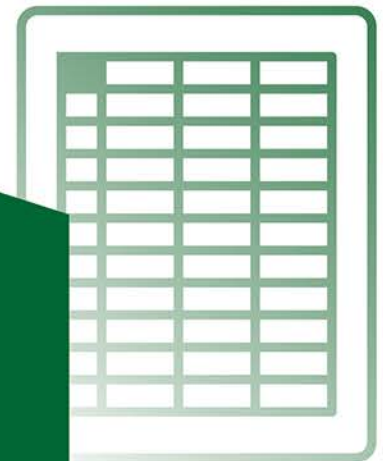# LEARN -BY- DOING →

Microsoft Office Specialist
Excel 2019

Compatible with

Office 365

A Visual, Hands-on Approach to Learning Microsoft Excel

B.E. PUBLISHING

The Development Team
at B.E. Publishing and
Joy Tavano

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A Visual, Hands-on Approach to Learning Microsoft Excel

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Microsoft Office Specialist
Excel 2019

A Visual, Hands-on Approach to Learning Microsoft Excel

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Introduction

Learn-by-Doing: Microsoft Office Specialist Excel 2019

As the name implies, the **Learn-by-Doing Series** gets students learning Microsoft Office 2019 by using its applications to communicate and share information in the real world of work and life. This book uses step-by-step instructions and illustrative screenshots to introduce and reinforce the skills assessed on the Microsoft Office Specialist Excel Associate 2019 Certification Exam.

Designed for today's interactive, visual learner, this text consists of graphical hands-on lessons that get students instantly engaged in applying Microsoft Excel 2019 skills. Students will learn how to format data, work with numbers and formulas, and create charts and graphs as they acquire the skills needed for school and workplace readiness.

Microsoft Office Specialist (MOS) Certification

Microsoft Office Specialist (MOS) is an industry-leading certification designed to assess mastery of Microsoft Office applications. Candidates are evaluated on their ability to apply their knowledge of important Microsoft Office features in a project-based environment. Certified Microsoft Office Specialists demonstrate internationally-recognized skills that can be leveraged for future success in both the classroom and the workplace. To support students seeking MOS certification, this text provides detailed instruction in all of the skills assessed on the MOS Excel Associate 2019 Certification Exam.

Benefits of Using This Textbook

Learn-by-Doing: Microsoft Office Specialist Excel 2019 is designed to be used by students enrolled in a computer applications course that includes spreadsheets in its curriculum, and by learners looking to expand their knowledge of Microsoft Excel 2019 for MOS certification. Students should have a basic familiarity with working on a computer. Microsoft Excel skills and features are presented in order, ranging from basic to intermediate. The lessons in this book reinforce and build upon knowledge as it is acquired; therefore, lessons should be completed in the order presented.

Throughout these lessons, you will also gain hands-on experience with all the skills needed to pass the MOS Excel Associate 2019 Certification Exam. MOS certification can help boost confidence in your ability to use the key features of Excel 2019 you may encounter in the workplace and beyond. MOS certification can also be a valuable asset when applying for jobs, helping you demonstrate experience and proficiency in essential workplace productivity principles, including communication and collaboration.
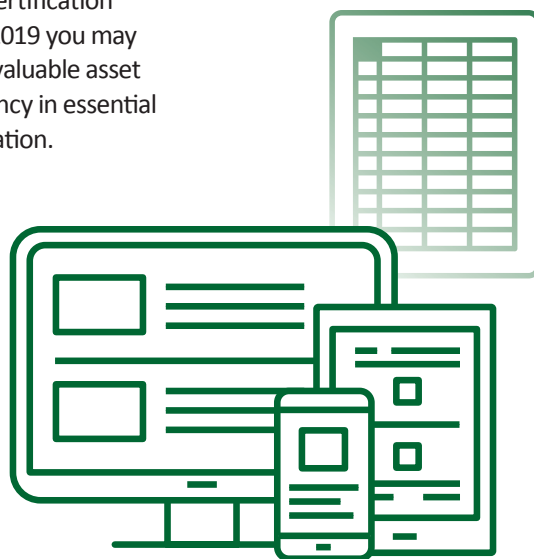
Understanding the Format of This Book

This book is divided into seven parts, each containing individual lessons pertaining to the principal tools in each tab of Microsoft Excel 2019. Lessons in this book have been organized into an easy-to-read, self-guided, visual format where you encounter and practice new skills and learn by doing. Some lessons require access to source files to complete the instructions. If you do not have access to the eText of this book, lesson resources will be provided by your instructor.

Review the following features and components to become familiar with the structure of the lessons in *Learn-by-Doing: Microsoft Office Specialist Excel 2019*.

Skills

Lists the new skills introduced in the lesson. Skills assessed in the MOS Excel 2019 Certification Exam are identified with a red bullet. To provide comprehensive instruction, foundational and supporting skills are also identified.

Lesson Title

Lesson Overview
Explains the skills and concepts that will be learned in the lesson and provides context for their use in a spreadsheet.

Tools & Terms
Illustrates the icons and menu descriptions used to complete the lesson.

Instructions & Screenshots

Instructions that are illustrated with corresponding drop-down menus and dialog boxes are indicated by a red [#] icon. Match each instruction with its corresponding screenshot as you complete the step.

➔ *Note: Once a new skill has been presented, visual step-by-step instructions for that skill are no longer provided in subsequent lessons.*

➔ *Note: Office 365 is a suite of web-based applications; updates and changes happen regularly. At the time of going to press with this textbook, every attempt was made to reflect accurate screenshots and include tasks and skills that can be accomplished, with minor modifications, despite any updates that may occur.*

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Learn-by-Doing: Microsoft Office Specialist Excel 2019

Ribbon

The primary Microsoft Excel 2019 tab being used in the lesson is displayed at the top of the Instructions page. Red `#` icons illustrate the group being used to complete a particular skill.

Figure

Provides the content to be used in the lesson. Figures can also be used as visual guidance to assist in producing the finished formatted spreadsheet.

Skills Mastery

Upon completion of all the lessons in each part, your instructor may require you to complete a series of Skills Mastery Quizzes. These quizzes offer you the opportunity to demonstrate mastery of new skills and assess your knowledge of the essential features of Microsoft Excel 2019.

Skills Mastery lessons for each part are located with the Instructor Resources.

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Microsoft
Office Specialist
Excel 2019

Part 2
Skills Mastery Quiz 2.2

Skills

- Apply cell formats
- Adjust row height and column width
- Fill cells by using Flash Fill
- Modify cell alignment and indentation
- Wrap text within cells
- Merge cells
- Search for data within a workbook
- Replace data

Instructions

1. Using Microsoft Excel 2019, open the file named Skills Mastery 2.2 SOURCE.
2. Save the workbook as Skills Mastery 2.2 Your Name to your local or network hard drive.
3. Replace all occurrences of the text [Country] with the text [Rural].
4. Use Flash Fill to fill column B with the school's short name.
5. Italicize and underline cell A1.
6. Change the font of the entire worksheet to Arial and the font size to 13.
7. Change the height of rows 1 through 3 to 75.
8. Wrap the text in cells A2 and E3.
9. Merge and center cell A1 across columns A through G.
10. Indent cells A4 through A18.
11. Change the fill color of cells B1 and B2 to Green, Accent 6, Lighter 60%.
12. Apply a bottom double border to cells B3 through G3.
13. Proofread your spreadsheet for accuracy and format, then resave the file.
14. Print or share the document if required by your instructor.

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Curriculum Guide

Lesson		Skills	Approximate Completion Time (in hours)
Part 1: Worksheet Basics			
1.1	**Put It in a Safe Place**	*Exploring Places to Save Work*	▪ Use File Manager ▪ Create a folder ▪ Log in to OneDrive ▪ Sync to OneDrive	.5
1.2	**Getting Started**	*Navigating Excel*	▪ Create a workbook ▪ Change magnification by using zoom tools ▪ Identify tabs and groups ▪ Understand Backstage View ▪ Close Excel	.75
1.3	**Top Selling Albums**	*Creating Your First Workbook*	▪ Create a workbook ▪ Save a workbook to a local hard drive or network drive ▪ Close a workbook	.75
1.4	**Top Selling Albums 2**	*Retrieving and Printing a Worksheet*	▪ Open an existing workbook from your hard drive or network drive ▪ Revise an existing worksheet ▪ Use Save As ▪ Save workbooks in alternative file formats ▪ Preview a worksheet ▪ Print all or part of a workbook	.75
1.5	**When I Grow Up**	*Emailing a Worksheet*	▪ Email a worksheet as an attachment ▪ Email from within Excel	.75
1.6	**Chicago Cubs Roster**	*Working with Columns, Rows, and Cells*	▪ Adjust row height and column width ▪ Insert and delete multiple columns or rows ▪ Insert and delete cells ▪ Freeze worksheet rows and columns	.75
1.7	**Cost of Living**	*Editing Basics*	▪ Cut, copy, and paste data ▪ Use Undo	.5
1.8	**Top Instagram Accounts**	*Proofing Your Worksheet*	▪ Use Spellcheck ▪ Use Thesaurus ▪ Paste data by using special paste options	.75
1.9	**Tasty**	*Customizing the Quick Access Toolbar*	▪ Use Redo ▪ Customize the Quick Access toolbar	.5
1.10	**When I Grow Up 2**	*Getting Help and Information*	▪ Use Search ▪ Apply number formats ▪ Wrap text within cells ▪ Use Smart Lookup ▪ Inspect workbooks for issues - hidden properties ▪ Modify basic workbook properties	.5
Part 1 Skills Mastery		Skills Mastery Quizzes are located with the Instructor Resources.	
Part 2: Formatting Data			
2.1	**Weekly Meal Plan**	*Formatting Data*	▪ Apply cell formats ▪ Adjust row height and column width	.75
2.2	**Daily Calendar**	*Enhancing Data within a Workbook*	▪ Apply cell formats	.75
2.3	**Contact List**	*Applying Basic Data and Cell Alignment*	▪ Modify cell alignment ▪ Fill cells by using Flash Fill	.75
2.4	**Cinnamon Roll Recipe**	*Applying Enhanced Alignment Tools*	▪ Modify cell alignment, orientation, and indentation ▪ Wrap text within cells ▪ Merge cells	.75

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Lesson		Skills		Approximate Completion Time (in hours)
2.5	**Top Broadway Shows**	*Using the Format Cells Dialog Box*	■ Apply cell formats from the Format Cells dialog box ■ Modify cell alignment and orientation ■ Search for data within a workbook ■ Replace data	.75
2.6	**Fitness Class Schedule**	*Applying Conditional Formatting*	■ Apply built-in conditional formatting	.75
Part 2 Skills Mastery		Skills Mastery Quizzes are located with the Instructor Resources.		

