as usual	25.00%
Control XM-500 CD production cost	▼	-2.00	Business as usual	25.00%

Assigning ranks and weights

There are two ways to assign ranks and weights to objectives:

- Use the ranking table
- Enter weights directly as percentages

The ranking table

The ranking table provides a way to assign preset ranks and values to strategies and objectives. The table contains four preset descriptions and values, which can remain as defined or can be customized.

➤ Use the ranking table

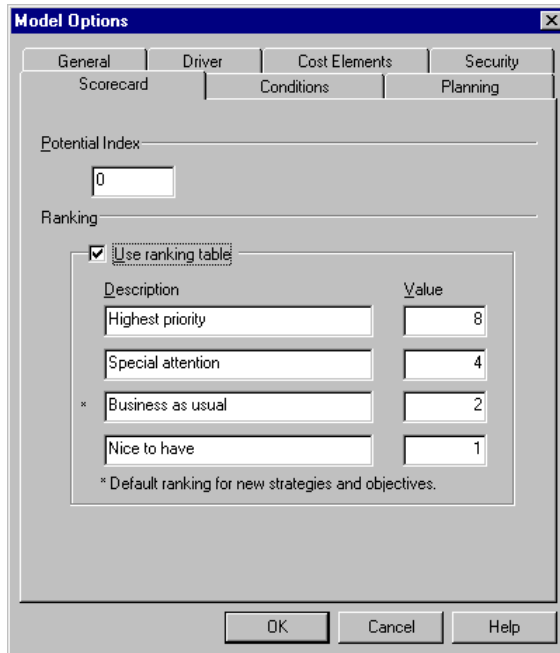
- Select **Model > Options**.

You see the Model Options dialog box.

- Click the **Scorecard** tab.

By default, Use ranking table is selected.

Note: The Description and its associated Value (marked with an asterisk) is the default for new strategies and objectives.



- Click **OK**.

➤ Assign weights and ranks using the ranking table

- Click the **Ranking** column cell for the **Inspection reject rate** objective.

Name	S	Score	Ranking	Weighting
Scorecard		0.00		100.00%
Build High-Quality Products		-2.00	Business as usual	50.00%
Inspection reject rate		-2.00	Business as usual	50.00%
Receive Best-in-Industry award		-2.00	Business as usual	50.00%
Develop Cost-Effective Products		-2.00	Business as usual	50.00%
XM-100 production setup time		-2.00	Business as usual	25.00%
XM-500 production setup time		-2.00	Business as usual	25.00%
Control XM-100 CD production cost		-2.00	Business as usual	25.00%
Control XM-500 CD production cost		-2.00	Business as usual	25.00%

- Select **Highest priority** from the drop-down list.
You see the Weighting column value for Inspection reject rate change to 80%.
- Click the **Ranking** column cell for the **Receive Best-in-Industry award** objective.

4. Select **Nice to have** from the drop-down list.

You see the Weighting column value for Receive Best-in-Industry award change to 11.11% and the Inspection reject rate change to 88.89%. Because you are using the ranking table, the weight values automatically adjust according to the assigned ranking.

5. Use the procedure you just learned to assign the following rankings to the objectives for the **Deliver Cost-Effective Products** strategy:

Objectives	Ranking
XM-100 production set up time	Special attention
XM-500 production set up time	Special attention
Control XM-100 CD production cost	Highest priority
Control XM-500 CD production cost	Highest priority



6. Save the model.

➤ **Assign weights directly as percentages**

1. Select **Model > Options**.

You see the Model Options dialog box.

2. Select the **Scorecard** tab.
3. Clear **Use ranking table**.
4. Click **OK**.
5. Click the **Weighting** column cell for the **Inspection reject rate** objective.
6. Type **85** to replace the 88.89 calculated percentage.
7. Press **Enter**.
8. Click the **Weighting** column entry for the **Receive Best-in-Industry award** objective.
9. Type **15** to replace the 11.11 calculated percentage.

10. Press **Enter**.

Name	S	Score	Ranking	Weighting
Scorecard	—	0.00		100.00%
Build High-Quality Products	▼	-2.00	Business as usual	50.00%
Inspection reject rate	▼	-2.00	Highest priority	85.00%
Receive Best-in-Industry award	▼	-2.00	Nice to have	15.00%
Deliver Cost-Effective Products	▼	-2.00	Business as usual	50.00%
XM-100 production setup time	▼	-2.00	Special attention	16.67%
XM-500 production setup time	▼	-2.00	Special attention	16.67%
Control XM-100 CD production cost	▼	-2.00	Highest priority	33.33%
Control XM-500 CD production cost	▼	-2.00	Highest priority	33.33%

11. Save the model.

The total weight for all strategies and objectives is always 100%. Because Tyler Electronics defined two company strategies, a 50% weighting was assigned to each.

For the Deliver Cost-Effective Products strategy objectives, you assigned weights using the ranking table. Within the Build High-Quality Products strategy, there are two objectives. You directly assigned weights that totaled 100%. However, weights totaling less than 100% could have been assigned.

If you inadvertently enter weight percentages that results in the total weight percentage for all objectives to exceed 100%, after you calculate the model, these percentages will adjust so that they equal 100%.

Measuring accomplishments

Strategies and objectives have been defined, created, weighted, and ranked. Next, you need to measure whether the Tyler strategic objectives are being accomplished.

The scorecard measures accomplishment of objectives using meters, targets, and attributes. A meter translates a measurement into a score. Then, the score is normalized across a range and comparisons are made between the measurement and the target.

Meters

A meter compares different measures and translates the result into a score. The score is aligned with an index scale. The scorecard uses a scale from -2 to +2 and assigns one of four symbols to each range in the index.

The Scorecard index scale

1 to 2	
0 to <1	
-1 to <0	
-2 to <-1	

Types of meters

Type	Definition	Examples
Qualitative	Score is derived from an objective measure. This meter is based on qualitative data.	Completion status Yes/No measures
Absolute Numeric	Score is derived from a numeric property or attribute. This meter is based on numeric data.	Number of days Numeric score received
Calculated Numeric	Score is derived from a calculated attribute. This meter is based on numeric data.	Number of rejects per lot
Relative Numeric	Score is derived by determining the percentage of the objective measure to the objective target. This meter is based on numeric data.	Percentage of revenue Difference from target value

Targets

A target is a goal established for projected resources, activities, or cost objects. Targets are based on strategic objectives and are used to measure performance and generate scores for relative numeric meters. Defining meters

The accomplishments of Tyler Electronics will be evaluated using four types of meters: qualitative, absolute numeric, calculated numeric, and relative numeric. Targets are used with relative numeric meters only.

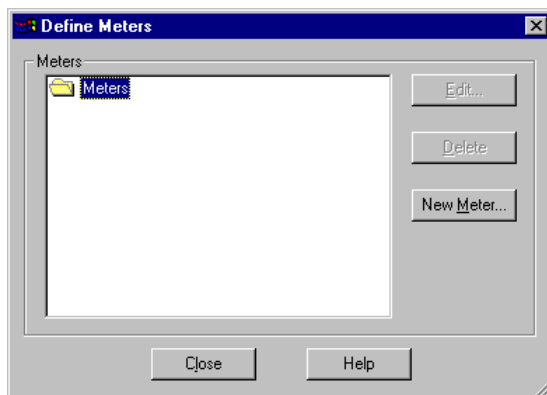
Defining meters

The accomplishments of Tyler Electronics will be evaluated using four types of meters: qualitative, absolute numeric, calculated numeric, and relative numeric. Targets are used with relative numeric meters.

➤ Create a qualitative meter

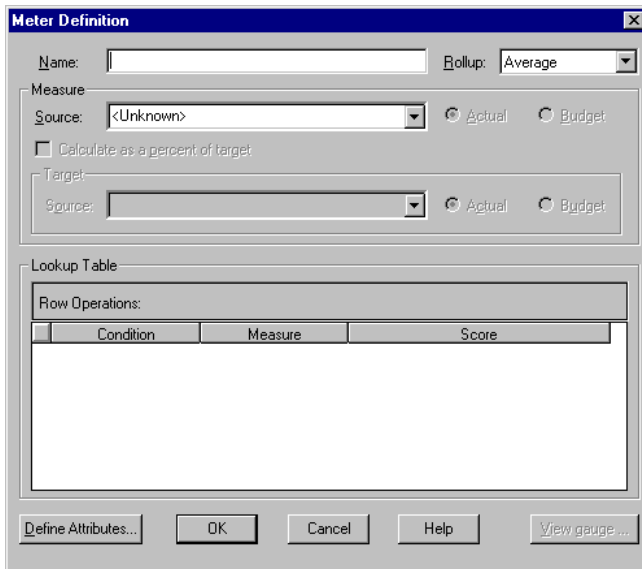
1. Select **Model > Define Meters**.

You see the Define Meters dialog box.



