Instructor’s Manual Materials to Accompany

***Go! WITH MICROSOFT® Excel 2016* *COMPREHENSIVE* - Chapter 2**

using functions, creating tables, and managing large workbooks

# Instructor Supplements Available

You can find all supplements for this textbook on the Instructor Resource Center (IRC), available at <http://www.pearsonhighered.com/navigateit/>

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| **Instructor Resources for Chapter 2** |
| Annotated Solution Files |
| Answer Keys to Matching and Multiple Choice Questions |
| Assignment Sheet |
| Audio PowerPoint Presentation |
| Image Library |
| Instructor Manual |
| MOS Prep Quiz |
| PowerPoint Lecture |
| Prepared Exams by Application |
| Prepared Exams by Project |
| Prepared Exams by Chapter |
| Scoring Rubrics |
| Scripted Lectures |
| Solution Files |
| Solution PDF Files |
| Student Data Files |
| Transition Guide |
| Test Bank |
| Videos available in MyITLab (GO! to Work Videos, GO! Walk Thru Project Videos, GO! Learn How Videos, GO! for Job Success Videos) |

# Suggested Course Implementation Strategies and Resources for the Instructional Portion of the Chapter

# Instruction

# Prepare and Teach

**Project 2A**

**Instructional Project**

What the student does:

* Using inventory data, the student uses Flash Fill and the SUM, AVERAGE, MEDIAN, MIN, and MAX functions
* The student uses the COUNT and COUNTIF functions and then applies conditional formatting using the Highlight Cells rules and Data Bars to display inventory levels.
* The student uses Find and Replace and Freeze Panes, and then creates, sorts, and filters an Excel table. Then the student views and formats a large worksheet to repeat row headings across multiple pages.

**Project 2B**

**Instructional Project**

What the student does:

* Using weekly sales data from online and instore sales, the student summarizes the data on a third worksheet. While doing so, the student learns to navigate among worksheets, rename worksheets, and change the tab color of worksheets
* The student enters dates, clears cell contents, and clears cell formats. The student uses Paste Options to copy and paste data from one worksheet to another, and then formats and constructs formulas on grouped worksheets.
* The student creates a summary sheet with column sparklines by constructing formulas that refer to cells in another worksheet

**Planning and Delivering Instruction**

**Syllabus Templates** outline various plans for covering the content in an 8-, 12-, or 16-week course.

**Scripted Lectures** present a detailed guide for delivering live in-class demonstrations of the A and B Instructional Projects.

**Student Assignment Tracker** to students to track their own work.

**(NEW) MOS Objectives** are covered throughout the chapter and are indicated with an icon , so that you can direct students to skills they could encounter on the MOS exam. For a course that is focused on MOS preparation, this content can be emphasized in each chapter.

**Lessons on the GO!** provide instruction to teach newer Microsoft apps such as Sway and MIX! These lessons are found in MyITLab and the Instructors Resource Site, and come with instructions, student data files, solutions files, and rubrics for grading.

**Implementing Multimedia Resources**

**Application Intro Videos** provide a quick overview of what the application is and its primary functions.

**Interactive eText** enables students to actively read the narrative and instruction and also link directly to the various types of videos included.

**(NEW) Walk-Thru Videos** provide a quick 30-second preview of what the student will do and create—from beginning to end—by completing each of the A and B Instructional Projects. These videos increase the student’s confidence by letting the student see the entire Project built quickly.

**GO! Learn It (previously Student Training)** are instructor-led videos that provide guided instruction through each Objective and the related Activities.

**PowerPoint Presentations** provide a visual walk-thru of the chapter with suggested lecture notes included.

**Audio PowerPoint Presentations** provide a visual walk-thru of the chapter with the lecture notes read aloud.

**Providing Authenticity**

**GO! to Work Videos** put each chapter into context as it relates to how people use productivity software in their daily lives and work.

**GO! for Job Success Videos** and discussions provide real-life scenarios exploring the essential soft skills needed to succeed in the workplace and in other professional settings.

# Suggested Strategies and Resources for the Review, Practice, and Assessment Portion of the Chapter

**Review**

**GO! Online activities (multiple choice and matching activities)** provide objective-based quizzing to enable students to review how they are progressing. Crossword Puzzles provide a fun way for students to review key terms from the chapter.

**Testbank Questions** are available for you to create your own objective-based quizzes for review.

**MOS Quiz** provides an objective-based quiz to review the MOS-related content in the chapter—especially valuable for students who plan to take the MOS Certification exam.