Part 3: Page Layout Options

Lesson		Skills		Approximate Completion Time (in hours)
3.1	**Cinnamon Roll Recipe 2**	*Adjusting Page Setup*	■ Modify page setup ■ Set a print area	.5
3.2	**State Facts**	*Scaling a Workbook*	■ Set page scaling	.75
3.3	**Skeletal System**	*Controlling What Excel Prints*	■ Modify page setup	.5
3.4	**Thrill Seekers**	*Printing Multiple Pages*	■ Modify page setup ■ Display repeating row titles on multipage worksheets ■ Display and modify workbook content in different views	.75
3.5	**College Football**	*Giving a Worksheet a Unique Style*	■ Set page scaling ■ Change workbook themes	.5
Part 3 Skills Mastery		Skills Mastery Quizzes are located with the Instructor Resources.		

Part 4: Working with Numbers and Formulas

Lesson		Skills		Approximate Completion Time (in hours)
4.1	**Bestsellers**	*Formatting Numbers*	■ Fill cells by using Auto Fill ■ Clear cell formatting ■ Apply cell styles ■ Apply number formats ■ Display repeating column titles on multipage worksheets	.75
4.2	**Bestsellers 2**	*Sorting Text*	■ Sort data	.5
4.3	**Smartphone Apps**	*Sorting Numbers*	■ Remove duplicate records ■ Sort data by multiple columns	.5
4.4	**Paycheck Calculator**	*Using Excel as a Calculator*	■ Apply number formats ■ Use basic formulas: addition, subtraction, multiplication, and division ■ Insert relative references	.5
4.5	**Food Drive**	*Formulas Made Easy*	■ Fill cells by using Auto Fill ■ Paste data by using special paste options	.75
4.6	**Student Grades**	*Commonly Used Formulas*	■ Use AutoSum ■ Perform calculations by using AVERAGE(), MAX(), MIN(), and SUM() functions	.75
4.7	**Semester Grades**	*Auditing Formulas*	■ Use multi-math formulas ■ Display formulas	.75
4.8	**Add/Drop Period**	*Formatting Date and Time*	■ Apply number formats	.75
4.9	**Magazine Sales**	*Working with Named Ranges*	■ Insert relative, absolute, and mixed references ■ Define a named range ■ Navigate to named cells or ranges ■ Reference named ranges in formulas	1

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Curriculum Guide

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Lesson		Skills		Approximate Completion Time (in hours)
5.7	**Personal Budget**	*Importing a Text File*	■ Import data from .txt files ■ Sort data by multiple columns ■ Change sort order ■ Convert tables to cell ranges	.5
5.8	**Personal Budget 2**	*Working with PivotTables*	■ Create PivotTables ■ Refresh PivotTables	.5
5.9	**Food Drive 3**	*Using Information Across Worksheets and Workbooks*	■ Copy and move a worksheet between workbooks ■ Change window views ■ Insert references across worksheets ■ Unmerge cells	.75
5.10	**Clothing Store Inventory**	*Working with Table References*	■ Import data from .csv files ■ Insert and delete multiple columns or rows ■ Insert and delete cells ■ Navigate to named workbook elements ■ Name a table ■ Reference named tables in formulas	.75
5.11	**Ice Cream Shop Revenue**	*Modifying Tables*	■ Remove conditional formatting ■ Add or remove table rows and columns ■ Insert and configure total rows	.75
Part 5 Skills Mastery		Skills Mastery Quizzes are located with the Instructor Resources.		

Part 6: Working with Charts and Graphs

Lesson		Skills		Approximate Completion Time (in hours)
6.1	**Spring Colors**	*Creating a Pie Chart & a Sunburst Chart*	■ Create charts - pie and sunburst ■ Add and modify chart elements ■ Create chart sheets ■ Inspect workbooks for issues - compatability	.75
6.2	**Most Watched Videos**	*Creating a Column Chart & a Treemap Chart*	■ Create charts - column and treemap ■ Apply chart layouts ■ Apply chart styles ■ Add and modify chart elements ■ Configure print settings	.75
6.3	**Olympic Results**	*Creating a Line Chart & a Map Chart*	■ Create charts - line and map	.75
6.4	**Superhero Stats**	*Creating a Bar Chart*	■ Create charts - bar ■ Resize charts	.75
6.5	**Tech Device Ownership**	*Creating a Sparkline Chart*	■ Insert Sparklines ■ Analyze data by using Quick Analysis	.5
6.6	**Student Enrollment**	*Forecasting Data*	■ Create a forecast worksheet	.5
6.7	**Superhero Stats 2**	*Updating Existing Charts*	■ Add data series to charts ■ Change the chart type ■ Switch between rows and columns in source data ■ Add alternative text to charts for accessibility	.75
6.8	**My Check Register**	*Using a Template*	■ Create a workbook from a template	.5
Part 6 Skills Mastery		Skills Mastery Quizzes are located with the Instructor Resources.		

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Curriculum Guide

Lesson		Skills	Approximate Completion Time (in hours)
Part 7: Sharing and Working Collaboratively			
7.1	**Roommate Expense Tracking** *Communicating within Spreadsheets*	▪ Add and delete comments ▪ Review and reply to comments ▪ Add and delete notes ▪ Print showing comments and notes	.75
7.2	**Weekly Spending** *Sharing Files*	▪ Save a spreadsheet to OneDrive ▪ Share a spreadsheet ▪ Assign collaboration permission ▪ Move OneDrive files	.75
7.3	**Household Chores** *Managing Revisions*	▪ Create a new spreadsheet with Excel Online ▪ Edit spreadsheets with Excel Online ▪ Review version history	.75
7.4	**Homework** *Using Comments While Collaborating*	▪ Collaborate simultaneously ▪ Add and manage comments in Excel Online	.75
7.5	**Ticket Sales** *Working with AutoSave*	▪ Using AutoSave ▪ Using Save a Copy ▪ Using Version History	.75
Part 7 Skills Mastery		Skills Mastery Quizzes are located with the Instructor Resources.	
			Total Completion Time: 39 hrs.

Part 1

Worksheet Basics

Part 1: Worksheet Basics

Put It in a Safe Place

Exploring Places to Save Work

Lesson Overview

When using a computer, saving an electronic file is much like saving hard copies of files—they need to be put somewhere. Imagine your computer is a file cabinet with many drawers. In each drawer there are folders and in each folder there are subfolders and files. Just as you would never just toss a report in a random drawer, you would never save work without first deciding which drawer, or in this case which drive, to save it to. Once the drive has been chosen, you can be even more intentional about your organization and save the file to a particular folder within that drive.

In this lesson, you will identify and explore the places that work can be saved. You will not be required to save any work.

Tools & Terms

Review the following tools that you will learn and practice using in this lesson. In addition, you may be required to demonstrate your knowledge of these tools by completing the Skills Mastery Quizzes for this part.

Local Drive:
A computer's local drive is the hard drive located inside your computer. It is the place that programs are typically installed and where files can be saved. If files are saved to a computer's local drive, they can only be opened from that particular computer.

Network Drive:
Many organizations such as schools and companies give users access to a shared computer drive called a network drive. This large hard drive contains files from all users in the organization and would require a login provided by the network manager. Saving work to a network drive allows you to retrieve that work once you have logged into the network.

Removable Drive:
There are many types of removable storage devices which a computer can accept. Examples include external hard drives, USB drives (also referred to as thumb drives or flash drives), and memory cards. Often these drives are used to back up files, but they are also used to transport your work from one computer to another.

File Manager:
The interface you use to view your computer's folder structure is called a file manager. Windows 10 utilizes File Explorer. When launched, it allows the user to see folders and files located on the computer's hard drive, network drive, and any connected removable drives. Some cloud storage drives may also be visible if your computer has been configured to connect automatically to a cloud storage account.

Tools & Terms (cont.)

Cloud Drive:
Cloud storage allows a user to work with files that are physically unattached to your computer. Files are saved to a place that is accessed via the web, which makes working from various places easy and convenient. As long as you have an Internet connection, you have access to your cloud drive. Examples of cloud storage include OneDrive, Google Drive, and Dropbox. Many cloud storage platforms provide an application to work on the file. For example, when opening an Excel spreadsheet from OneDrive, the user has the option to edit the spreadsheet directly in their web browser without having to open their Microsoft Excel 2019 program.

Office 365:
A subscription to Office 365 provides users with periodic updates to Microsoft Office's desktop and online applications. While users of Excel 2019 will be able to create, format, save, and share spreadsheets, using Office 365 means that Excel will be automatically updated with any updates that Microsoft makes available. Office 365 subscribers also have an added feature allowing them to AutoSave documents to the user's OneDrive account.

Since Office 365 is regularly updated, what appears on your screen may differ from the instructions and screenshots presented in this text. However, with minor modifications, most lessons can be completed successfully.
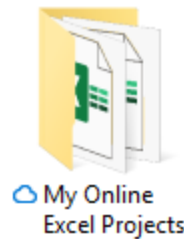
Syncing:
It is possible to sync your OneDrive account to your computer. Syncing provides access to the folders and files on your OneDrive cloud storage account when you are working offline. It also allows your OneDrive cloud storage folders to appear in your computer's file management interface. Otherwise, you must open OneDrive.com from your computer's web browser to upload and download saved documents.

AutoSave:
Many online applications, such as Excel Online, provide automatic saving of your files to your cloud storage. As you work, the application will periodically save your changes without you having to initiate the save. Office 365 subscribers can take advantage of AutoSave to have spreadsheets that are saved to OneDrive automatically updated as they work. Since files are overwritten periodically, you may want to preserve an original copy of a file before making changes. Utilize Save a Copy before making changes to a spreadsheet or use Version History to bring back previous versions of the file.

Instructions

Important Note: In this lesson, you will set up folders on your hard drive or network drive and your OneDrive. This process will vary depending on your workstation settings.

1. Create a folder on your hard drive or network drive and name it **My Excel Projects**.

2. Unless you are already set up to connect with your OneDrive account automatically, log in to your OneDrive account from OneDrive.com.

3. Create a new folder on your OneDrive and name it **My Online Excel Projects**.

4. Sync your OneDrive account to your computer.

   ⊙ *Note: You will be instructed in each lesson on what to name the lesson file and on which drive to save it.*

Part 1: Worksheet Basics

Getting Started
Navigating Excel

Lesson Overview

Microsoft Excel 2019 is a powerful program that allows you to enter data, write and calculate formulas, analyze results, and display data in multiple formats. In Excel, you enter data into what is called a worksheet. Whether you are keeping a budget, creating an invoice, or formatting a financial report, Excel makes it easy to work with different kinds of data.

In this lesson, you will become familiar with the Excel application interface.