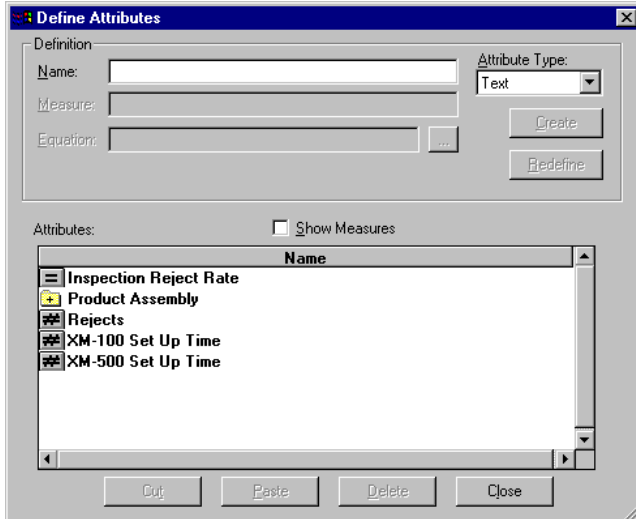
2. Click **New Meter**.

You see the Meter Definition dialog box.



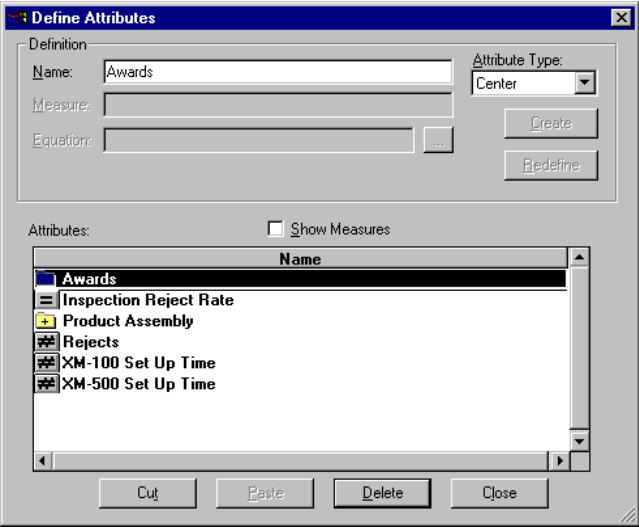
3. In the **Name** text box, type **Awards**.
4. Click **Define Attributes**.

You see the Define Attributes dialog box.



5. In the **Name** text box, type **Awards**.
6. From the **Attribute Type** drop-down list, select **Center**.
7. Click **Create**.

The attribute center Awards is added to the Attributes list.

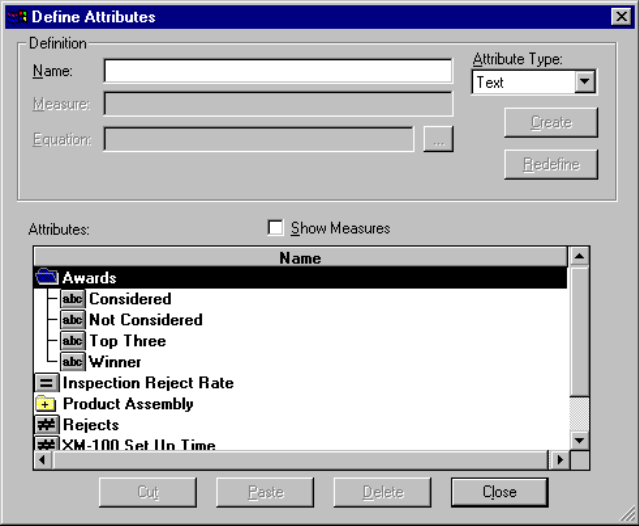


- 8. In the **Attributes** list, select **Awards** so that you can add attributes to the center.
- 9. In the **Name** text box, type **Winner** to replace **Awards**.
- 10. From the **Attribute Type** drop-down list, select **Text**.
- 11. Click **Create**.

The attribute Winner is added to the Awards center.

- 12. Use the procedure you just learned to add three more text attributes named:

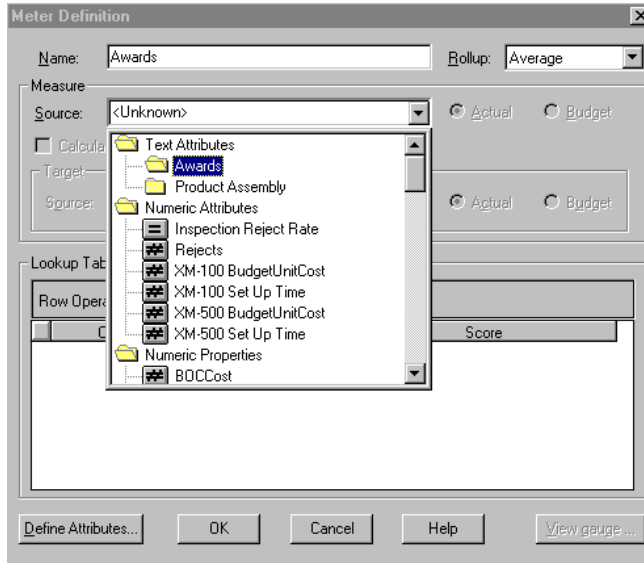
Top Three
Considered
Not Considered



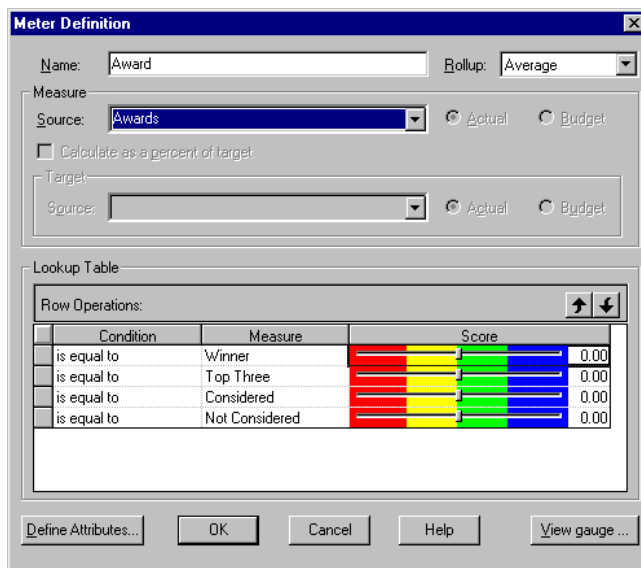
13. Click **Close**.

You see the Meter Definition dialog box.

14. From the **Source** drop-down list in the **Measure** section, double-click **Awards**.



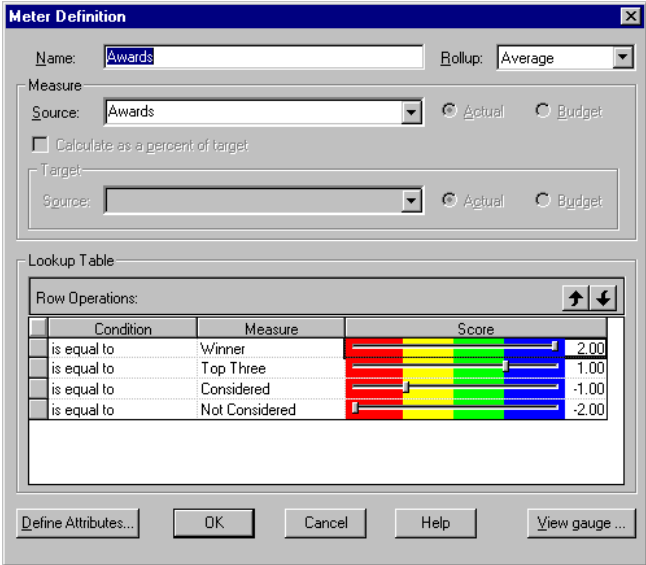
You see the meter condition, measure, and score values appear in the Lookup Table section.



15. In the **Lookup Table** section, double-click the **Score** cell for the **Winner** measure.

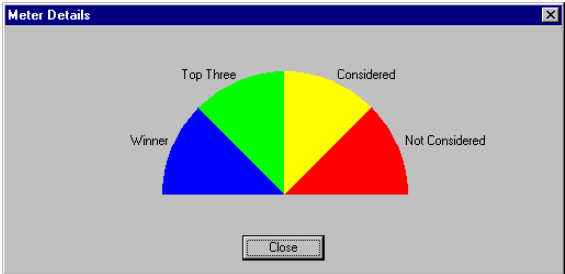
16. Type **2** and press **Enter**.

17. Use the procedure you just learned to add the scores as shown in the following illustration.



18. Click **View gauge**.

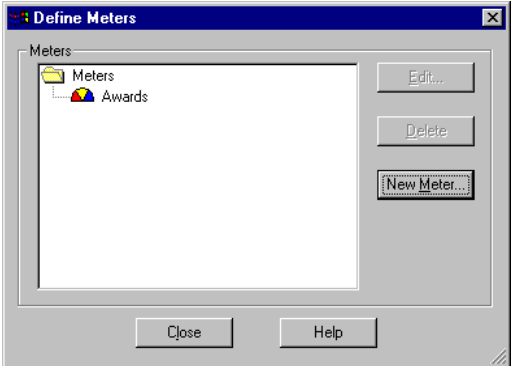
You see the Awards scorecard meter as a gauge.



19. Click **Close**.

20. Click **OK**.

You see the Define Meters dialog box, which now contains a new meter named Awards.