**Step-by-Step Review Projects C and D in the textbook** provide a complete review of the A and B instructional projects with heavy cueing. Assign these on a prescriptive basis to students who were challenged with the A and B projects.

**Practice**

**MyITLab Skill-based Training Simulation** provides students with hands-on practice in a simulated environment. Here students apply the skills they learned and have access to Learning Aids to assist if needed (READ, WATCH, PRACTICE). All of the student’s keystrokes are recorded so that you can review and provide support to the students. As the instructor, you can set the number of times the students can complete the simulated practice.

**MyITLab Homework Grader Projects (E, F, and G)** provide students with additional (supplementing the A and B instructional projects) autograded, live-in-the-application practice with the skills they learned in the Instructional Projects A and B. These projects produce detailed reports to show the student where he or she made errors and also provide “live comments” explaining the details of any errors.

**Assessment**

**MyITLab Skill-based Exam Simulation** provides students with a hands-on assessment in a simulated environment. Here students demonstrate their knowledge and ability to apply the skills they have learned. In the Simulated Exams, the student does not have access to the Learning Aids. All of the student’s keystrokes are recorded so that you can review and provide support to the student. As the instructor, you can set the number of times the student can complete the simulation exam.

**MyITLab Assessment Grader Projects (E, F, and G)** provide the student with live-in-the-application assessment of the skills they learned in Projects A and B. These projects produce detailed reports showing the student where he or she made errors and also provide “live comments” explaining the details of any errors.

**End-of-Chapter Authentic Assessment Projects H-O** provide Content-based, Outcomes-based, and Critical Thinking projects that you can assign for additional practice or assessment. Like all authentic assessments, these assessments enable you to judge and the student to self-assess. Because some instructor judgment is required, expert task-specific and analytic rubrics are provided to make grading fast and simple.

**Prepared Exams** are additional point-counted production projects created specifically for use as exams that the instructor can easily grade manually using the provided point counts for each step and the annotated solutions.

**Pre-built Chapter Quizzes** provide objective-based quizzing.

**Testbank Questions** are available for you to create your own quizzes for assessment.

**Instructor Resources**

Includes everything you need to teach the course beyond what is available directly in MyITLab:

* **Solution Files**
* **Annotated Solution Files (useful if you want students to check their own work)**
* **Student Data Files**
* **Answer Keys**
* **Book Images**

# Review, Practice, Assessment

# Review and Assess

**Practice and Review Assignments: recommended on a prescriptive basis for students who require a step-by-step review of the chapter:**

2C Skills Review: A guided review of Project 2A

2D Skills Review: A guided review of Project 2B

Chapter Concepts Assessments and Review of Microsoft Office Specialist Skills Mastery Assessments:

2E Mastery: Decision-making assessment of Project 2A

2F Mastery: Decision-making assessment of Project 2B

2G Mastery: Decision-making assessment of Projects 2A and 2B combined

**Critical Thinking Assessments:**

2H GO! Fix It: Decision-making assessment of Projects 2A and 2B by creating a correct result from a document with errors

2I GO! Make It: Decision-making assessment of Projects 2A and 2B by creating a result from a supplied picture

2J GO! Solve It: Decision-making assessment of Projects 2A and 2B by applying decision-making skills and critical thinking skills. A task-specific rubric helps you and the student assess the result.

2K GO! Solve It: Decision-making assessment of Projects 2A and 2B by applying decision-making skills and critical thinking skills. A task-specific rubric helps you and the student assess the result.

**Outcomes-Based, Critical Thinking Assessments:**

**2L & 2M GO! Think**

**2N You & GO!**

**2O Collaborative Team Project**

Outcomes-based assessments in which the student demonstrates an understanding of the chapter concepts by applying them to a project in a manner he or she would outside of college. An analytic rubric helps you and your student grade the quality of the work by comparing it to an example of work that an expert in the discipline would create.

# Objectives

**Objective 1: Use Flash Fill and the SUM, AVERAGE, MEDIAN, MIN, and MAX Functions**

**Flash Fill** recognizes a pattern in your data, and then automatically fills in values when you enter examples of the output that you want.

A **function** is the name given to a predefined formula—a formula that Excel has already built for you—that performs calculations by using specific values that you insert in a particular order or structure.

**Statistical** **functions**, which include the AVERAGE, MEDIAN, MIN, and MAX functions, are useful to analyze a group of measurements.

The **SUM function** is a predefined formula that adds all the numbers in a selected range of cells.

The values in parentheses of a function are the **arguments**—the values that an Excel function uses to perform calculations or operations.

