

Microsoft Excel 2016 Teaching Guide

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1 Introduction to Excel 2016

Objective: Understand what Excel 2016 is and its basic applications.

Excel 2016 is a spreadsheet application in the Microsoft Office suite used for organizing, analyzing, and visualizing data. Its ideal for tasks like budgeting, data analysis, and creating charts.

Key Features:

- Grid of cells organized in rows and columns.
- Tools for calculations (formulas/functions).
- Data visualization (charts, conditional formatting).
- Data management (sorting, filtering).

Example: A teacher can use Excel to track student grades, calculate averages, and create visual reports.

2 Navigating the Excel Interface

Objective: Learn to navigate the Excel 2016 environment.

Key Components:

- **Ribbon:** Contains tabs (Home, Insert, Data, etc.) with commands.
- **Quick Access Toolbar:** Customizable shortcuts (e.g., Save, Undo).
- **Worksheet:** Grid of cells where data is entered.
- **Status Bar:** Shows information like sum or average of selected cells.

Steps to Explore:

1. Open Excel 2016.
2. Click the **File** tab to access the Backstage view (save, open, new).
3. Explore the **Home** tab for formatting and clipboard tools.
4. Click a cell (e.g., A1) to make it active.

Example: Select cell B3, type "Hello", and press Enter. Notice how the active cell moves to B4.

3 Entering and Formatting Data

Objective: Enter data and apply basic formatting for readability.

Steps to Enter Data:

1. Click a cell (e.g., A1).
2. Type text, numbers, or dates (e.g., "Name", "Score", "01/15/2025").
3. Press Enter or arrow keys to move to the next cell.

Formatting Tips:

- **Font Formatting:** Use the Home tab to change font size, style, or color.

- **Number Formatting:** Apply currency, percentage, or date formats.
- **Cell Alignment:** Center, left-align, or wrap text.

Example: Create a grade table.

1. In A1:A3, enter "Name", "Alice", "Bob".
2. In B1:B3, enter "Score", "85", "92".
3. Select B2:B3, click **Home** > **Number Format** > **Currency** to display as \$85.00, \$92.00.
4. Select A1:B1, click **Home** > **Bold** and **Center** to format headers.

4 Basic Formulas and Functions

Objective: Use formulas and functions to perform calculations.

Key Concepts:

- **Formulas:** Start with = (e.g., =A1+B1).
- **Functions:** Pre-built formulas (e.g., SUM, AVERAGE).
- **Cell References:** Use relative (A1) or absolute (\$A\$1) references.

Steps to Create a Formula:

1. Click a cell (e.g., C2).
2. Type a formula (e.g., =B2*0.1 to calculate 10% of a score).
3. Press Enter to see the result.

Common Functions:

- **SUM:** Adds a range (e.g., =SUM(B2:B5)).
- **AVERAGE:** Calculates the mean (e.g., =AVERAGE(B2:B5)).
- **IF:** Conditional logic (e.g., =IF(B2>=90, "A", "B")).

Example: Extend the grade table.

1. In C1, enter "Bonus (10%)".
2. In C2, enter =B2*0.1 and copy to C3 (drag the fill handle).
3. In B4, enter =AVERAGE(B2:B3) to calculate the average score.

5 Creating Simple Charts

Objective: Visualize data with charts.

Steps to Create a Chart:

1. Select data (e.g., A1:B3 for names and scores).
2. Go to **Insert** > **Recommended Charts** or choose a chart type (e.g., Column).
3. Customize the chart title and labels via the **Chart Tools** contextual tab.

Example: Create a column chart.

1. Select A1:B3 (Name and Score data).
2. Go to **Insert > Column Chart > 2D Clustered Column**.
3. Click the chart, then **Chart Tools > Design > Add Chart Element** to add a title ("Student Scores").

6 Sorting and Filtering Data

Objective: Organize data for analysis.

Sorting:

1. Select the data range (e.g., A1:B3).
2. Go to **Data > Sort**.
3. Choose a column (e.g., Score) and order (e.g., Largest to Smallest).

Filtering:

1. Select the data range, then go to **Data > Filter**.
2. Click the dropdown arrow in a header (e.g., Score) to filter (e.g., show scores > 90).

Example: Sort the grade table by Score.

1. Select A1:B3.
2. Go to **Data > Sort > Column: Score > Order: Largest to Smallest**.
3. Add a filter to show only scores above 80.

7 Printing and Saving Workbooks

Objective: Save and print spreadsheets effectively.

Saving:

1. Go to **File > Save As**.
2. Choose a location and format (.xlsx for Excel 2016).
3. Name the file (e.g., "GradeBook.xlsx").

Printing:

1. Go to **File > Print**.
2. Adjust settings (e.g., fit to one page, add headers/footers).
3. Preview and print.

Example: Save and print the grade table.

1. Save the workbook as "GradeBook.xlsx".
2. Go to **File > Print > Print Active Sheets**, ensure the table fits on one page.

8 Classroom Exercises

Exercise 1: Build a Budget

- **Task:** Create a personal budget with categories (e.g., Food, Rent) and amounts.
- **Steps:**
 1. In A1:A4, enter "Category", "Food", "Rent", "Utilities".
 2. In B1:B4, enter "Amount", "200", "800", "150".
 3. In B5, use =SUM(B2:B4) to calculate the total.
 4. Format B2:B4 as Currency.
- **Goal:** Practice data entry, formatting, and SUM function.

Exercise 2: Grade Analysis

- **Task:** Create a grade table and analyze data.
- **Steps:**
 1. Enter student names and scores (e.g., A1:B4).
 2. In C1:C4, use =IF(B2>=90, "A", "B") to assign grades.
 3. Create a column chart for scores.
 4. Sort by score (highest to lowest).
- **Goal:** Practice formulas, charts, and sorting.

Exercise 3: Flash Fill

- **Task:** Split full names into first and last names.
- **Steps:**
 1. In A1:A3, enter "Full Name", "John Smith", "Jane Doe".
 2. In B1, enter "First Name" and type "John" in B2.
 3. In B3, start typing "Jane", and let Flash Fill complete the rest (press Enter).
- **Goal:** Learn Excel's Flash Fill feature.

9 Additional Resources

- **GCFGlobal Excel 2016 Tutorial:** Free online lessons with examples (edu.gcfglobal.org).
- **Microsoft Excel 2016 Step-by-Step Guide:** Detailed PDF by Montgomery County-Norristown Public Library (studylib.net).
- **The Smart Method:** Free PDF for basic skills (samplefiles.thesmartmethod.com).