➤ **Create an absolute numeric meter**

1. Click **New Meter**.

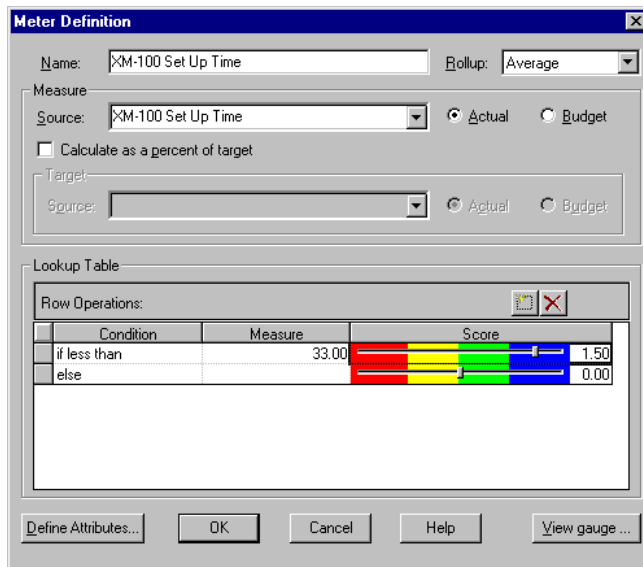
You see the Meter Definition dialog box.


2. In the **Name** text box, type **XM-100 Set Up Time**.
3. From the **Source** drop down list, double-click the numeric attribute **XM-100 Set Up Time**.
4. In the **Lookup Table** section, double-click the **Measure** cell for the **if less than** condition.
5. Type **33** and press **Enter**.

The cursor moves to the Score cell for the if less than condition.

6. Type **1.5** and press **Enter**.

You see the following meter definition.



7. Click  to create a new meter condition.

The cursor moves to the Measure cell for the new else if less than condition.

8. Type **40** and press **Enter**.

The cursor moves to the Score cell for the else if less than condition.

9. Type **.5** and press **Enter**.

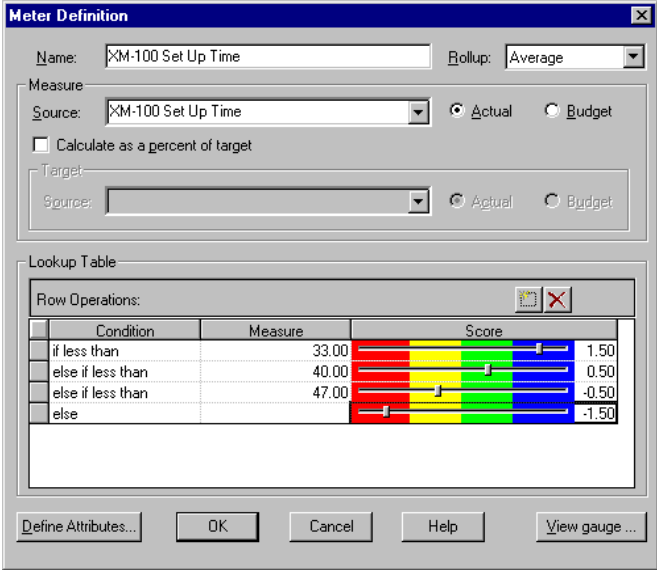
10. Use the procedure you just learned to create another **else if less than** condition with the values:

Measure	Score
47	-.5

11. Double-click the **Score** cell for the **else** condition.

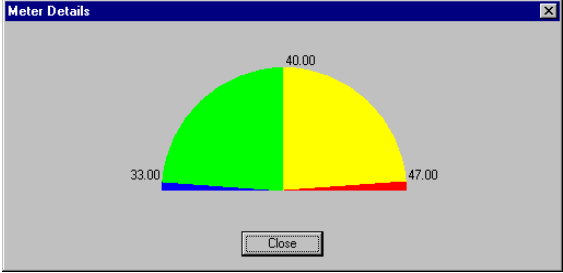
12. Type **-1.5** and press **Enter**.

You see the following meter definitions.



13. Click **View gauge**.

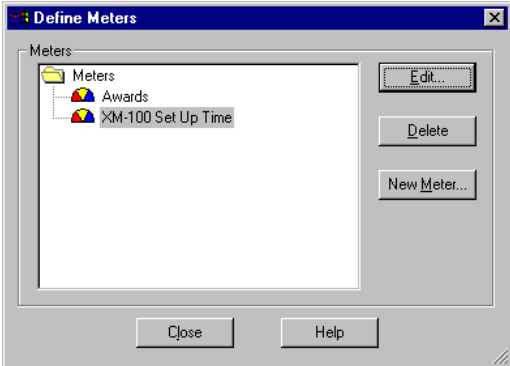
You see the XM-100 Set Up Time meter displayed as a gauge.



14. Click **Close**.

15. Click **OK**.

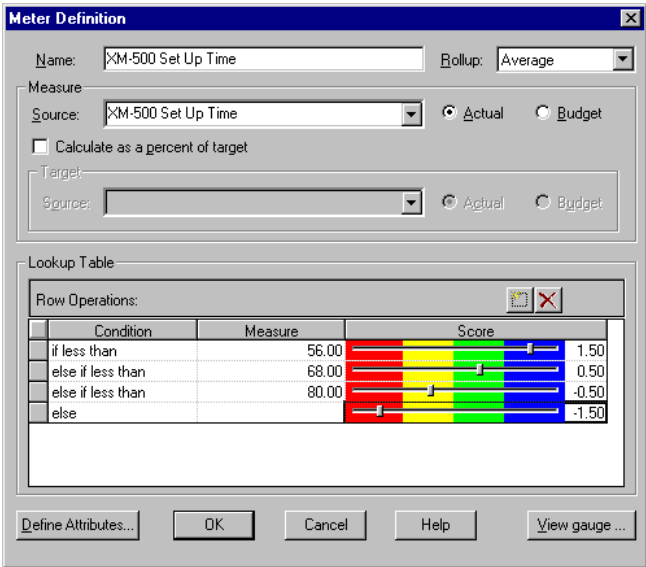
You see the Define Meters dialog box, which contains a new meter named XM-100 Set Up Time.



16. Use the procedure you just learned to create another absolute numeric meter as follows:

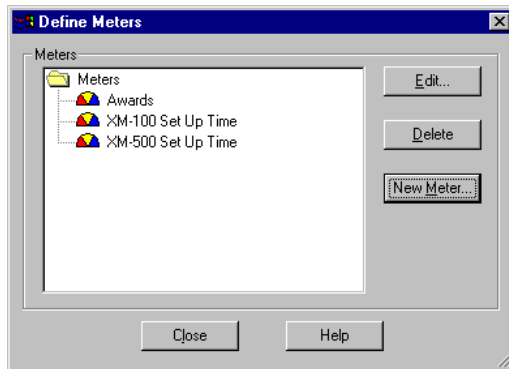
Name	Source
XM-500 Set Up Time	XM-500 Set Up Time

Create the measures and scores for the **XM-500 Setup Time** meter as shown in the following illustration.



- Click **OK** to close the **Meter Definition** dialog box.

You see the Define Meters dialog box, which contains a new meter named XM-500 Set Up Time.



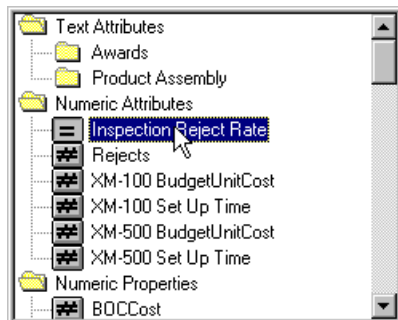
➤ **Create a calculated numeric meter**

- Click **New Meter**.

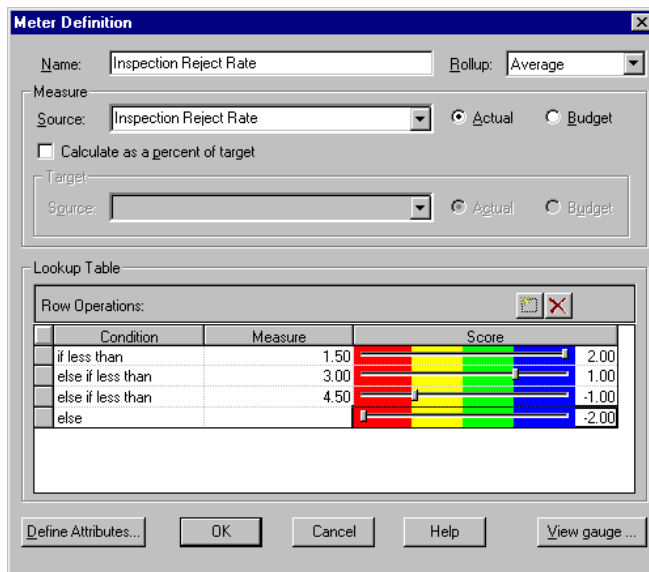
You see the Meter Definition dialog box.

- In the **Name** text box, type **Inspection Reject Rate**.
- From the **Source** drop-down list, double-click the numeric attribute **Inspection Reject Rate**.

The equal sign next to the attribute name indicates this is a calculated numeric attribute.

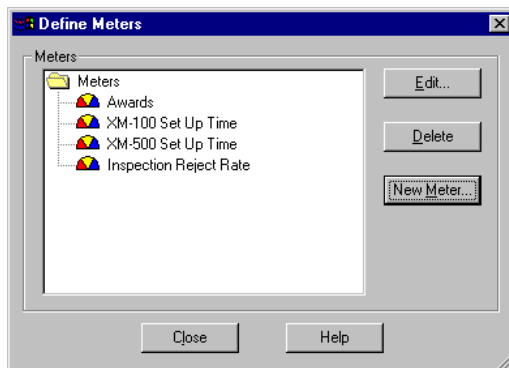


4. Create the **Inspection Reject Rate** calculated numeric meter measures and scores as shown in the following illustration.