The **AVERAGE function** adds a group of values, and then divides the result by the number of values in the group.

The **MEDIAN function** is a statistical function that describes a group of data.

The **MIN function** determines the smallest value in a selected range of values.

The **MAX function** determines the largest value in a selected range of values.

**TEACHING NOTES**

Flash Fill is likely new to students so it may be helpful to demonstrate this feature. But most of the time in this early section should be focused on the importance of formulas. Start with the basic SUM function and move through each of the chapter’s functions.

**Teaching Tips**

*Flash Fill,* a new feature in Excel, recognizes a pattern in data and automatically fills in values, and is useful for splitting data from two or more cells, or combining data from two cells.

Remind students that *a function* is a predefined, built-in *formula* that performs specific calculations. *Statistical functions,* such as AVERAGE, MEDIAN, MIN, and MAX, are useful in analyzing data. Demonstrate how *Flash Fill* works and point out that if Excel does not recognize a pattern, it will suggest a pattern that can be accepted, or you can begin again.

Demonstrate how a column can be selected then moved. Point out that *AutoFit* can be applied to a column two ways—by clicking *Format* and then clicking *AutoFit Column Width,* or by pointing to a column border (between two columns) in the column heading area and double-clicking the pointer.

Stress that the SUM function adds all the numbers in a range of cells. The function is written **SUM(a10:a40)**. The values in the parentheses are referred to as the *arguments.* The AVERAGE function is expressed similarly and adds the values then divides the result by the number of values in the group.

Define that the MEDIAN function is a *statistical function* that describes a group of data by finding the middle value that has as many values *above* it as *below* it.

The MIN function determines the *smallest* value and the MAX function determines the *largest* value in a range of values.

**Objective 2: Move Data, Resolve Error Messages, and Rotate Text**

**Drag and drop** is the action of moving a selection by dragging it to a new location.

**TEACHING NOTES**

Since it is common that formulas need to be moved, students should know how easy it is and the impact of doing so. Be sure to point out the ###### message as this often initially catches students off guard.

**Teaching Tips**

Point out that when a formula is *moved* (not copied) the cell references are *not* adjusted (regardless of the type of cell references). Show students another way to change a column width by setting the column width to a number of *pixels.* Modifying column width is important, because if you receive a *######* error, this indicates that the cell is not wide enough to display the *numeric* data. The quickest way to display the numbers in a cell is to use *AutoFit.* Like Microsoft Word, data can be moved either by *cut and paste* or by *drag and drop.*

Show how text can be *rotated* from the *Alignment tab* in the *Format Cells* dialog box.

**Objective 3: Use COUNTIF and IF Functions and Apply Conditional Formatting**

**Logical functions** test for specific conditions.

**Criteria** are conditions that you specify in a logical function.

The **COUNT function** counts the number of cells in a range that contain numbers.

The **COUNTIF function** is a statistical function that counts the number of cells within a range that meet the given condition—the criteria that you provide.

A **logical test** is any value or expression that you can evaluate as being true or false.

The **IF** **function** uses a logical test to check whether a condition is met, and then returns one value if true, and another value if false.

A **conditional format** changes the appearance of a cell based on a condition—a criteria.

A **data** **bar** provides a visual cue to the reader about the value of a cell relative to other cells.

The **Find and Replace** feature searches the cells in a worksheet—or in a selected range—for matches, and then replaces each match with a replacement value of your choice.

**TEACHING NOTES**

Recall that statistical functions analyze a group of measurements. Logical functions test for specific conditions.

**Teaching Tips**

Point out that Excel also includes a group of functions known as *logical* functions, which use conditional tests—or *criteria—*to determine whether the conditions are true or false. The COUNT function counts the number of cells in a range that contain numbers. The COUNTIF function counts the number of cells in a range that meet the *criteria* provided. COUNTIF has two *arguments—*the range of cells and the *criteria.*

The IF function uses a *logical test* (the evaluation of a value or expression as being true or false) to check if a condition is met and returns one value if true and another value if false. Take a moment to review the *comparison operators* used in the IF function.

Demonstrate how *conditional formatting* changes the appearance of a cell based on a condition or *criteria.* If the condition is true, the formatting is applied. *Conditional formatting* can be the custom format of a font style or it can be *data bars. Data bars* provide a visual cue regarding the value of a cell relative to other cells—useful for quickly identifying high and low values.

The *Find and Replace* feature in Excel works similarly to that in Word**.** It searches cells in a worksheet or in a selected range for matches and replaces them with the replacement choice— either one at a time or all at once.