Skills

- Create a workbook
- Change magnification by using zoom tools
- Identify tabs and groups
- Understand Backstage View
- Close Excel

Launching Excel & Working with Files

The Excel program icon launches **Microsoft Excel 2019** from the **Windows Start Menu** or **Start Screen**.
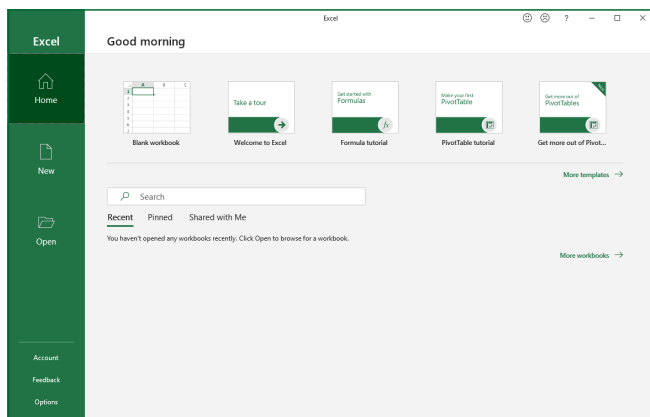
Start Screen

When Microsoft Excel opens, the first thing you see is the **Start Screen**. From the Start Screen you can open existing workbooks from a list of recent, pinned, or shared files, or create a new file using a blank workbook or a spreadsheet template. You also can look for more templates online using the Start Screen search tool or open a tutorial file to learn more about specific tools.
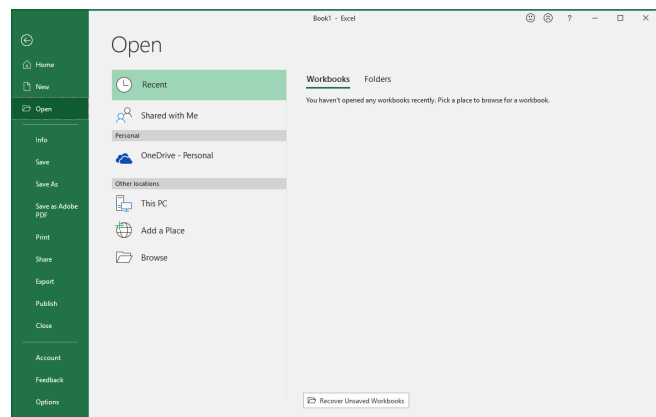
Backstage View

Located by clicking the File tab, the **Backstage View** is the central place for managing your workbooks. Actions such as saving, printing, sharing, exporting, or opening a previously saved file can also be done here. Different options appear depending on your selection. For example, when you select Open, your computer's file folders and cloud folders appear on screen.

Clicking on the back arrow, or the Esc Key, returns you to the open file.

Application Window

The Excel application window displays the working area of your worksheet and provides access to the tools needed to enter, edit, and format data.

A AutoSave   B Quick Access Toolbar   C Ribbon   Program Window Controls D

Share Control E

Comments F

G Worksheet

H Sheet Tab Control

I View Controls
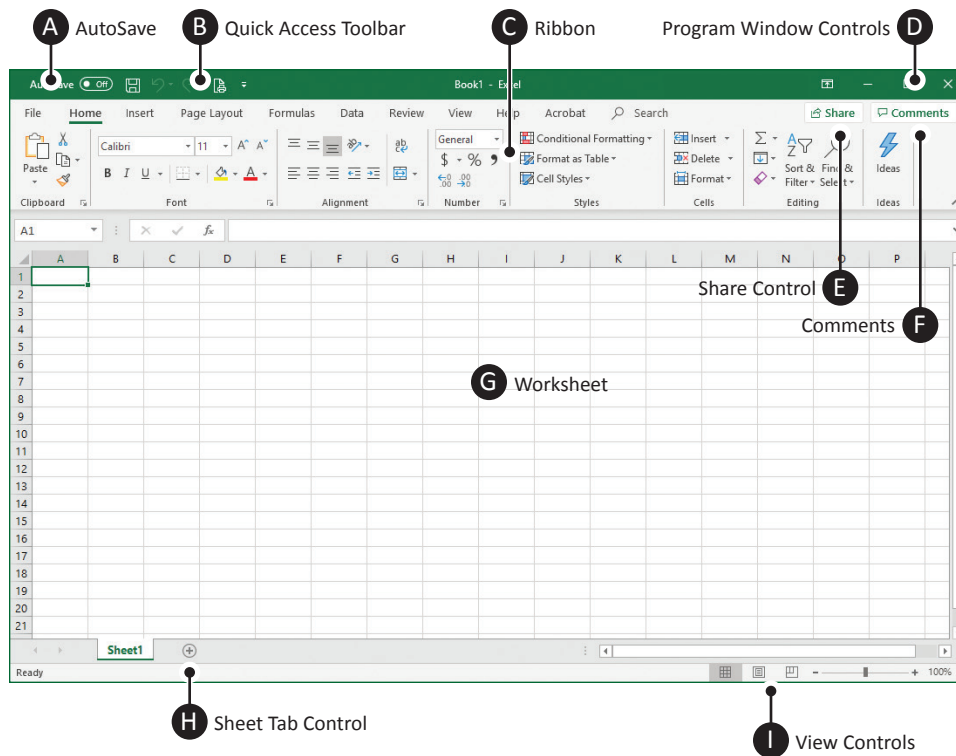
Application Window Key

A AutoSave
Allows Office 365 users to automatically save their worksheet to OneDrive or SharePoint every few seconds

B Quick Access Toolbar
Commonly used commands at the top of the application window, which can be customized to stay visible

C Ribbon
Groups of related tools organized within a set of tabs, which can be collapsed or expanded

D Program Window Controls
Allow you to move, resize, and close the application window, and customize ribbon display options

E Share Control
Allows you to share a workbook with another user and see who a workbook is currently shared with

F Comments
Allow you to review and respond to comments in a document

G Worksheet
A single spreadsheet made up of cells organized by rows and columns

H Sheet Tab Control
Allows you to add and navigate through multiple worksheets

I View Controls
Adjust zooming in and out of a worksheet, as well as select page view options

Ribbon Parts

The Excel ribbon user interface keeps related tools organized and easily accessible.

A Tab   C Drop-down Menu

B Group   D Icon   E Dialog Box Launcher
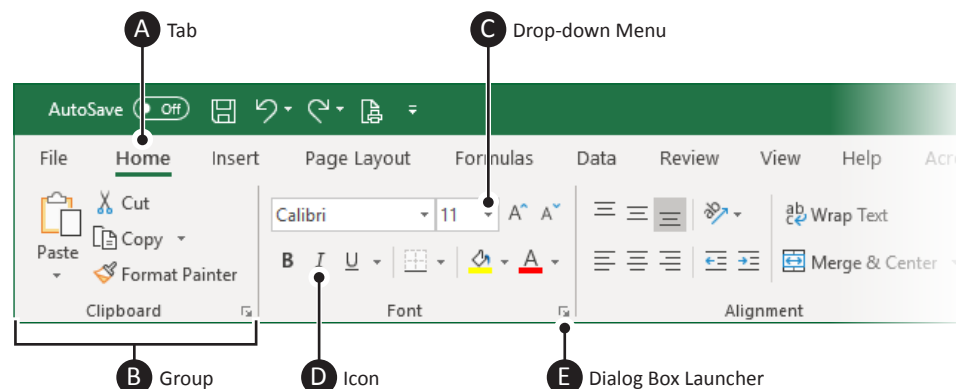
Tools are organized within tabs, which contain groups of related features and commands. Graphical icons or menu items control the editing and formatting of an Excel worksheet. Some tools or groups have additional options accessible from a drop-down menu or dialog box launcher.

Ribbon Parts Key

A Tab
Displays the ribbon's name and contains related groups of different tools and commands to perform the most common tasks

B Group
Contains related features and tools organized within a ribbon's tab

C Drop-down Menu
Allows you to choose a command from a list of options

D Icon
An interactive tool that activates its feature when clicked

E Dialog Box Launcher
Opens a window with information and options about a particular tool or group

Worksheet Key

A **Name Box**

Displays the name or location of the active cell

B **Formula Bar**

Where data and formulas are entered and edited, which then appears in the active cell

C **Column**

Vertical cells that are labeled by letters

D **Row**

Horizontal cells that are labeled by numbers

E **Cell**

The intersection of a row and column, which is identified by a letter and number

F **Sheet Name Tab**

Sheets can be added or deleted, renamed, and reordered

Worksheet

The Excel worksheet is where data is entered, organized, and calculated. Worksheets are divided into columns and rows. The intersection point of a column and row is a cell. Data is entered and stored in individual cells.

A Name Box   **B** Formula Bar   **C** Column

Row

F Sheet Name Tab   **E** Cell
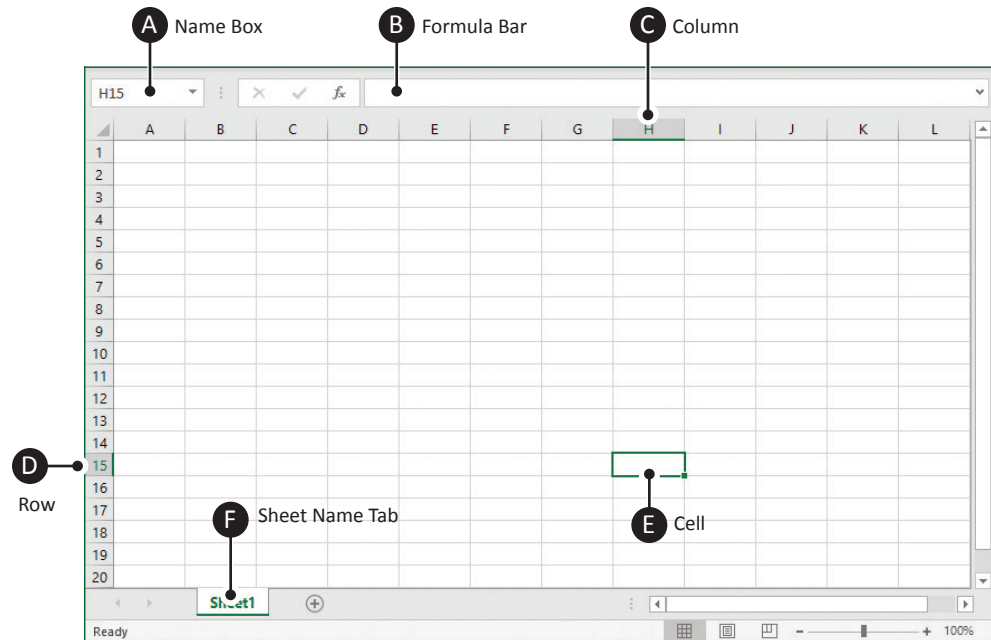
View Controls Key

A **Page View Options**

Allow you to select page view options that include Normal (default), Page Layout, and Page Break Preview

B **Zoom Adjustment**

Adjusts zooming in and out of a worksheet

View Controls

The controls at the bottom right of the document adjust zoom and present different page view options.