5. Click **OK**.

You see the Define Meters dialog box, which contains a new meter named Inspection Reject Rate.



➤ **Create a relative numeric meter for the XM-100 product**

1. Click **New Meter**.

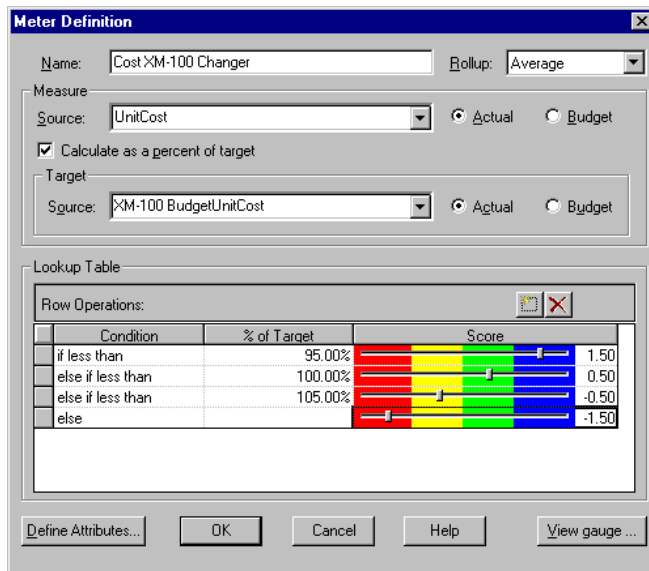
You see the Meter Definition dialog box.

2. In the **Name** text box, type **Cost XM-100 CD Changer**.
3. From the **Source** drop-down list, double-click the numeric property **UnitCost**.
4. Select **Calculate as a percent of target**.
5. Click **Define Attributes**.
6. In the **Name** text box, type **XM-100 BudgetUnitCost**.

7. From the **Attribute Type** drop-down list, select **Numeric**.
8. In the **Measure** text box, type **dollars per unit**.
9. Click **Create** then click **Close**.

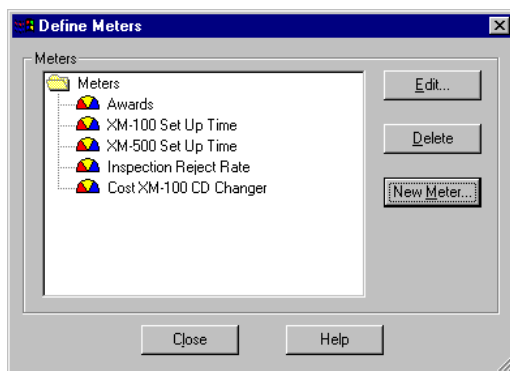
You see the Meter Definition dialog box.

10. From the **Target** section **Source** drop-down list, double-click the numeric attribute **XM-100 BudgetUnitCost**.
11. Create the **Cost XM-100 CD Changer** calculated numeric meter measures and as shown in the following illustration.



12. Click **OK**.

You see the Define Meters dialog box, which contains a new meter named Cost XM-100 CD Changer.



➤ **Create a relative numeric meter for the XM-500 product**

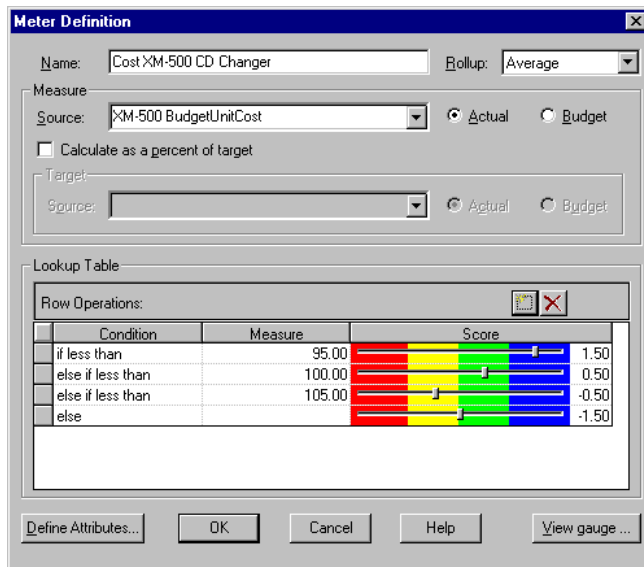
1. Click **New Meter**.

You see the Meter Definition dialog box.

2. In the **Name** text box, type **Cost XM-500 CD Changer**.
3. From the **Source** drop-down list, double-click the numeric property **UnitCost**.
4. Select **Calculate as a percent of target**.
5. Click **Define Attributes**.
6. In the **Name** text box, type **XM-500 BudgetUnitCost**.
7. From the **Attribute Type** drop-down list, select **Numeric**.
8. In the **Measure** text box, type **dollars per unit**.
9. Click **Create** then click **Close**.

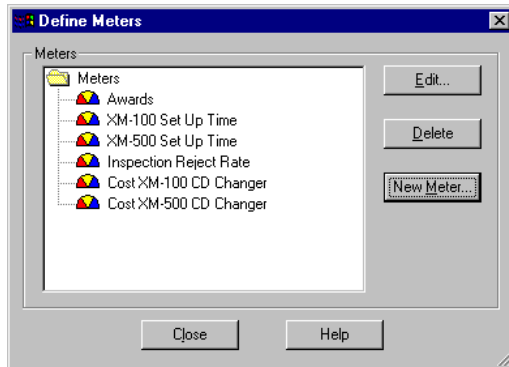
You see the Meter Definition dialog box.

10. From the **Target** section **Source** drop-down list, double-click the numeric attribute **XM-500 BudgetUnitCost**.
11. Create the **Cost XM-500 CD Changer** calculated numeric meter measures and as shown in the following illustration.



12. Click **OK**.

You see the Define Meters dialog box, which contains a new meter named Cost XM-500 CD Changer.



13. Click **Close**.

14. Save the model.

Assigning meters using the Scorecard Wizard

Once you have established objectives and meters, you can use the Scorecard Wizard to create an association between objectives, meters, and source accounts. With the Scorecard Wizard you can:

- Assign attributes directly to objectives without having to make an account association
- Create a new account as a source for an objective
- Select an existing account as a source for an objective

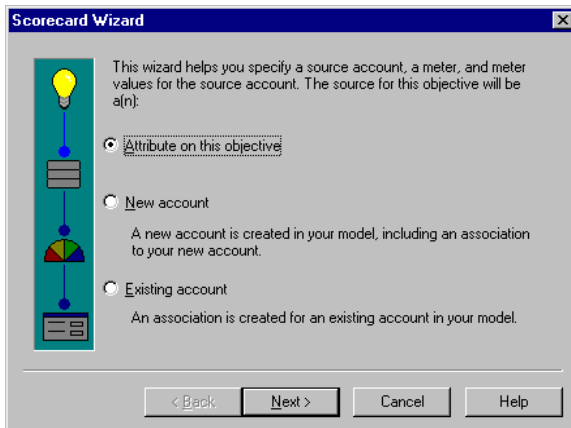
Note: You can also use the Scorecard Wizard to create a new meter; however, this procedure is not addressed in this tutorial.

Next, you will use the Scorecard Wizard to associate existing accounts with the meters and targets you just created.

➤ **Assign the meter for the Inspection reject rate objective**

1. Select the **Inspection reject rate** objective.
2. Select **Tools > Scorecard > Scorecard Wizard**.

You see the first Scorecard Wizard dialog box.



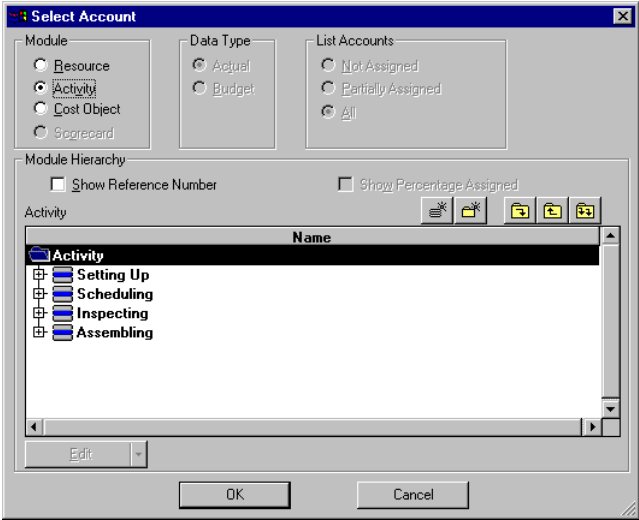
3. Select **Existing account**.
4. Click **Next**.

You see the second Scorecard Wizard dialog box.



5. Click **Select Account**.

You see the Select Account dialog box.



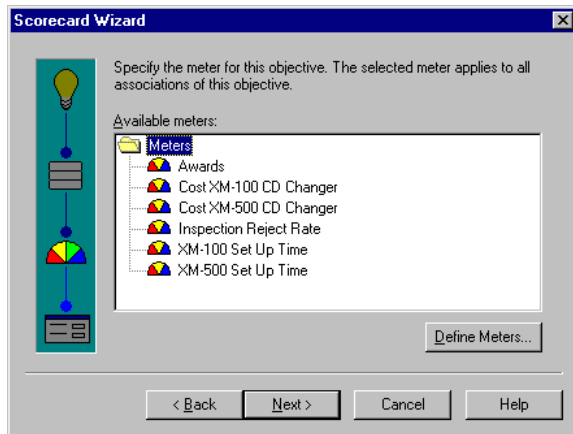
- 6. Select the **Inspecting** activity.
- 7. Click **OK**.