**Objective 4: Use Date & Time Functions and Freeze Panes**

The **NOW function** retrieves the date and time from your computer’s calendar and clock and inserts the information into the selected cell.

**Volatile** describes an Excel function that is subject to change each time the workbook is reopened; for example, the NOW function updates itself to the current date and time each time the workbook is opened.

The **Freeze Panes command** enables you to select one or more rows or columns and then freeze (lock) them into place.

A **pane** is a portion of a worksheet window bounded by and separated from other portions by vertical or horizontal bars.

**TEACHING NOTES**

In this section, it is important to point out the Date & Time function and also how to freeze panes.

**Teaching Tips**

Excel can obtain the date and time from your computer’s calendar and clock and display the information. The NOW function inserts the *current date* and *time* into a cell and formats it as a date and time. Point out that this particular function does not require an argument and is considered *volatile* because the date and time does not remain fixed but is *updated automatically* each time a workbook is opened.

In a large worksheet, when scrolling up and down or left and right the identifying row or the column titles are no longer visible. Point out that the *Freeze Panes* command enables you to select one or more rows or columns and *freeze* or lock them into place. Having the identifying information always visible makes it easier to work with the data. The locked rows and columns are referred to as *panes.*

**Objective 5: Create, Sort, and Filter an Excel Table**

You can **sort** tables—arrange all the data in a specific order—in ascending or descending order.

You can **filter** tables—display only a portion of the data based on matching a specific value—to show only the data that meets the criteria that you specify.

**TEACHING NOTES**

To analyze a group of related data, you can convert a range of cells to an Excel table. You can then work with the table to sort or filter the data or format the table.

**Teaching Tips**

Show students how they can convert a range of cells into a *table,* where the data can be managed independently from the rest of the worksheet. In order to insert or create a table, the *Unfreeze Panes* command must be applied first. When a table is created, the Table Tools are activated.

Similar to a table in Word, you can *sort* (arrange data in a specific order) a table in *ascending* (low to high) or *descending* (high to low) order. Point out that, in the table’s *header row,* clicking the *Category arrow* allows you to sort the data either A to Z or Z to A.

You can *filter* a table—display only data based on matching a specific value. Multiple filters can be applied. Emphasize that filtering is a *display option* only. Data is *not* deleted, merely *hidden* from view. Clearing the filter redisplays all data in the table. Another useful feature to point out is on the Design tab, in the *Table Style Options group;* selecting *Total Row* will add a *Total Row* to the table.

After sorting, filtering, and formatting a table, the table can be easily converted back to a range.

**Objective 6: View, Format, and Print a Large Worksheet**

**Print Titles** is an Excel command that enables you to specify rows and columns to repeat on each printed page.

**Scale to Fit** is an Excel command that enables you to stretch or shrink the width, height, or both, of printed output to fit a maximum number of pages.

The **Split** command splits the window into multiple resizable panes that contain views of your worksheet.

**TEACHING NOTES**

You can magnify or shrink the view of a worksheet on your screen to either zoom in to view specific data or zoom out to see the entire worksheet. You can also split a worksheet window into panes to view different parts of a worksheet at the same time.

**Teaching Tips**

The *Zoom* feature of Excel allows you to magnify or shrink the view of the worksheet.

Demonstrate the *Split* command that splits the window into multiple, resizable panes, useful for viewing multiple distant parts of the worksheet at one time. You can view any four portions of the worksheet at one time. Each portion displays with its own scroll bars.

In the *Page Setup group,* clicking *Print Titles* and then clicking *Rows to repeat at top* allows you to print a particular row at the top of *every* printed page. Point out that, in the *Settings group,* you can scale the document by selecting *Fit All Columns to One Page, Fit All Rows on One Page,* or *Fit Sheet on One Page.* For a worksheet that is slightly too large to fit on a page, on the *Page Layout tab,* in the *Scale to Fit group,* the *Scales arrows* can be used to reduce the width and height by a percentage.

**Objective 7: Navigate a Workbook and Rename Worksheets**

**Navigate** is to move among worksheets by clicking the sheet tabs.

**Sheet tabs** identify each worksheet in a workbook and display along the lower left edge of the workbook window.

**TEACHING NOTES**

Use multiple worksheets in a workbook to organize data in a logical arrangement. When you have more than one worksheet in a workbook, you can navigate among worksheets by clicking the sheet tabs.

**Teaching Tips**

Explain that multiple worksheets in a workbook can be organized and navigated using the *sheet tabs.* Sheet tabs identify each worksheet and can be color coded. Worksheets can be easily added or deleted; mention that worksheets can also be moved and/or copied.