B Zoom Adjustment

100%

A Page View Options
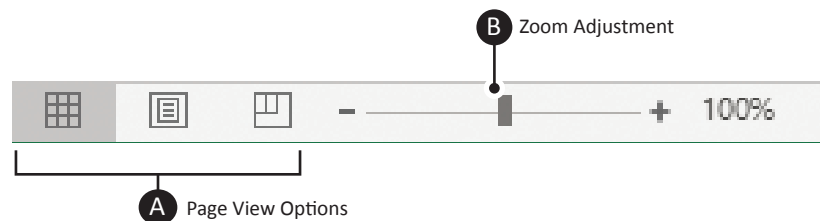
Status Bar Key

A **Cell Mode**

The current cell editing mode will display

B **Average**

The average of selected cells will display

C **Count**

The number of selected cells will display

D **Sum**

The sum of numerical values in selected cells will display

Status Bar

The Status Bar can be easily customized to give you information about the workbook you are working on by right-clicking the bar.

A Cell Mode

Ready

Average: 33   Count: 2   Sum: 66

B   **C**   **D**

Average   Count   Sum

Learn-by-Doing: Microsoft Office Specialist Excel 2019
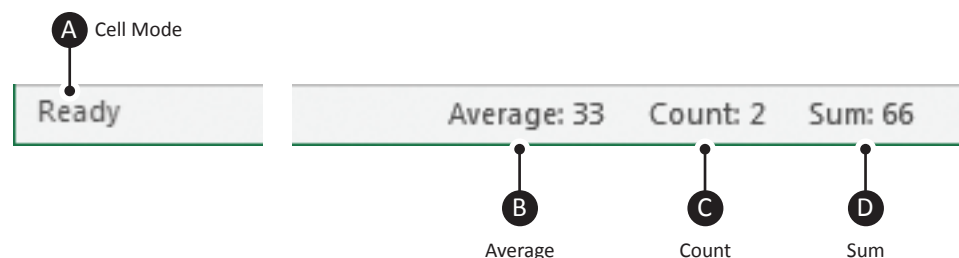
Instructions

1. Locate the Excel program icon and launch Excel 2019. **X**

2. From the **Start** screen, **Home** section, select **Blank workbook**.

3. In the **Name Box**, notice the cell address A1. This is the active cell.

4. Key your first name in cell A1 and hit **Enter**. Notice that you are now in cell A2.

5. Go to the **Backstage View** of Excel by clicking on the **File** tab. Notice the saving and printing options available.

6. Click on the **Arrow** (or hit the Esc key) to return to your open worksheet.

7. Practice getting to know the **Ribbons** and their parts by clicking some of the **Tabs** such as Insert, Page Layout, Formulas, etc. (as shown below):
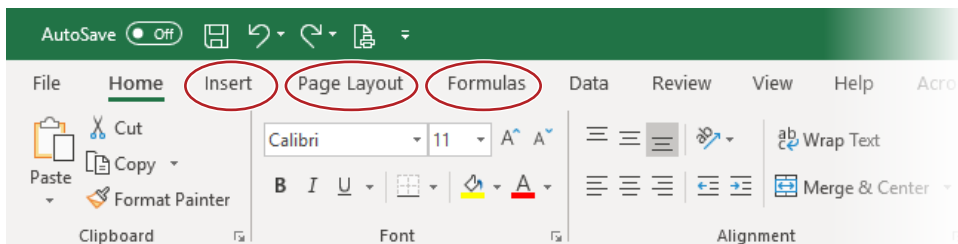
8. While exploring the various tabs, notice the **groups** of related features and commands, such as the **Font** and **Alignment** groups within the **Home** tab.

9. Within some of the groups, notice the diagonal arrow in the bottom right corner. This is the **Dialog Box Launcher** for that group. Click on one to see the dialog box it opens. Click the cancel button to close the dialog box.

10. Click on a few of the **Drop-down Menus** and notice the different tool options.

11. Hover your mouse over different positions of the active cell and notice how your cursor changes.

12. Hover over row labels and column labels and notice how your cursor changes to solid filled arrows.

13. Hover between row labels and between column labels and notice how your cursor changes to a double-headed arrow.

14. Use the slider on the **View Controls** at the bottom right of the document to increase and decrease the zoom setting of your page (as shown below):
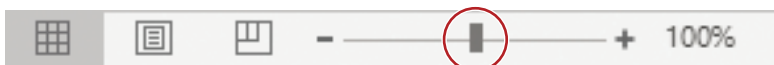
15. Close Excel by clicking on the **X** icon in the top right corner of the window.

➔ *Note: Do not save your workbook.*

For Evaluation Purposes Only
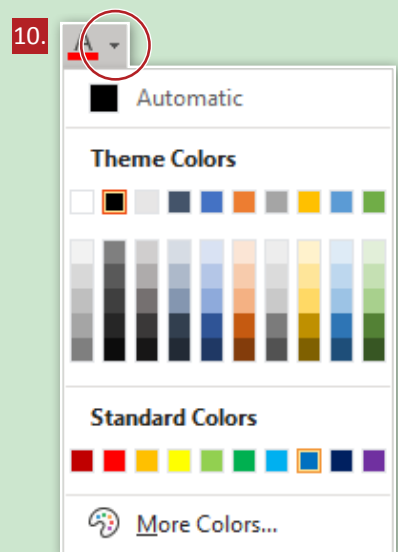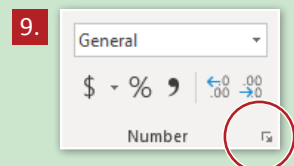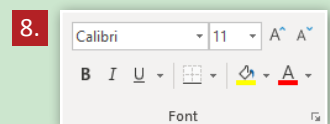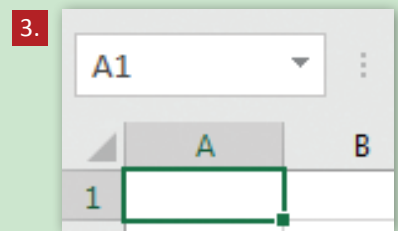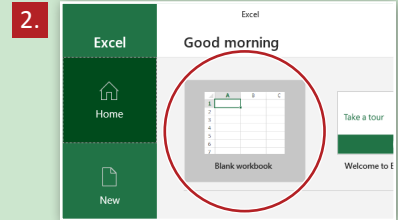
Part 2: Formatting Data

Cinnamon Roll Recipe

Applying Enhanced Alignment Tools

Lesson Overview

Microsoft Excel 2019 has many enhanced alignment tools to help with the look of your spreadsheet. Add visual interest to your work by rotating text vertically in a cell. Merging and centering text across multiple cells can help bring attention to a worksheet's title or section heading, while indenting text within a range gives your work a uniform look without having to manually hit the space bar in each cell.

In this lesson, you will create a new worksheet containing a recipe for cinnamon swirl rolls. You will be introduced to enhanced alignment tools to help your recipe look professional.

Tools & Terms

Review the following tools that you will learn and practice using in this lesson. In addition, you may be required to demonstrate your knowledge of these tools by completing the Skills Mastery Quizzes for this part.

Orientation:
Use this icon to rotate your text diagonally or vertically.

Increase Indent:
Use this icon to move your content farther away from the cell border.

Decrease Indent:
Use this icon to move your content closer to the cell border.

Wrap Text:
Use this icon to wrap extra-long text into multiple lines so you can see all of it.
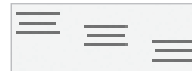
Vertical Cell Alignment:

Top Align:
Use this icon to align the content at the top of the cell.

Middle Align:
Use this icon to center the content between the top and bottom of the cell.

Bottom Align:
Use this icon to align the content to the bottom of the cell.

Merge & Center:
Use this icon to combine and center the contents of the selected cells in a new larger cell.

[Excel ribbon interface shown at top of page]

5.
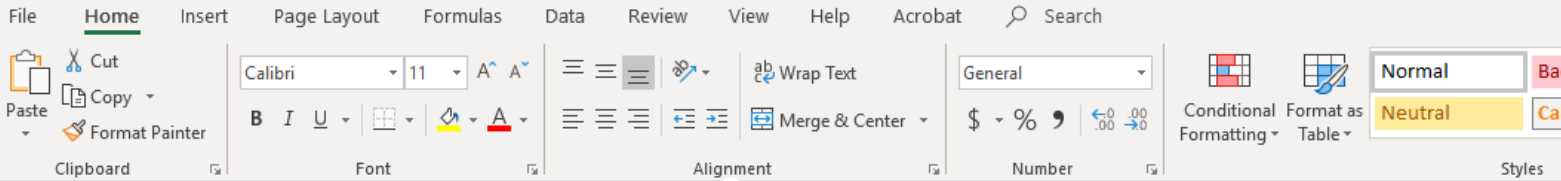
Instructions

1. Using Excel 2019, create a new Blank workbook.

2. Save the file as *2.4 Cinnamon Roll Recipe* in your **My Excel Projects** folder on your hard drive or network drive.

3. Key the data as shown in *Figure 2.4 A*.

   ⊕ *Note: Unless otherwise noted, resize the column widths to fit cell contents.*
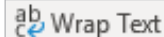
4. Make the following formatting changes:

   a. Change the width of columns B to 45 and C to 30.

   b. Bold cells B3, C3, and C7.

   c. Italicize cells B15 through B35 and change the font size to 10.

5. From the **Home** tab, **Alignment** group, do the following:

   a. Select cells B3 through C13 and **increase the indent** one time.

   b. Select cells B3, C3, and C7 and **decrease the indent** one time.

   c. Increase the indent of cells B15 through B35 one time.

   d. **Wrap the Text** in cell B37.

   e. Select cells A1 through C1 and **Merge & Center**.

   f. Change the font size of cell A1 to 18 and the font color to Blue.

   g. Select cells A3 through A13, bold the text, merge and center, then from the **Orientation** drop-down menu, select **Vertical Text**.

   h. Select cells A15 through A35, bold the text, merge and center, apply Vertical Text orientation, and **Middle Align**.

   i. Change the width of column A to 12.