You see the Scorecard Wizard.



8. Click **Next**.

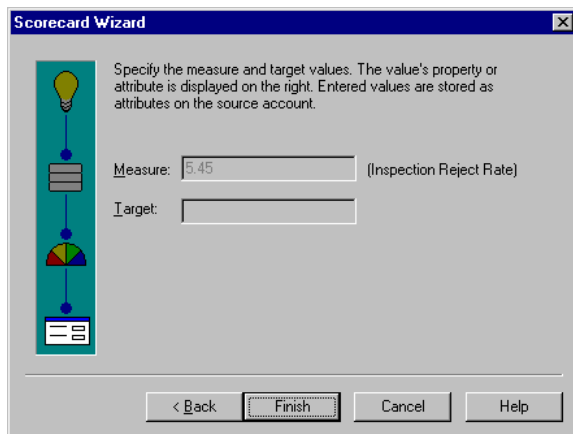
You see the next Scorecard Wizard dialog box.



9. Select **Inspection Reject Rate**.

10. Click **Next**.

You see the final Scorecard Wizard dialog box.



11. Click **Finish**.

- Expand the **Inspection Reject Rate** objective.

You see that the Inspecting activity has been added to the objective.

Name	S	Score	Ranking	Weighting
Scorecard	—	0.00		100.00%
Build High-Quality Products	▼	-2.00	Business as usual	50.00%
Inspection reject rate	▼	-2.00	Highest priority	85.00%
Inspecting	▼	-2.00	Nice to have	15.00%
Receive Best-in-Industry award	▼	-2.00	Nice to have	15.00%
Deliver Cost-Effective Products	▼	-2.00	Special attention	16.67%
XM-100 production setup time	▼	-2.00	Special attention	16.67%
XM-500 production setup time	▼	-2.00	Highest priority	33.33%
Control XM-100 CD production cost	▼	-2.00	Highest priority	33.33%
Control XM-500 CD production cost	▼	-2.00		

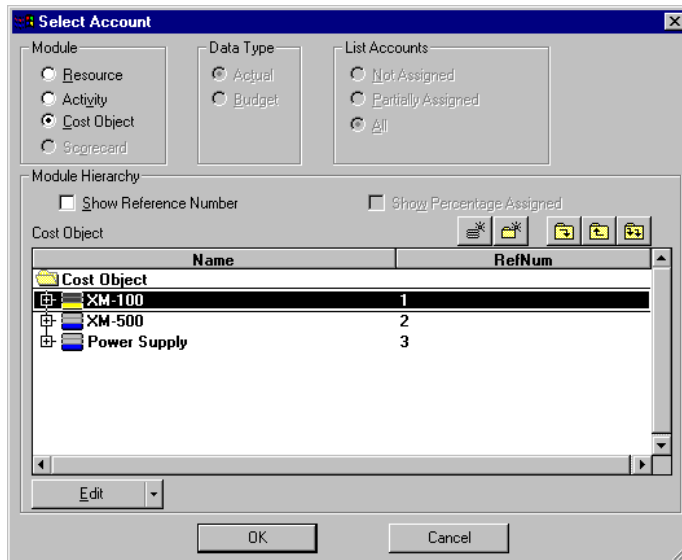
➤ **Assign the meter for the Receive Best-in-Industry award objective**

- Select the **Receive Best-in-Industry award** objective.
- Right-click **Tools > Scorecard > Scorecard Wizard**.

Note: In addition to selecting the Scorecard Wizard from the Tools menu, you can also open the Scorecard Wizard by right-clicking on an object and selecting Scorecard Wizard from the pop-up menu.

- Select **Existing account**.
- Click **Next**.
- Click **Select Account**.
- In the **Module** section, select **Cost Object**.

- In the **Cost Object** list, select **XM-100**.



- Click **OK**.
- Click **Next**.
- Select the **Awards** meter from the **Available meters** list.
- Click **Next**.
- From the **Measure** drop-down list, select **Winner**.
- Click **Finish**.

The Scorecard Wizard closes and You see the Scorecard module.

- Expand the **Receive Best-in-Industry award** objective.

You see that the XM-100 account has been added to the objective.

Name	S	Score	Ranking	Weighting
Scorecard	—	0.00		100.00%
Build High-Quality Products	▼	-2.00	Business as usual	50.00%
Inspection reject rate	▼	-2.00	Highest priority	85.00%
Inspecting	▼	-2.00		
Receive Best-in-Industry award	▼	-2.00	Nice to have	15.00%
XM-100	▲	2.00		
Deliver Cost-Effective Products	▼	-2.00	Business as usual	50.00%
XM-100 production setup time	▼	-2.00	Special attention	16.67%
XM-500 production setup time	▼	-2.00	Special attention	16.67%
Control XM-100 CD production cost	▼	-2.00	Highest priority	33.33%
Control XM-500 CD production cost	▼	-2.00	Highest priority	33.33%

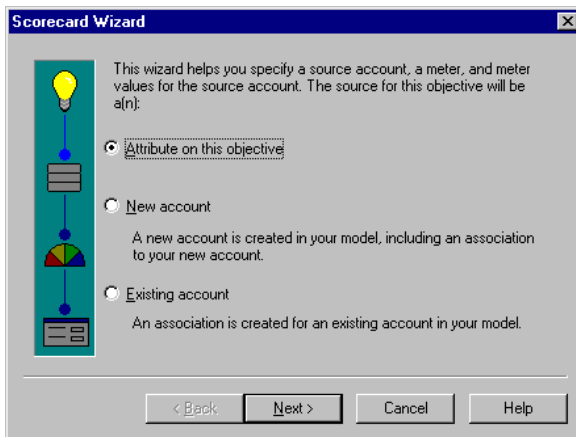
- Save the model.

16. Select **Tools > Scorecard > Scorecard Wizard**.

You see the final Scorecard Wizard dialog box for the Awards measure.

Note: Because the Receive Best-in-Industry award objective is still selected, the Scorecard Wizard returns you to the last step for its meter.

17. Click **Back** three times to return to the step in the **Scorecard Wizard** where you select the account type.



18. Select **Existing Account**.

19. Click **Next**.

20. Use the procedure you just learned to assign the **Awards** meter to the **XM-500** cost object with the **Measure** value of **Winner**.

Name	S	Score	Ranking	Weighting
Scorecard	—	0.00		100.00%
Build High-Quality Products	▼	-2.00	Business as usual	50.00%
Inspection reject rate	▼	-2.00	Highest priority	85.00%
Inspecting	▼	-2.00		
Receive Best-in-Industry award	▼	-2.00	Nice to have	15.00%
XM-100	▲	2.00		
XM-500	▲	2.00		
Deliver Cost-Effective Products	▼	-2.00	Business as usual	50.00%
XM-100 production setup time	▼	-2.00	Special attention	16.67%
XM-500 production setup time	▼	-2.00	Special attention	16.67%
Control XM-100 CD production cost	▼	-2.00	Highest priority	33.33%
Control XM-500 CD production cost	▼	-2.00	Highest priority	33.33%

➤ **Assign the meters for the Deliver Cost Effective Products objectives**

- Using what you learned in the previous procedure, add four more meters and cost objects to the objectives as follows:

Objective	Cost object	Meter	Measure
XM-100 production set up time	XM-100	XM-100 Set Up Time	33
XM-500 production set up time	XM-500	XM-500 Set Up Time	56
Control XM-100 CD production cost	XM-100	Cost XM-100 CD Changer	<blank>
Control XM-500 CD production cost	XM-500	Cost XM-500 CD Changer	<blank>

Note: No measure data is required for the Control XM-100 CD production cost and Control XM-500 CD production cost objectives because these measures are based on unit cost data already contained in the model.

Name	S	Score	Ranking	Weighting
Scorecard	—	0.00		100.00%
Build High-Quality Products	▼	-2.00	Business as usual	50.00%
Inspection reject rate	▼	-2.00	Highest priority	85.00%
Inspecting	▼	-2.00		
Receive Best-in-Industry award	▼	-2.00	Nice to have	15.00%
XM-100	▲	2.00		
XM-500	▲	2.00		
Deliver Cost-Effective Products	▼	-2.00	Business as usual	50.00%
XM-100 production setup time	▼	-2.00	Special attention	16.67%
XM-500 production setup time	▼	-2.00	Special attention	16.67%
Control XM-100 CD production cost	▼	-2.00	Highest priority	33.33%
Control XM-500 CD production cost	▼	-2.00	Highest priority	33.33%

- Expand the **Deliver Cost-Effective Products** strategy.

You see that the XM-100 cost object has been added to the XM-100 production setup time and Control XM-100 CD production cost objectives, and the XM-500 cost object has been added to the XM-500 production setup time and Control XM-500 CD production cost objectives.