**Objective 8: Enter Dates, Clear Contents, and Clear Formats**

**TEACHING NOTES**

In this section, it is important to emphasize the use of dates, clearing contents, and clearing formats.

**Teaching Tips**

Dates represent a type of value that displays as a date but is *stored* as a *serial number* so that it can be treated like other numbers. Point out that, when formatting a date, the hyphen (-) and the forward slash (/) function identically. Take a moment to review how Excel interprets dates.

A cell contains contents (a value or a formula) and formatting (font styles, fill color, border color, etc.). Clearing the *contents* of a cell deletes the value or formula, but the formatting *remains.* Formatting can also be cleared, retaining the contents. Point out that *in the Editing group,* clicking *Clear* displays choices so students can clear contents, formatting, both.

**Objective 9: Copy and Paste by Using the Paste Options Gallery**

To **paste** is the action of placing cell contents that have been copied or moved to the Clipboard into another location.

When you paste, the **Paste Options gallery** displays, which includes Live Preview to preview the Paste formatting that you want.

The **paste area** is the target destination for data that has been cut or copied using the Clipboard.

**TEACHING NOTES**

Data in cells can be copied to other cells in the same worksheet, to other sheets in the same workbook, or to sheets in another workbook. The action of placing cell contents that have been copied or moved to the Clipboard into another location is called paste.

**Teaching Tips**

Remind students that the *Clipboard* is a temporary storage area in Windows. When you *Copy* or *Cut* data, it resides on the *Clipboard* until it is pasted into other cells, worksheets or workbooks, or other Office programs. The paste command displays the *Paste Options* gallery—6 option buttons. Pointing to each option activates *Live Preview,* which displays how the copied cells will be placed.

**Objective 10: Edit and Format Multiple Worksheets at the Same Time**

**TEACHING NOTES**

In this section, it is important to spend time on efficiently editing and formatting multiple worksheets at the same time.

**Teaching Tips**

You can enter or edit data on several worksheets at the same time by selecting and *grouping* the worksheets. This is a powerful and time-saving tool. Data entered or edited on one sheet will be reflected in all selected worksheets. Pointing to a sheet tab, right-clicking, and selecting *Select All Sheets* groups the worksheets displays [*Group*] in the *title bar* and sheet tab names are underlined. Selecting a single sheet *ungroups* the worksheets and [*Group*] no longer displays in the title bar, or you can right-click the sheet tab and then click *Ungroup Sheets.*

Students should practice entering and formatting data in grouped worksheets.

The SUM function can be applied to multiple columns or rows at the same time.

Point out that cell styles and number formatting can also be applied to grouped worksheets.

Remind students that clicking a single sheet tab cancels the *grouping.*

**Objective 11: Create a Summary Sheet with Column Sparklines**

A **summary sheet** is a worksheet where totals from other worksheets are displayed and summarized.

A **detail sheet** is a worksheet that contains details of the information summarized on a summary sheet.

**TEACHING NOTES**

Emphasize the importance, in some workbooks, of including a summary sheet. Also mention or demonstrate how detail sheets are connected to a summary sheet.

**Teaching Tips**

Clicking the *New sheet* button inserts a new blank worksheet.

A *summary sheet* is a worksheet where totals from other worksheets are displayed and summarized. This is an important feature of Excel. Have students practice creating a summary sheet.

The worksheets from which the information, displayed on the summary sheet, is extracted are known as *detail sheets.* After a *summary sheet* is created, any changes made to the *detail sheets* are reflected in the *summary sheet* because it accurately displays the current totals from the detail worksheets.

Explain that *column Sparklines* resemble a tiny column chart in a cell that represents a trend.

**Objective 12: Format and Print Multiple Worksheets in a Workbook**

**TEACHING NOTES**

Formatting can be done to one worksheet or a group of worksheets simultaneously.

**Teaching Tips**

Each worksheet in a workbook can have a different formatting such as headers, footers, page setup, and margins.

By default, Excel prints only the *active worksheet,* however, from *Settings,* you can select *Print Entire Workbook.*

**Discussion Questions for Chapter 2**

1. What examples can students come up with for a small business-related workbook to use the SUM, AVERAGE, MEDIAN, MIN, and MAX functions?
2. Why are the Date & Time functions important? How can they be used?
3. Is it important to rename worksheets? Why?
4. When might you want to format each worksheet in a workbook with different formatting? Examples? When would it be better to format all worksheets similarly? Examples?