6. Apply Blue, Accent 5, Lighter 80% fill color to cells A3 and A15.

7. Proofread your work for accuracy, then resave the file.

8. Print preview. Your worksheet should look similar to *Figure 2.4 B*.

9. Print or share the worksheet if required by your instructor.

5g. *[Orientation drop-down menu showing: Angle Counterclockwise, Angle Clockwise, Vertical Text (circled), Rotate Text Up, Rotate Text Down, Format Cell Alignment]*

Figure 2.4 A

	A	B	C	D
1		Cinnamon Swirl Rolls		
2				
3	INGREDIENTS	Dough	Filling	
4		1/2 cup milk	2 tablespoons ground cinnamon	
5		4 tablespoons unsalted butter	1/3 cup sugar	
6		2 large eggs		
7		1 tablespoon milk	Frosting	
8		2 tablespoons milk	1 1/4 cups confectioners sugar	
9		1 package dry active yeast	1/2 teaspoon vanilla extract	
10		1/2 cup warm water	2 tablespoons milk	
11		1/3 cup sugar		
12		1 1/2 teaspoons table salt		
13		3 1/2 - 3 3/4 cups unbleached all-purpose flour		
14				
15	DIRECTIONS	1. For the dough, heat milk and butter until butter melts. Cool.		
16		2. Meanwhile, sprinkle yeast over warm water in bowl.		
17		3. Beat in sugar and eggs.		
18		4. Add salt, butter and milk mixture, and 2 cups of flour; mix until blended, about 1 minute.		
19		5. Add 1 1/4 cups flour, and knead for 10 minutes until dough is smooth.		
20		6. Turn dough onto work surface.		
21		7. If dough is sticky, knead in up to 1/2 additional cup flour to form a smooth, soft, elastic dough.		
22		8. Transfer dough to a very lightly oiled large plastic container or bowl.		
23		9. Cover top of container with plastic wrap and let rise until double in size, 2 to 2 1/2 hours.		
24		10. After rise, punch down center of dough once.		
25		11. Turn dough onto unfloured work surface; let dough rest about 10 minutes.		
26		12. Grease a 13-by-9-inch baking pan.		
27		13. For the filling, mix sugar and cinnamon in small bowl.		
28		14. Roll dough with rolling pin into an evenly shaped 12-by-16-inch rectangle.		
29		15. Brush dough with milk and sprinkle with cinnamon-sugar mixture.		
30		16. Roll, beginning with the long side of the rectangle.		
31		17. Cut the roll into 12 equal pieces and arrange cut side up in prepared pan.		
32		18. Cover pan with plastic wrap and let rolls rise for 1 hour.		
33		19. While dough rises, preheat the oven to 350 degrees.		
34		20. Bake for 25 to 30 minutes uncovered. Let rest for 10 minutes before frosting.		
35		21. For the frosting, mix confectioners sugar, milk, and vanilla.		
36				
37		This delicious recipe serves 6-8 people, and is sure to be a hit with family and friends alike.		

Figure 2.4 B

Cinnamon Swirl Rolls

I N G R E D I E N T S

Dough
1/2 cup milk
4 tablespoons unsalted butter
2 large eggs
1 tablespoon milk
2 tablespoons milk
1 package dry active yeast
1/2 cup warm water
1/3 cup sugar
1 1/2 teaspoons table salt
3 1/2 - 3 3/4 cups unbleached all-purpose flour

Filling
2 tablespoons ground cinnamon
1/3 cup sugar

Frosting
1 1/4 cups confectioners sugar
1/2 teaspoon vanilla extract
2 tablespoons milk

D I R E C T I O N S

1. For the dough, heat milk and butter until butter melts. Cool.
2. Meanwhile, sprinkle yeast over warm water in bowl.
3. Beat in sugar and eggs.
4. Add salt, butter and milk mixture, and 2 cups of flour; mix until blended, about 1 minute.
5. Add 1 1/4 cups flour, and knead for 10 minutes until dough is smooth.
6. Turn dough onto work surface.
7. If dough is sticky, knead in up to 1/2 additional cup flour to form a smooth, soft, elastic dough.
8. Transfer dough to a very lightly oiled large plastic container or bowl.
9. Cover top of container with plastic wrap and let rise until double in size, 2 to 2 1/2 hours.
10. After rise, punch down center of dough once.
11. Turn dough onto unfloured work surface; let dough rest about 10 minutes.
12. Grease a 13-by-9-inch baking pan.
13. For the filling, mix sugar and cinnamon in small bowl.
14. Roll dough with rolling pin into an evenly shaped 12-by-16-inch rectangle.
15. Brush dough with milk and sprinkle with cinnamon-sugar mixture.
16. Roll, beginning with the long side of the rectangle.
17. Cut the roll into 12 equal pieces and arrange cut side up in prepared pan.
18. Cover pan with plastic wrap and let rolls rise for 1 hour.
19. While dough rises, preheat the oven to 350 degrees.
20. Bake for 25 to 30 minutes uncovered. Let rest for 10 minutes before frosting.
21. For the frosting, mix confectioners sugar, milk, and vanilla.

This delicious recipe serves 6-8 people, and is sure to be
a hit with family and friends alike.

Part 2: Formatting Data

Fitness Class Schedule

Applying Conditional Formatting

Skills

- Apply built-in conditional formatting

Lesson Overview
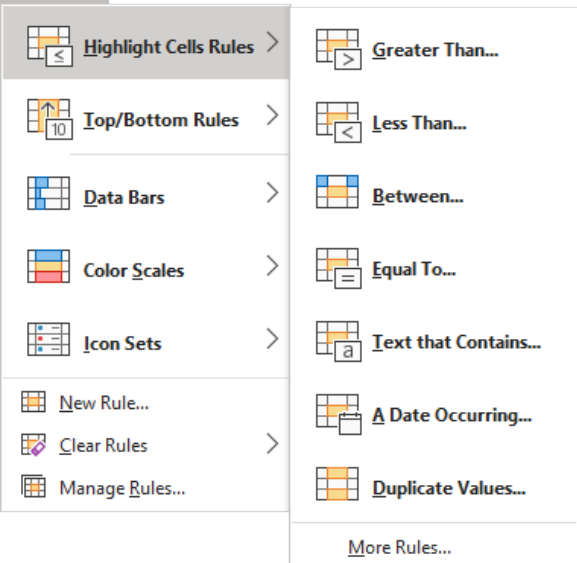
Working smart means letting Microsoft Excel 2019 do tedious work for you. Highlighting trends and patterns in your data can help the reader spot what is most important about the information presented and assist in decision making. Conditional formatting scans your worksheet for criteria and when the condition you specify is met, the cell range is formatted with highlighting colors, bars, or icons.

In this lesson, you will create a new worksheet showing the attendance of classes at a fitness center. You will then format the worksheet to identify the classes with the highest and lowest attendance.

Tools & Terms

Review the following tool that you will learn and practice using in this lesson. In addition, you may be required to demonstrate your knowledge of this tool by completing the Skills Mastery Quizzes for this part.

Conditional Formatting:
Use this drop-down menu to apply bars, colors, and icons to highlight trends and patterns in your data.

General		Normal	Bad	Good		Insert	Delete	Format	∑ AutoSum		

Conditional Formatting ▾ Format as Table ▾

Neutral Calculation Check Cell

Sort & Filter ▾ Find & Select ▾ Ideas

Number Styles Cells Editing Ideas

5a.
5c.
5b.
5d.

5.

Instructions

1. Using Excel 2019, create a new Blank workbook.

2. Save the file as *2.6 Fitness Class Schedule* in your **My Excel Projects** folder on your hard drive or network drive.

3. Key the data as shown in *Figure 2.6 A*.

   ↪ *Note: Unless otherwise noted, resize the column widths to fit cell contents.*

4. Make the following formatting changes:

   a. Change the font size of cell A1 to 26.

   b. Change the font size of cell A2 to 18.

   c. Change the font size of cell A3 to 12.

   d. Merge and center cell A1 across columns A through H.

   e. Merge and center cell A2 across columns A through H.

   f. Merge and center cell A3 across columns A through H.

   g. Bold row 5 and change the font size to 12.

   h. Bold cells A6 through A13 and change the font size to 12.

5. From the **Home** tab, **Styles** group, do the following:

   a. Select cells B6 through H13, then from the **Conditional Formatting, Highlight Cells Rules** drop-down menu select **Greater Than...**.

   b. From the **Greater Than** dialog box, key [30] in the **Format cells that are GREATER THAN:** field with **Green Fill with Dark Green Text**, then click **OK**.

   c. From the **Conditional Formatting, Highlight Cells Rules** drop-down menu select **Less Than...**.

   d. From the **Less Than** dialog box, key [10] in the **Format cells that are LESS THAN:** field with **Light Red Fill with Dark Red Text**, then click **OK**.

6. Proofread your work for accuracy, then resave the file.

7. Print preview. Your worksheet should look similar to *Figure 2.6 B*.
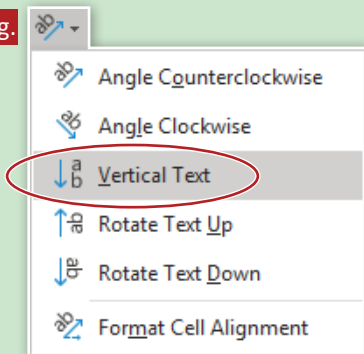
8. Print your worksheet if required by your instructor.

For Evaluation Purposes Only

Learn-by-Doing: Microsoft Office Specialist Excel 2019
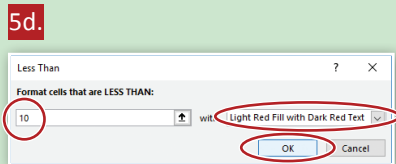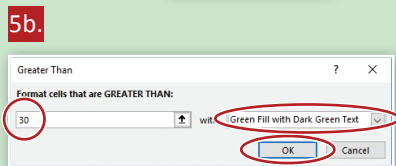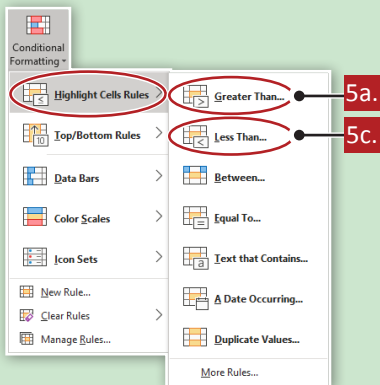
Figure 2.6 A

	A	B	C	D	E	F	G	H
1	Power Up Fitness							
2	Class Attendance							
3	Week of August 1st							
4								
5	Class	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6	Power Yoga	12	23	9	33	21	17	31
7	CrossFit	8	12	33	19	20	5	16
8	Spinning	22	27	25	8	14	27	37
9	Circuit Training	16	9	14	31	34	32	18
10	Raise the Barre	38	21	27	14	19	9	36
11	Totally Toned	7	28	22	29	18	14	11
12	Zumba	10	34	29	22	16	13	32
13	Kickboxing	38	18	40	4	21	29	16

For Evaluation Purposes Only

Figure 2.6 B

Power Up Fitness
Class Attendance
Week of August 1st

Class	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Power Yoga	12	23	9	33	21	17	31
CrossFit	8	12	33	19	20	5	16
Spinning	22	27	25	8	14	27	37
Circuit Training	16	9	14	31	34	32	18
Raise the Barre	38	21	27	14	19	9	36
Totally Toned	7	28	22	29	18	14	11
Zumba	10	34	29	22	16	13	32
Kickboxing	38	18	40	4	21	29	16

Part 4: Working with Numbers and Formulas

Student Information

Formatting Text with Functions

Lesson Overview

There are many text functions that can assist you in presenting spreadsheet data. Microsoft Excel 2019 is equipped with the UPPER, LOWER, and PROPER functions, which allow you to change the case of characters. Use RIGHT and LEFT to return the leftmost or rightmost characters of a cell. The MID function will return any number of characters you specify from any position in a cell. Although there are a few different text functions that can combine text, CONCAT is especially useful for joining the contents of several cells into one cell. The values of cell contents that have been formatted with text functions can then be copied and pasted into new worksheets or other programs.