Name	S	Score	Ranking	Weighting
Scorecard	—	0.00		100.00%
Build High-Quality Products	▼	-2.00	Business as usual	50.00%
Inspection reject rate	▼	-2.00	Highest priority	85.00%
Inspecting	▼	-2.00		
Receive Best-in-Industry award	▼	-2.00	Nice to have	15.00%
XM-100	▲	2.00		
XM-500	▲	2.00		
Deliver Cost-Effective Products	▼	-2.00	Business as usual	50.00%
XM-100 production setup time	▼	-2.00	Special attention	16.67%
XM-100	▲	1.50		
XM-500 production setup time	▼	-2.00	Special attention	16.67%
XM-500	—	-0.50		
Control XM-100 CD production cost	▼	-2.00	Highest priority	33.33%
XM-100	+	0.50		
Control XM-500 CD production cost	▼	-2.00	Highest priority	33.33%
XM-500	▼	-1.50		

3. Save the model.

In the next lesson

Now that the meters have been created, you are ready to assign the meters to the Scorecard objectives, calculate the module, and then analyze the results to assess whether Tyler Electronics is meeting its goals, strategies, and objectives.

Analyzing a scorecard

Activity-based costing not only uses cost to analyze business processes but also uses a scorecard. A scorecard enables a company to monitor progress toward its goals, strategies, and objectives.

This lesson addresses:

- Named views
- Changing meter measures and targets
- Calculating scorecard performance
- Analyzing scorecard results
- Creating a performance-based business scorecard

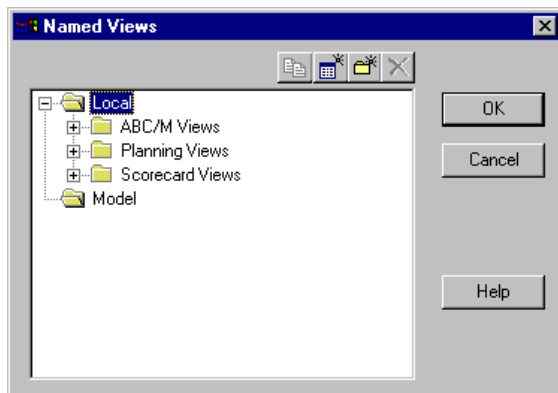
Named views

Named views allow you to quickly load and view properties you want to see. There are several named views provided for the Scorecard module. You can also create your own named view.

➤ Open named views

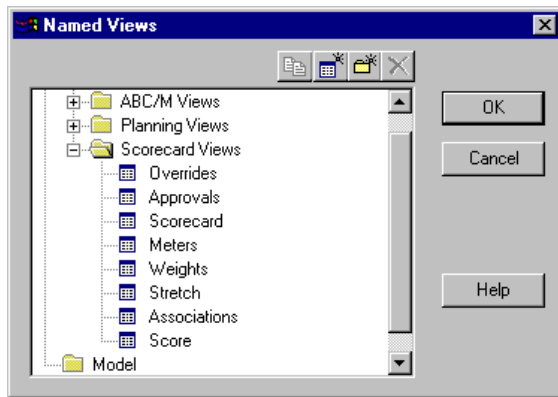
1. Select **View > Named Views**, or click  on the toolbar.

You see the Named Views dialog box.



- Expand the **Scorecard Views**.

You see a list of the views provided for the Scorecard module.



- Click **Cancel**.

Creating a named view for viewing scorecard performance

Scorecard performance can be displayed using four ABC model properties:

- Score
- Meter
- MeterMeasure
- MeterTarget

Note: Because the Score property is already a part of the view, you will not be adding this property.

➤ Create a new view

- Double-click the blank heading on the column-heading bar in the Scorecard module.
You see the Add Column dialog box.
- Click the **Scorecard** tab.
- From the **Property** drop-down list, select **Meter**.
- Click **Add**.
- From the **Property** drop-down list, select **MeterTarget**.
- Click **Format**.
You see the Format Column dialog box.
- In the **Alignment** section, select **Right**.
- Click **OK**.
- Click **Add**.
- Use the procedure you just learned to add the column named **MeterMeasure**.

- Click **Close**.

You see the Meter, MeterTarget, and MeterMeasure properties added as columns in the view.

Name	S	Score	Ranking	Weighting	Meter	MeterTarget	MeterMeasure
Scorecard		0.00		100.00%			
Build High-Quality Products		-2.00	Business as usual	50.00%			
Inspection reject rate		-2.00	Highest priority	85.00%	Inspection Reject Rate		
Inspecting		-2.00					5.45
Receive Best-in-Industry award		-2.00	Nice to have	15.00%	Awards		
XM-100		2.00					Winner
XM-500		2.00					Winner
Deliver Cost-Effective Products		-2.00	Business as usual	50.00%			
XM-100 production setup time		-2.00	Special attention	16.67%	XM-100 Set Up Time		
XM-100		0.50					33.00
XM-500 production setup time		-2.00	Special attention	16.67%	XM-500 Set Up Time		
XM-500		0.50					56.00
Control XM-100 CD production cost		-2.00	Highest priority	33.33%	Cost XM-100 CD Changer		
XM-100		1.50				0.00	64.67
Control XM-500 CD production cost		-2.00	Highest priority	33.33%	Cost XM-500 CD Changer		
XM-500		1.50				0.00	175.18

- Expand and collapse the width of the columns as needed.

- Save the model.


➤ Save the new view as a named view

- Select **View > Named Views**, or click  on the toolbar.

You see the Named Views dialog box.

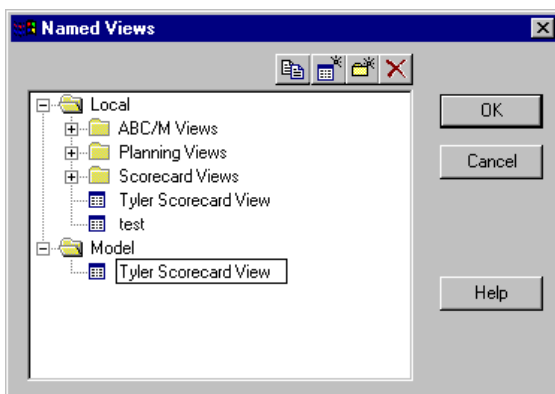
- Select **Model**.

Note: Saving your view into the Model folder saves the view as a part of the model.
Saving to local saves the view to your local hard drive.

- Click  to create a new view.

You see a new view named Named View1 added beneath the Model folder.

- Type **Tyler Scorecard View** to replace **Named View1**.



5. Press **Enter**.
6. Click **OK**.

You see the new view name in the Scorecard module title bar.

Name	S	Score	Ranking	Weighting	Meter	MeterTarget	MeterMeasure
Scorecard		0.00		100.00%			
Build High-Quality Products		-2.00	Business as usual	50.00%			
Inspection reject rate		-2.00	Highest priority	85.00%	Inspection Reject Rate		
Inspecting		-2.00					5.45
Receive Best-in-Industry award		-2.00	Nice to have	15.00%	Awards		
XM-100		2.00					Winner
XM-500		2.00					Winner
Deliver Cost-Effective Products		-2.00	Business as usual	50.00%			
XM-100 production setup time		-2.00	Special attention	16.67%	XM-100 Set Up Time		
XM-100		0.50					33.00
XM-500 production setup time		-2.00	Special attention	16.67%	XM-500 Set Up Time		
XM-500		0.50					56.00
Control XM-100 CD production cost		-2.00	Highest priority	33.33%	Cost XM-100 CD Changer	0.00	64.67
XM-100		1.50					
Control XM-500 CD production cost		-2.00	Highest priority	33.33%	Cost XM-500 CD Changer	0.00	175.18
XM-500		1.50					

Changing meter measures and targets

You can change meter measure data using the Scorecard Wizard. You can also add performance measure data for the meters.

➤ Change meter measure data using the Scorecard Wizard

1. If necessary, expand the **Receive Best-in-Industry award** objective hierarchy.
2. Select the **XM-100** account.
3. Select **Tools > Scorecard > Scorecard Wizard**.
You see the final step of the Scorecard Wizard.
4. Click **Back** three times to return to the step in the **Scorecard Wizard** where you select the account type.
5. Select **Existing Account**.
6. Click **Next** three times until you reach the final step of the **Scorecard Wizard**.
7. From the **Measure** drop-down list, select **Not Considered**.
8. Click **Finish**.
9. Use the procedure you just learned to change the **XM-500** account for the **Receive Best-in-Industry award** performance measure value to **Top Three**.
10. If necessary, expand the **XM-100 production setup time** objective hierarchy.
11. Select the **XM-100** account.
12. Select **Tools > Scorecard > Scorecard Wizard**.
13. In the **Measure** text box, change the performance measure value of 33 to **31**.
14. Click **Finish**.

- Use the procedure you just learned to change the **XM-500** account (within the **XM-500 production set up time objective**) performance measure value of 56 to **74**.

You see the changes reflected in the MeterMeasure column.

Name	S	Score	Ranking	Weighting	Meter	MeterTarget	MeterMeasure
Scorecard		0.00		100.00%			
Build High-Quality Products		-2.00	Business as usual	50.00%			
Inspection reject rate		-2.00	Highest priority	85.00%	Inspection Reject Rate		
Inspecting		-2.00					5.45
Receive Best-in-Industry award		-2.00	Nice to have	15.00%	Awards		
XM-100		-2.00					
XM-500		-1.00					Not Considered Top Three
Deliver Cost-Effective Products		-2.00	Business as usual	50.00%			
XM-100 production setup time		-2.00	Special attention	16.67%	XM-100 Set Up Time		
XM-100		1.50					31.00
XM-500 production setup time		-2.00	Special attention	16.67%	XM-500 Set Up Time		
XM-500		-0.50					74.00
Control XM-100 CD production cost		-2.00	Highest priority	33.33%	Cost XM-100 CD Changer		
XM-100		1.50				0.00	64.67
Control XM-500 CD production cost		-2.00	Highest priority	33.33%	Cost XM-500 CD Changer		
XM-500		1.50				0.00	175.18

- Save the model.

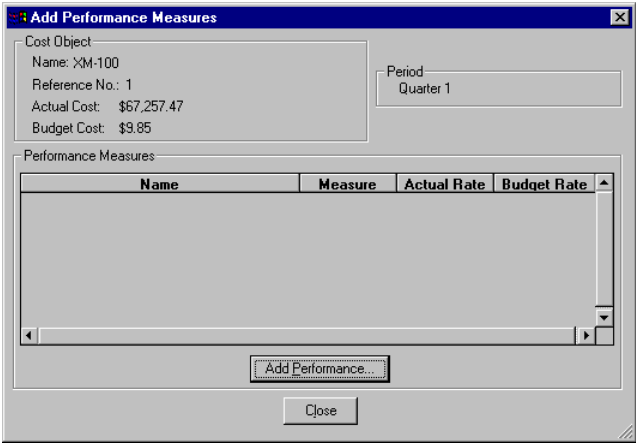
➤ Enter performance measure data

- Select the **XM-100** account from within the **Control XM-100 CD production cost** objective.

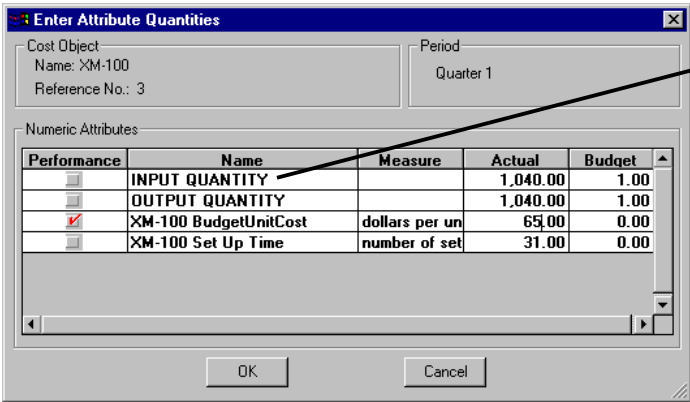
Name	S	Score	Ranking	Weighting	Meter	MeterTarget	MeterMeasure
Scorecard		0.00		100.00%			
Build High-Quality Products		-2.00	Business as usual	50.00%			
Inspection reject rate		-2.00	Highest priority	85.00%	Inspection Reject Rate		
Inspecting		-2.00					5.45
Receive Best-in-Industry award		-2.00	Nice to have	15.00%	Awards		
XM-100		-2.00					
XM-500		-1.00					Not Considered Top Three
Deliver Cost-Effective Products		-2.00	Business as usual	50.00%			
XM-100 production setup time		-2.00	Special attention	16.67%	XM-100 Set Up Time		
XM-100		1.50					31.00
XM-500 production setup time		-2.00	Special attention	16.67%	XM-500 Set Up Time		
XM-500		-0.50					74.00
Control XM-100 CD production cost		-2.00	Highest priority	33.33%	Cost XM-100 CD Changer		
XM-100		1.50				0.00	64.67
Control XM-500 CD production cost		-2.00	Highest priority	33.33%	Cost XM-500 CD Changer		
XM-500		1.50				0.00	175.18

- 2. Select **Edit > Add Performance Measures**.

You see the Add Performance Measures dialog box.



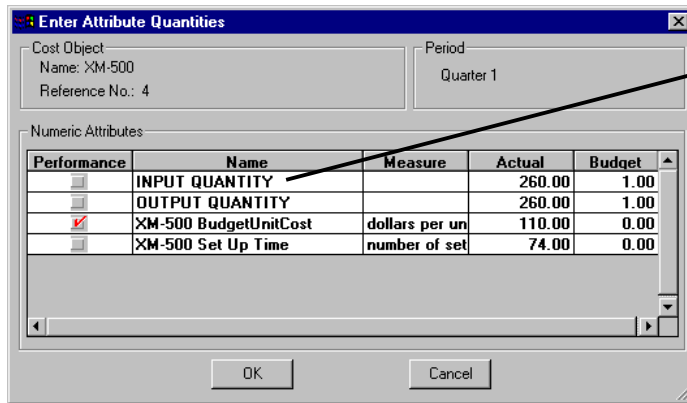
- 3. Click **Add Performance**.
- 4. Click the cell where the **Performance** column and **XM-100 BudgetUnitCost** row intersect.
You see a check mark appear in the cell.
- 5. Click the cell where the **Actual** column and **XM-100 BudgetUnitCost** row intersect.
- 6. Type **65** to replace the value of 0.00.



Input Quantity is not available in Oros Quick

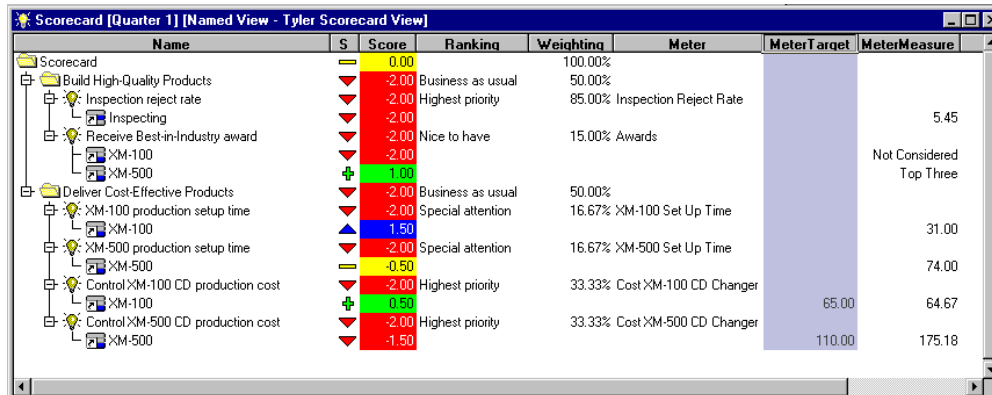
- 7. Click **OK**.
- 8. Click **Close**.
- 9. Select the **XM-500** account from within the **Control XM-500 CD product cost** objective.

- Use the procedure you just learned to select it as a performance measure and change the **Actual** value of the **XM-500 BudgetUnitCost** attribute from 0.00 to **110**.



Input Quantity is not available in Oros Quick

You see the changes in the MeterTarget column.




- Save the model.

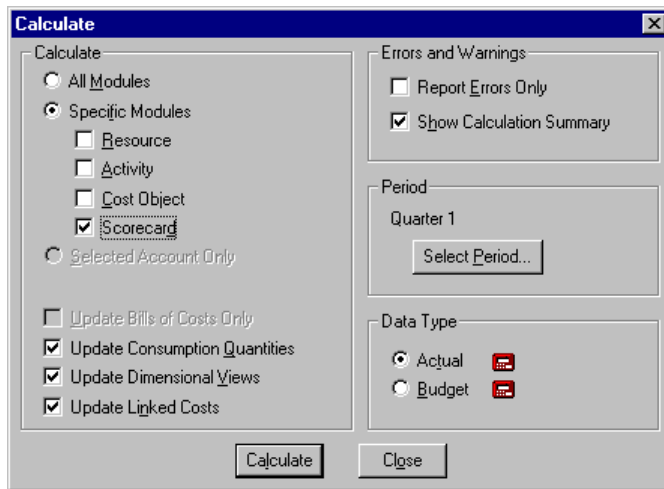
Calculating scorecard performance

Activity-based scorecard results are calculated, as are activity-based costs, on a period basis. You will now calculate the Scorecard module for Quarter 1.

➤ Calculate costs

- Select **Model > Calculate**, or click  on the toolbar.
You see the Calculate dialog box.
- Select **Specific Modules**.
You see the check boxes below become available.
- In the **Calculate** section, select **Scorecard**.
- In the **Errors and Warnings** section, select **Show Calculation Summary**.

5. If the **Period** is not Quarter 1, click **Select Period**, and double-click **Quarter 1**.
6. In the **Data Type** section, select **Actual**.



7. Click **Calculate**.

You see the Calculate Status dialog box followed by the Calculation Summary window. Notice that there were no warnings or errors.

8. Close the Calculation Summary window.

You see the Scorecard module has been calculated and the scores have been adjusted.


Name	S	Score	Ranking	Weighting	Meter	MeterTarget	MeterMeasure
Scorecard		-0.37		100.00%			
Build High-Quality Products		-1.77	Business as usual	50.00%			
Inspection reject rate		-2.00	Highest priority	85.00%	Inspection Reject Rate		5.45
Inspecting		-2.00					5.45
Receive Best-in-Industry award		-0.50	Nice to have	15.00%	Awards		Considered
XM-100		-2.00					Not Considered
XM-500		-1.00					Top Three
Deliver Cost-Effective Products		-0.17	Business as usual	50.00%			
XM-100 production setup time		1.50	Special attention	16.67%	XM-100 Set Up Time		31.00
XM-100		1.50					31.00
XM-500 production setup time		-0.50	Special attention	16.67%	XM-500 Set Up Time		74.00
XM-500		-0.50					74.00
Control XM-100 CD production cost		0.50	Highest priority	33.33%	Cost XM-100 CD Changer	65.00	64.67
XM-100		0.50				65.00	64.67
Control XM-500 CD production cost		-1.50	Highest priority	33.33%	Cost XM-500 CD Changer	110.00	175.18
XM-500		-1.50				110.00	175.18






Analyzing scorecard results

Analyzing ABC scorecard results permits a company to align resources and activities to strategies and objectives. Tyler Electronics prioritized objectives provide an organizational road map to set company direction. What do the Quarter 1 results indicate for the company?