In this lesson, you will use text functions to modify a list of student names and ID numbers.

In order to complete this lesson, access to a lesson resource file is required and should be provided by your instructor.

Skills

- Format text by using RIGHT(), LEFT(), and MID() functions
- Format text by using UPPER() and LOWER() functions
- Format text by using the CONCAT() function
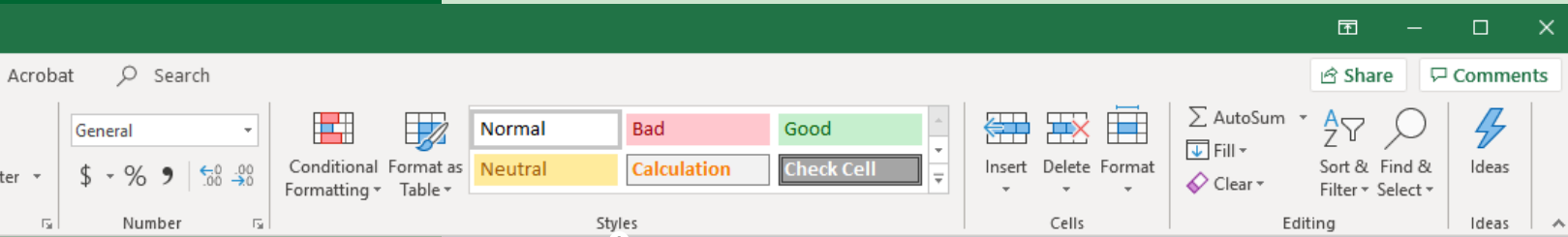- Format text by using the PROPER() function

---

Tools & Terms

Review the following tools that you will learn and practice using in this lesson. In addition, you may be required to demonstrate your knowledge of these tools by completing the Skills Mastery Quizzes for this part.

| ✕ ✓ *fx* | =RIGHT(K2,4) |

RIGHT:
Use this function to extract one or more content characters from the right out of an existing cell.

| ✕ ✓ *fx* | =LEFT(F2) |

LEFT:
Use this function to extract one or more content characters from the left out of an existing cell.

| ✕ ✓ *fx* | =MID(A2, 4, 2) |

MID:
Use this function to extract one or more content characters from the middle out of an existing cell.

| ✕ ✓ *fx* | =UPPER(C2) |

UPPER:
Use this function to extract and change all characters to upper case from an existing cell.

| ✕ ✓ *fx* | =LOWER(D2) |

LOWER:
Use this function to extract and change all characters to lower case from an existing cell.

| ✕ ✓ *fx* | =PROPER(G2) |

PROPER:
Use this function to extract and change all characters to sentence case from an existing cell.

| ✕ ✓ *fx* | =CONCAT(F2," ",H2) |

CONCAT:
Use this function to extract and combine contents of cells or ranges, as well as other characters, into a new cell.
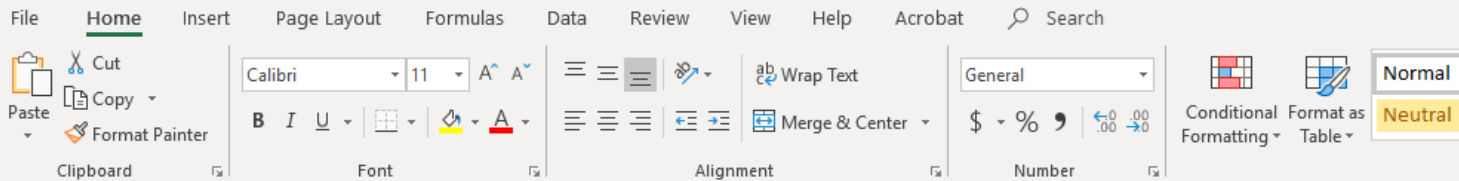
Instructions

1. Launch Excel 2019 and open the file named *Lesson 4.10 SOURCE*.

2. Save the file as *4.10 Student Information* in your **My Excel Projects** folder on your hard drive or network drive.

3. Make the following formatting changes:

    a. Bold row 1.

    b. Insert a column between Timestamp and Email and key the text [Day Entered] as the column heading.

    c. Insert two columns between Email and First Name and key the text [Email Uppercase] and [Email Lowercase] as the column headings. These now become columns D and E.

    d. Insert three columns between Last Name and Student ID # and key the text [Last Name Proper], [Full Name], and [First Initial]. These now become columns H, I, and J.

    e. Key the text [Last 4 Digits of ID] as the column heading in cell L1.

    f. Fill newly created columns B, D, E, H, I, J, and L with Green, Accent 6, Lighter 80%.

    g. Apply a thick bottom border to cells A1 through L1.

4. In cell B2, use the **MID** function to extract the characters representing the day of the month from cell A2.

    a. Use the following formula: **=MID(A2,4,2)**

       ⊖ *Note: This function will take two characters from cell A2 beginning with the fourth character.*

    b. Copy the function down for the remaining timestamps.

    c. Center column B.

5. In cell D2, use the **UPPER** function to copy the contents of cell C2 in all uppercase.

    a. Use the following formula: **=UPPER(C2)**

    b. Copy the function down for the remaining email addresses.

6. In cell E2, use the **LOWER** function to copy the contents of cell D2 in all lowercase.

    a. Use the following formula: **=LOWER(D2)**

    b. Copy the function down for the remaining email addresses.

For Evaluation Purposes Only
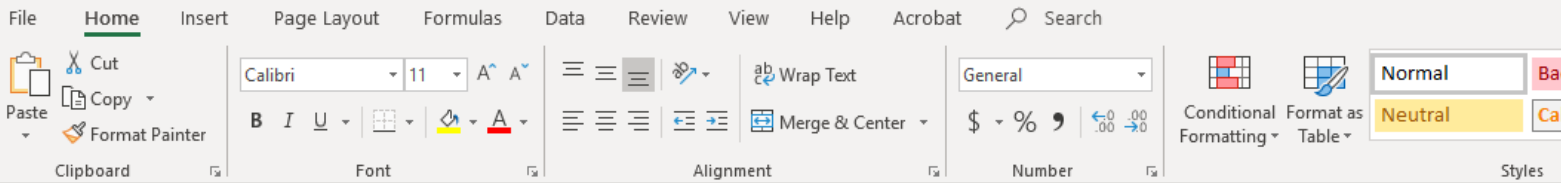
7. In cell H2, use the **PROPER** function to copy the contents of cell G2 in proper case.

    a. Use the following formula: **=PROPER(G2)**

    b. Copy the function down for the remaining last names.

8. In cell I2, use the **CONCAT** function to combine the contents of cells F2 and H2 with a space between first and last name.

    a. Use the following formula: **=CONCAT(F2,“ “,H2)**

    b. Copy the function down for the remaining names.

9. In cell J2, use the **LEFT** function to copy the first character from cell I2.

    a. Use the following formula: **=LEFT(I2,1)**

    b. Copy the function down for the remaining first initials.

    c. Center column J.

10. In cell L2, use the **RIGHT** function to copy the last four characters from cell K2.

    a. Use the following formula: **=RIGHT(K2,4)**

    b. Copy the function down for the remaining student IDs.

    c. Center column L.