General results

Because all of the scorecard meters have four associated measures, a general “Excellent—Good—Fair—Poor” scorecard index scale can be applied to the Tyler scorecard results analysis.

The overall scorecard performance is “Fair” . But within this module, a variety of both acceptable and unacceptable results are present.

- ❑ The product “Inspection reject rate” was decidedly “Poor” . There were 12 rejects out of 22 lots produced (9 XM–100 lots and 13 XM–500 lots) yielding a rate of 5.45 rejects per 10 lots. The goal of less than 1.5 rejects per 10 lots was not attained.
- ❑ The “Receive best-in-industry award” objective performance averaged “Fair”  — an XM–500 Top Three score of 1.0, plus an XM–100 Not Considered score of –2.0; averaged –.5 (–1.0 / 2).
- ❑ The “Deliver Cost-effective Products” strategy performance, while achieving an overall rating of only “Fair” , was impaired primarily by poor performance of the “Control XM–500 CD production cost” objectives. The performance on the “XM–100 production set up time” objectives was “Excellent”  while the “XM–500 CD production set up time” was “Fair” .

Detailed results

The XM–100 CD Changer met the “XM–100 production set up time” objective and nearly met the “Control XM–100 CD production cost” objective. Although four times more XM–100 CD Changers than XM–500 CDs were produced, and the activity-based cost per unit was 18.6% lower than the traditional cost, the XM–100 CD Changer apparently was not judged well by industry peers.

The XM–500 CD Changer was judged among the “Top Three” CD Changers in the industry, but failed to approach the “XM–500 production set up time” objective, had an unacceptable “XM–500 CD production cost”, and was much more costly (43.3%) when viewed from an activity-based cost perspective than when viewed from a traditional cost perspective.

Creating a performance-based business scorecard

The culmination of managing business costs through activity-based costing methods, and business results through performance-based goals and objectives, is the company business plan. Based on the Quarter 1 results, what might be done in Quarter 2 and future periods to improve business and make it more profitable?

Adjustments in Quarter 2 and beyond

Based on the results of the scorecard, the following outlines some adjustments that Tyler Electronics might make in the next quarter in order to meet the strategies and objectives.

Build High-Quality Products

Inspection reject rate —

- Separate the XM-100 and XM-500 reject data
- Adjust targets and track rejects by product

Receive Best-in-Industry award —

- Align XM-100 specifications with industry preferences and recommendations
- Maintain XM-500 features and enhance this product where possible

Build Cost-Effective Products

Production set up time —

- Maintain XM-100 set up time and processes
- Improve XM-500 set up process where possible

Control production cost —

- Maintain XM-100 production cost tolerances
- Reduce XM-500 production costs

In the next lesson

Next, you will generate reports to see the results of the model.

Generating reports

Once the information has been entered into the activity-based costing model, the costs calculated, and the data reviewed, the next step in analyzing the data is generating reports. Benefits of generating reports include:

- Validating the model
- Producing printouts that present an overall view of the data
- Analyzing costs on the screen
- Producing files for inclusion in other programs, such as spreadsheets or word processors
- Focusing on a specific area of interest
- Emphasizing certain data in relation to other data

This lesson addresses:

- Report templates
- Creating a report
- Selecting the data

Report templates

Report templates allow you to determine the type of information reported and how it is presented. There are several report templates provided. Refer to the Online Help for a list.

Creating a report

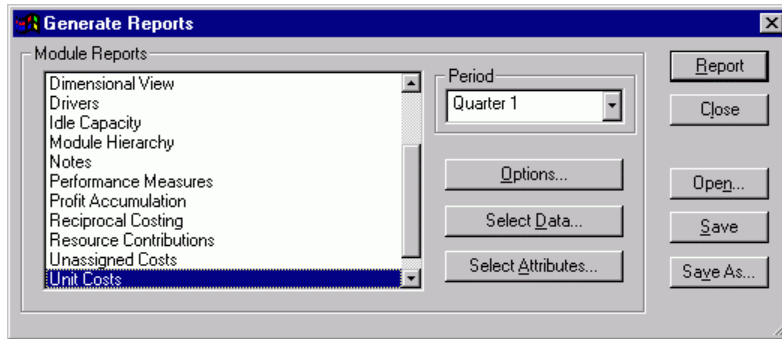
You will create a report and view the results on-screen. The following report is for the Quarter 1 period and includes unit costs for each type of product.

➤ **Create a report**

1. Select **File > Generate Reports**.

You see the Generate Reports dialog box.

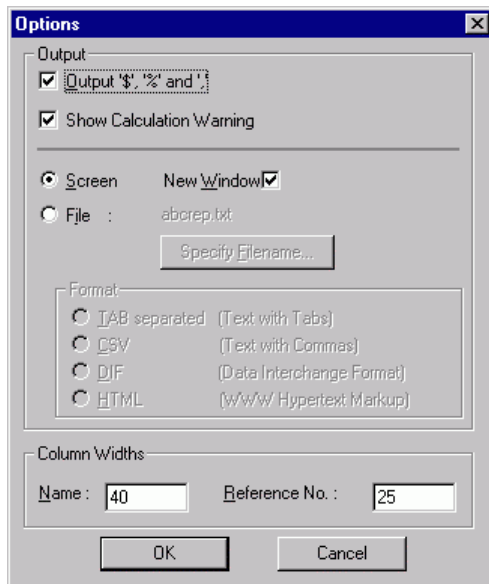
2. From the **Module Reports** list, select **Unit Costs**.



3. Click **Options**.

You see the Options dialog box.

4. Select **Screen** to display the report on–screen.



5. Click **OK**.

You again see the Generate Reports dialog box.

Selecting the data

Now, you are ready to select the appropriate type of data to display in the report.

➤ Select the data

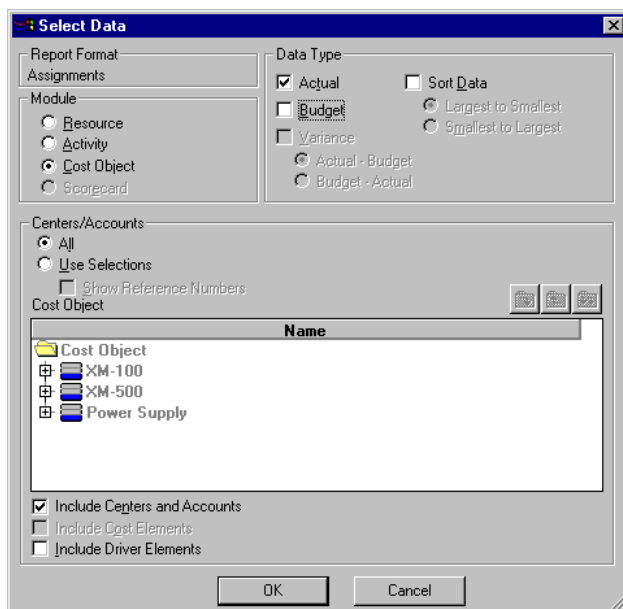
1. Click **Select Data**.

You see the Select Data dialog box.

2. In the **Module** section, select **Cost Object**.

The product hierarchy appears in the list below. This is the information that you want to report. You could further refine your choice by selecting only one account or center.

3. Clear **Budget** in the **Data Type** section because the report will include only actual costs.



4. Click **OK**.

You again see the Generate Reports dialog box.

5. Click **Report**.

The Unit Costs report displays on your screen, although you may need to widen the window to see the entire report.

Name	Ref No	No. Units	Act Cost	Actl BOC Cost
XM-100	1		\$67,257.47	\$34,244.00
Actual Output:		1,040.00		
Bundles:				
Unit Cost	1	1.00	\$64.67	\$32.93
XM-500	2		\$45,547.53	\$8,561.00
Actual Output:		260.00		
Bundles:				
Unit Cost	2	1.00	\$175.18	\$32.93
Power Supply	3		\$38,515.00	\$8,515.00
Actual Output:		1,300.00		
Bundles:				
Unit Cost		1.00	\$29.63	\$6.55

6. Close the report window.
7. Save the model.

In the next lesson

Next, you will finish the tutorial.

Finishing up

By completing this tutorial, you have performed or previewed every essential step for building a model.

Exploring other features

Many features are not covered in this tutorial. These are:

- Costing processes
- Analyzing value-added and non-value-added activities
- Analyzing cost drivers
- Calculating profitability
- Importing data files or other information systems
 - Note:** Import and export are not available in Oros Quick.
- Adding notes to items
- Focusing on specific data for reports by using attributes
- Merging accounts

What to do next

If you felt comfortable using the basic tools and techniques to build the Tyler Electronics model, use them on a simple project of your own.

ABC Technologies has a variety of products, including videotapes and training classes, that can help you learn more about activity-based costing, management, and budgeting. We can also help you build models for your company. If you need additional information, contact your ABC Technologies representative.

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