11. Resize the columns to fit cell contents.

12. Scale the worksheet to fit one page wide and set row 1 to repeat at the top of all pages.

13. Select cells A1 through L100 and set the print area.

14. Proofread your work for accuracy, then resave the file.

15. Print preview. Your worksheet should look similar to *Figure 4.10, Pages 1 and 2*.

16. Print your worksheet if required by your instructor.

Learn-by-Doing: Microsoft Office Specialist Excel 2019

Figure 4.10, Page 1

Timestamp	Day Entered	Email	Email Uppercase	Email Lowercase	First Name	Last Name	Last Name Proper	Full Name	First Initial	Student ID #	Last 4 Digits of ID
12/11/2017 6:46:35 PM	11	Felix_Miles@nphs.net	FELIX_MILES@NPHS.NET	felix_miles@nphs.net	Felix	MILES	Miles	Felix Miles	F	20030595	0595
12/13/2017 1:33:54 PM	13	Lila_Carson@nphs.net	LILA_CARSON@NPHS.NET	lila_carson@nphs.net	Lila	CARSON	Carson	Lila Carson	L	20055290	5290
12/18/2017 12:47:11 AM	18	Rita_Hernandez@nphs.net	RITA_HERNANDEZ@NPHS.NET	rita_hernandez@nphs.net	Rita	HERNANDEZ	Hernandez	Rita Hernandez	R	20065602	5602
12/27/2017 5:29:34 PM	27	Samuel_Richards@nphs.net	SAMUEL_RICHARDS@NPHS.NET	samuel_richards@nphs.net	Samuel	RICHARDS	Richards	Samuel Richards	S	20051508	1508
12/02/2017 3:18:03 PM	02	Lamar_Harris@nphs.net	LAMAR_HARRIS@NPHS.NET	lamar_harris@nphs.net	Lamar	HARRIS	Harris	Lamar Harris	L	20036572	6572
12/26/2017 10:09:11 AM	26	Jason_Allen@nphs.net	JASON_ALLEN@NPHS.NET	jason_allen@nphs.net	Jason	ALLEN	Allen	Jason Allen	J	20061091	1091
12/15/2017 10:58:59 PM	15	Ira_Poole@nphs.net	IRA_POOLE@NPHS.NET	ira_poole@nphs.net	Ira	POOLE	Poole	Ira Poole	I	20032695	2695
12/22/2017 9:22:04 AM	22	Ryan_Page@nphs.net	RYAN_PAGE@NPHS.NET	ryan_page@nphs.net	Ryan	PAGE	Page	Ryan Page	R	20047205	7205
12/16/2017 4:43:43 AM	16	Michael_Sanchez@nphs.net	MICHAEL_SANCHEZ@NPHS.NET	michael_sanchez@nphs.net	Michael	SANCHEZ	Sanchez	Michael Sanchez	M	20060469	0469
12/03/2017 7:25:50 AM	03	Krystal_Nunez@nphs.net	KRYSTAL_NUNEZ@NPHS.NET	krystal_nunez@nphs.net	Krystal	NUNEZ	Nunez	Krystal Nunez	K	20039072	9072
12/09/2017 4:16:39 AM	09	Kristen_Hogan@nphs.net	KRISTEN_HOGAN@NPHS.NET	kristen_hogan@nphs.net	Kristen	HOGAN	Hogan	Kristen Hogan	K	20043670	3670
12/19/2017 11:36:38 PM	19	Delia_Knight@nphs.net	DELIA_KNIGHT@NPHS.NET	delia_knight@nphs.net	Delia	KNIGHT	Knight	Delia Knight	D	20075167	5167
12/18/2017 9:47:56 PM	18	Jamie_Harris@nphs.net	JAMIE_HARRIS@NPHS.NET	jamie_harris@nphs.net	Jamie	HARRIS	Harris	Jamie Harris	J	20051307	1307
12/11/2017 5:51:08 AM	11	Meredith_Allen@nphs.net	MEREDITH_ALLEN@NPHS.NET	meredith_allen@nphs.net	Meredith	ALLEN	Allen	Meredith Allen	M	20072797	2797
12/18/2017 10:12:09 PM	18	Alison_Poole@nphs.net	ALISON_POOLE@NPHS.NET	alison_poole@nphs.net	Alison	POOLE	Poole	Alison Poole	A	20068823	8823
12/10/2017 6:04:58 AM	10	Stacy_Page@nphs.net	STACY_PAGE@NPHS.NET	stacy_page@nphs.net	Stacy	PAGE	Page	Stacy Page	S	20039946	9946
12/08/2017 1:26:17 AM	08	Isaac_Naughton@nphs.net	ISAAC_NAUGHTON@NPHS.NET	isaac_naughton@nphs.net	Isaac	NAUGHTON	Naughton	Isaac Naughton	I	20047736	7736
12/24/2017 11:53:22 AM	24	Hunter_Damm@nphs.net	HUNTER_DAMM@NPHS.NET	hunter_damm@nphs.net	Hunter	DAMM	Damm	Hunter Damm	H	20058232	8232
12/05/2017 9:47:14 AM	05	Christina_Sanchez@nphs.net	CHRISTINA_SANCHEZ@NPHS.NET	christina_sanchez@nphs.net	Christina	SANCHEZ	Sanchez	Christina Sanchez	C	20057016	7016
12/29/2017 9:10:57 AM	29	Maurice_Figueroa@nphs.net	MAURICE_FIGUEROA@NPHS.NET	maurice_figueroa@nphs.net	Maurice	FIGUEROA	Figueroa	Maurice Figueroa	M	20043354	3354
12/24/2017 11:56:38 PM	24	Ernesto_Cedes@nphs.net	ERNESTO_CEDES@NPHS.NET	ernesto_cedes@nphs.net	Ernesto	CEDES	Cedes	Ernesto Cedes	E	20052625	2625
12/12/2017 6:47:07 PM	12	Laurene_Culpepper@nphs.net	LAURENE_CULPEPPER@NPHS.NET	laurene_culpepper@nphs.net	Laurene	CULPEPPER	Culpepper	Laurene Culpepper	L	20075954	5954
12/28/2017 9:13:23 AM	28	Sydney_Ratcliff@nphs.net	SYDNEY_RATCLIFF@NPHS.NET	sydney_ratcliff@nphs.net	Sydney	RATCLIFF	Ratcliff	Sydney Ratcliff	S	20031524	1524
12/09/2017 2:30:10 PM	09	Vincenza_Scanlon@nphs.net	VINCENZA_SCANLON@NPHS.NET	vincenza_scanlon@nphs.net	Vincenza	SCANLON	Scanlon	Vincenza Scanlon	V	20034831	4831
12/15/2017 6:32:17 PM	15	Ty_Valles@nphs.net	TY_VALLES@NPHS.NET	ty_valles@nphs.net	Ty	VALLES	Valles	Ty Valles	T	20077910	7910
12/02/2017 12:07:26 AM	02	Jerica_Shuman@nphs.net	JERICA_SHUMAN@NPHS.NET	jerica_shuman@nphs.net	Jerica	SHUMAN	Shuman	Jerica Shuman	J	20059942	9942
12/25/2017 4:20:08 PM	25	Hien_Gatlin@nphs.net	HIEN_GATLIN@NPHS.NET	hien_gatlin@nphs.net	Hien	GATLIN	Gatlin	Hien Gatlin	H	20073426	3426
12/14/2017 9:33:35 AM	14	Marth_Benner@nphs.net	MARTH_BENNER@NPHS.NET	marth_benner@nphs.net	Marth	BENNER	Benner	Marth Benner	M	20076553	6553
12/19/2017 3:22:47 AM	19	Debra_Buckner@nphs.net	DEBRA_BUCKNER@NPHS.NET	debra_buckner@nphs.net	Debra	BUCKNER	Buckner	Debra Buckner	D	20060444	0444
12/20/2017 11:32:54 AM	20	Jack_Huffington@nphs.net	JACK_HUFFINGTON@NPHS.NET	jack_huffington@nphs.net	Jack	HUFFINGTON	Huffington	Jack Huffington	J	20071765	1765
12/12/2017 1:10:21 AM	12	Brandon_Vargas@nphs.net	BRANDON_VARGAS@NPHS.NET	brandon_vargas@nphs.net	Brandon	VARGAS	Vargas	Brandon Vargas	B	20044286	4286
12/24/2017 1:34:40 PM	24	Leland_Garner@nphs.net	LELAND_GARNER@NPHS.NET	leland_garner@nphs.net	Leland	GARNER	Garner	Leland Garner	L	20062234	2234
12/22/2017 12:23:27 PM	22	Patrick_Thomas@nphs.net	PATRICK_THOMAS@NPHS.NET	patrick_thomas@nphs.net	Patrick	THOMAS	Thomas	Patrick Thomas	P	20057963	7963
12/28/2017 2:17:26 PM	28	Ashlie_Locke@nphs.net	ASHLIE_LOCKE@NPHS.NET	ashlie_locke@nphs.net	Ashlie	LOCKE	Locke	Ashlie Locke	A	20056857	6857
12/30/2017 11:15:29 PM	30	Josh_Singleton@nphs.net	JOSH_SINGLETON@NPHS.NET	josh_singleton@nphs.net	Josh	SINGLETON	Singleton	Josh Singleton	J	20079391	9391
12/09/2017 12:52:59 AM	09	Noel_Swanson@nphs.net	NOEL_SWANSON@NPHS.NET	noel_swanson@nphs.net	Noel	SWANSON	Swanson	Noel Swanson	N	20045855	5855
12/15/2017 4:26:39 PM	15	Anna_Williams@nphs.net	ANNA_WILLIAMS@NPHS.NET	anna_williams@nphs.net	Anna	WILLIAMS	Williams	Anna Williams	A	20060967	0967
12/19/2017 4:22:49 PM	19	Emily_Collins@nphs.net	EMILY_COLLINS@NPHS.NET	emily_collins@nphs.net	Emily	COLLINS	Collins	Emily Collins	E	20066561	6561
12/05/2017 11:28:21 AM	05	Petra_Thompson@nphs.net	PETRA_THOMPSON@NPHS.NET	petra_thompson@nphs.net	Petra	THOMPSON	Thompson	Petra Thompson	P	20076430	6430
12/16/2017 7:20:47 PM	16	Oseas_Taylor@nphs.net	OSEAS_TAYLOR@NPHS.NET	oseas_taylor@nphs.net	Oseas	TAYLOR	Taylor	Oseas Taylor	O	20045893	5893
12/30/2017 7:26:01 PM	30	Hector_Diaz@nphs.net	HECTOR_DIAZ@NPHS.NET	hector_diaz@nphs.net	Hector	DIAZ	Diaz	Hector Diaz	H	20045913	5913
12/15/2017 6:03:29 AM	15	Lana_Martinez@nphs.net	LANA_MARTINEZ@NPHS.NET	lana_martinez@nphs.net	Lana	MARTINEZ	Martinez	Lana Martinez	L	20035482	5482
12/01/2017 11:27:15 PM	01	Tieming_Zhang@nphs.net	TIEMING_ZHANG@NPHS.NET	tieming_zhang@nphs.net	Tieming	ZHANG	Zhang	Tieming Zhang	T	20054119	4119
12/29/2017 3:18:59 PM	29	Phoebe_Bryant@nphs.net	PHOEBE_BRYANT@NPHS.NET	phoebe_bryant@nphs.net	Phoebe	BRYANT	Bryant	Phoebe Bryant	P	20079788	9788
12/16/2017 5:33:38 PM	16	John_Liu@nphs.net	JOHN_LIU@NPHS.NET	john_liu@nphs.net	John	LIU	Liu	John Liu	J	20074899	4899
12/02/2017 10:33:05 AM	02	Rebekah_Miller@nphs.net	REBEKAH_MILLER@NPHS.NET	rebekah_miller@nphs.net	Rebekah	MILLER	Miller	Rebekah Miller	R	20032633	2633
12/17/2017 7:43:22 AM	17	Evelyn_Williams@nphs.net	EVELYN_WILLIAMS@NPHS.NET	evelyn_williams@nphs.net	Evelyn	WILLIAMS	Williams	Evelyn Williams	E	20042608	2608
12/25/2017 10:48:54 AM	25	Elizabeth_Cox@nphs.net	ELIZABETH_COX@NPHS.NET	elizabeth_cox@nphs.net	Elizabeth	COX	Cox	Elizabeth Cox	E	20046776	6776
12/27/2017 3:44:40 PM	27	Katie_Lee@nphs.net	KATIE_LEE@NPHS.NET	katie_lee@nphs.net	Katie	LEE	Lee	Katie Lee	K	20078551	8551
12/11/2017 2:41:11 AM	11	George_Ross@nphs.net	GEORGE_ROSS@NPHS.NET	george_ross@nphs.net	George	ROSS	Ross	George Ross	G	20074045	4045
12/02/2017 7:38:11 AM	02	Daniel_Washington@nphs.net	DANIEL_WASHINGTON@NPHS.NET	daniel_washington@nphs.net	Daniel	WASHINGTON	Washington	Daniel Washington	D	20066701	6701
12/30/2017 7:02:08 PM	30	Brynn_Clark@nphs.net	BRYNN_CLARK@NPHS.NET	brynn_clark@nphs.net	Brynn	CLARK	Clark	Brynn Clark	B	20050503	0503
12/14/2017 2:41:07 PM	14	Kevin_Walker@nphs.net	KEVIN_WALKER@NPHS.NET	kevin_walker@nphs.net	Kevin	WALKER	Walker	Kevin Walker	K	20062378	2378
12/10/2017 9:29:32 AM	10	Janey_Patterson@nphs.net	JANEY_PATTERSON@NPHS.NET	janey_patterson@nphs.net	Janey	PATTERSON	Patterson	Janey Patterson	J	20059280	9280
12/24/2017 10:46:32 AM	24	Tannen_Hill@nphs.net	TANNEN_HILL@NPHS.NET	tannen_hill@nphs.net	Tannen	HILL	Hill	Tannen Hill	T	20075322	5322
12/03/2017 9:57:32 PM	03	Siobhan_Taylor@nphs.net	SIOBHAN_TAYLOR@NPHS.NET	siobhan_taylor@nphs.net	Siobhan	TAYLOR	Taylor	Siobhan Taylor	S	20042201	2201

Figure 4.10, Page 2

Timestamp	Day Entered	Email	Email Uppercase	Email Lowercase	First Name	Last Name	Last Name Proper	Full Name	First Initial	Student ID #	Last 4 Digits of ID
12/28/2017 5:54:31 PM	28	Mila_Blenrow@nphs.net	MILA_BLENROW@NPHS.NET	mila_blenrow@nphs.net	Mila	BLENROW	Blenrow	Mila Blenrow	M	20076453	6453
12/07/2017 7:58:25 AM	07	Carmen_Baird@nphs.net	CARMEN_BAIRD@NPHS.NET	carmen_baird@nphs.net	Carmen	BAIRD	Baird	Carmen Baird	C	20072446	2446
12/05/2017 6:35:27 AM	05	Yvette_Britt@nphs.net	YVETTE_BRITT@NPHS.NET	yvette_britt@nphs.net	Yvette	BRITT	Britt	Yvette Britt	Y	20047945	7945
12/17/2017 10:22:02 PM	17	Caitlin_Nesmith@nphs.net	CAITLIN_NESMITH@NPHS.NET	caitlin_nesmith@nphs.net	Caitlin	NESMITH	Nesmith	Caitlin Nesmith	C	20031353	1353
12/28/2017 5:10:49 AM	28	Erik_Sjoberg@nphs.net	ERIK_SJOBERG@NPHS.NET	erik_sjoberg@nphs.net	Erik	SJOBERG	Sjoberg	Erik Sjoberg	E	20042419	2419
12/25/2017 3:56:36 AM	25	Marc_Bergeron@nphs.net	MARC_BERGERON@NPHS.NET	marc_bergeron@nphs.net	Marc	BERGERON	Bergeron	Marc Bergeron	M	20044773	4773
12/10/2017 9:33:37 PM	10	Jeri_Cushman@nphs.net	JERI_CUSHMAN@NPHS.NET	jeri_cushman@nphs.net	Jeri	CUSHMAN	Cushman	Jeri Cushman	J	20065985	5985
12/16/2017 4:56:01 AM	16	Alisha_Belanger@nphs.net	ALISHA_BELANGER@NPHS.NET	alisha_belanger@nphs.net	Alisha	BELANGER	Belanger	Alisha Belanger	A	20061739	1739
12/29/2017 2:44:36 PM	29	Hayden_O'Rourke@nphs.net	HAYDEN_O'ROURKE@NPHS.NET	hayden_o'rourke@nphs.net	Hayden	O'ROURKE	O'Rourke	Hayden O'Rourke	H	20069387	9387
12/09/2017 6:39:20 AM	09	Charlotte_Blackburn@nphs.net	CHARLOTTE_BLACKBURN@NPHS.NET	charlotte_blackburn@nphs.net	Charlotte	BLACKBURN	Blackburn	Charlotte Blackburn	C	20048023	8023
12/22/2017 8:55:19 AM	22	Christopher_Bisson@nphs.net	CHRISTOPHER_BISSON@NPHS.NET	christopher_bisson@nphs.net	Christopher	BISSON	Bisson	Christopher Bisson	C	20045137	5137
12/19/2017 4:29:12 AM	19	Therese_Moniz@nphs.net	THERESE_MONIZ@NPHS.NET	therese_moniz@nphs.net	Therese	MONIZ	Moniz	Therese Moniz	T	20057090	7090
12/03/2017 12:09:38 PM	03	Andrew_Pimental@nphs.net	ANDREW_PIMENTAL@NPHS.NET	andrew_pimental@nphs.net	Andrew	PIMENTAL	Pimental	Andrew Pimental	A	20039145	9145
12/14/2017 5:28:52 AM	14	Jillian_Raymond@nphs.net	JILLIAN_RAYMOND@NPHS.NET	jillian_raymond@nphs.net	Jillian	RAYMOND	Raymond	Jillian Raymond	J	20065247	5247
12/22/2017 9:09:36 AM	22	Alvina_Harman@nphs.net	ALVINA_HARMAN@NPHS.NET	alvina_harman@nphs.net	Alvina	HARMAN	Harman	Alvina Harman	A	20044981	4981
12/02/2017 8:15:26 AM	02	Ling_Ye@nphs.net	LING_YE@NPHS.NET	ling_ye@nphs.net	Ling	YE	Ye	Ling Ye	L	20054315	4315
12/24/2017 3:41:36 AM	24	Celina_Morris@nphs.net	CELINA_MORRIS@NPHS.NET	celina_morris@nphs.net	Celina	MORRIS	Morris	Celina Morris	C	20063307	3307
12/18/2017 8:40:25 PM	18	Zeya_Wu@nphs.net	ZEYA_WU@NPHS.NET	zeya_wu@nphs.net	Zeya	WU	Wu	Zeya Wu	Z	20031334	1334
12/20/2017 12:34:45 AM	20	Dustin_O'Toole@nphs.net	DUSTIN_O'TOOLE@NPHS.NET	dustin_o'toole@nphs.net	Dustin	O'TOOLE	O'Toole	Dustin O'Toole	D	20042046	2046
12/06/2017 6:20:54 AM	06	Ellie_Meehan@nphs.net	ELLIE_MEEHAN@NPHS.NET	ellie_meehan@nphs.net	Ellie	MEEHAN	Meehan	Ellie Meehan	E	20074932	4932
12/29/2017 1:56:34 AM	29	Philip_Reed@nphs.net	PHILIP_REED@NPHS.NET	philip_reed@nphs.net	Philip	REED	Reed	Philip Reed	P	20037039	7039
12/02/2017 4:06:54 PM	02	Logan_Trainer@nphs.net	LOGAN_TRAINER@NPHS.NET	logan_trainer@nphs.net	Logan	TRAINER	Trainer	Logan Trainer	L	20056016	6016
12/03/2017 1:00:20 PM	03	Lelah_North@nphs.net	LELAH_NORTH@NPHS.NET	lelah_north@nphs.net	Lelah	NORTH	North	Lelah North	L	20071627	1627
12/11/2017 12:03:19 PM	11	Rhys_Poulin@nphs.net	RHYS_POULIN@NPHS.NET	rhys_poulin@nphs.net	Rhys	POULIN	Poulin	Rhys Poulin	R	20059986	9986
12/12/2017 3:04:27 AM	12	Melanie_Stoddard@nphs.net	MELANIE_STODDARD@NPHS.NET	melanie_stoddard@nphs.net	Melanie	STODDARD	Stoddard	Melanie Stoddard	M	20074655	4655
12/01/2017 3:07:24 PM	01	Antonio_Basso@nphs.net	ANTONIO_BASSO@NPHS.NET	antonio_basso@nphs.net	Antonio	BASSO	Basso	Antonio Basso	A	20060231	0231
12/09/2017 12:07:54 PM	09	Gabriela_Hsu@nphs.net	GABRIELA_HSU@NPHS.NET	gabriela_hsu@nphs.net	Gabriela	HSU	Hsu	Gabriela Hsu	G	20066032	6032
12/17/2017 1:21:20 AM	17	Glorimar_Perez@nphs.net	GLORIMAR_PEREZ@NPHS.NET	glorimar_perez@nphs.net	Glorimar	PEREZ	Perez	Glorimar Perez	G	20076391	6391
12/13/2017 12:19:19 AM	13	Busayna_Bentahila@nphs.net	BUSAYNA_BENTAHILA@NPHS.NET	busayna_bentahila@nphs.net	Busayna	BENTAHILA	Bentahila	Busayna Bentahila	B	20052681	2681
12/29/2017 12:10:13 PM	29	Daisy_Li@nphs.net	DAISY_LI@NPHS.NET	daisy_li@nphs.net	Daisy	LI	Li	Daisy Li	D	20070270	0270
12/05/2017 2:21:37 AM	05	Diego_Rosas@nphs.net	DIEGO_ROSAS@NPHS.NET	diego_rosas@nphs.net	Diego	ROSAS	Rosas	Diego Rosas	D	20038106	8106
12/26/2017 12:59:00 AM	26	Maribel_Easton@nphs.net	MARIBEL_EASTON@NPHS.NET	maribel_easton@nphs.net	Maribel	EASTON	Easton	Maribel Easton	M	20051510	1510
12/24/2017 12:05:21 PM	24	Benito_Alvarez@nphs.net	BENITO_ALVAREZ@NPHS.NET	benito_alvarez@nphs.net	Benito	ALVAREZ	Alvarez	Benito Alvarez	B	20030967	0967
12/15/2017 10:33:52 PM	15	Emmanuel_Donovan@nphs.net	EMMANUEL_DONOVAN@NPHS.NET	emmanuel_donovan@nphs.net	Emmanuel	DONOVAN	Donovan	Emmanuel Donovan	E	20074648	4648
12/15/2017 12:10:38 AM	15	Jacqui_Prosser@nphs.net	JACQUI_PROSSER@NPHS.NET	jacqui_prosser@nphs.net	Jacqui	PROSSER	Prosser	Jacqui Prosser	J	20074337	4337
12/09/2017 11:49:31 AM	09	Nicholas_Silvia@nphs.net	NICHOLAS_SILVIA@NPHS.NET	nicholas_silvia@nphs.net	Nicholas	SILVIA	Silvia	Nicholas Silvia	N	20032814	2814
12/20/2017 3:55:29 PM	20	Meagan_Rangel@nphs.net	MEAGAN_RANGEL@NPHS.NET	meagan_rangel@nphs.net	Meagan	RANGEL	Rangel	Meagan Rangel	M	20064116	4116
12/28/2017 3:41:54 AM	28	Afton_Spaulding@nphs.net	AFTON_SPAULDING@NPHS.NET	afton_spaulding@nphs.net	Afton	SPAULDING	Spaulding	Afton Spaulding	A	20078068	8068
12/02/2017 4:42:33 PM	02	Valery_Gerard@nphs.net	VALERY_GERARD@NPHS.NET	valery_gerard@nphs.net	Valery	GERARD	Gerard	Valery Gerard	V	20060776	0776
12/04/2017 12:02:10 AM	04	Kyle_Held@nphs.net	KYLE_HELD@NPHS.NET	kyle_held@nphs.net	Kyle	HELD	Held	Kyle Held	K	20053779	3779
12/13/2017 6:39:01 AM	13	Isabel_Alexander@nphs.net	ISABEL_ALEXANDER@NPHS.NET	isabel_alexander@nphs.net	Isabel	ALEXANDER	Alexander	Isabel Alexander	I	20043761	3761
12/17/2017 2:32:48 PM	17	Shahin_Alcius@nphs.net	SHAHIN_ALCIUS@NPHS.NET	shahin_alcius@nphs.net	Shahin	ALCIUS	Alcius	Shahin Alcius	S	20069956	9956
12/06/2017 8:47:09 AM	06	Javon_Wilhelm@nphs.net	JAVON_WILHELM@NPHS.NET	javon_wilhelm@nphs.net	Javon	WILHELM	Wilhelm	Javon Wilhelm	J	20071159	1159