

# Using Excel to Compare Phone Plans

Completing this activity will satisfy all the graduation requirements for spreadsheet as currently written:

## Personal Productivity Competency 5: Creates and uses spreadsheets

10. Creates spreadsheets/databases to track and manage data
11. Formats row and column headings in a spreadsheet: bold, shading, italics, underlining
12. Uses merge cells to include a title, section heading, etc.
13. Enters data in spreadsheets
14. Enters and uses formulas to manipulate data in a spreadsheet/database
15. Creates relevant graphs from spreadsheet/database data

Situation: You have received information from 4 different phone companies about their long-distance (in state and state-to-state) phone plans. You want to make sure you choose the plan which is the most economical for your needs.

| Company                   | Pricing                         |
|---------------------------|---------------------------------|
| 1. Call-4-Cheap           | \$9.95 per month, 5¢ per minute |
| 2. 7 <sup>th</sup> Heaven | \$7.00 per month, 7¢ per minute |
| 3. Dial Discount          | \$6.00 per month, 9¢ per minute |
| 4. Minute Master          | No monthly fee, 12¢ per minute  |

To help you determine which company has the best plan for your calling needs, you need to compare the price plans for the following minute-usage:

0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300

## Setting up the Excel spreadsheet to analyze the different pricing plans

### Inserting and Merging a Title:

In Cell A1, type the title: *Finding a Phone Plan to Meet Your Needs Using Excel*

- Select the cells from A1 through E1, and press the “merge and center” icon on the toolbar.
- Make the title **bold** and *italicized*.



### Formatting Column Headings:

1. **Format your column heading** so that the text is **bold** and **centered**. Adjust column width to fit text.
2. In Cell A2, type “Minute Usage”
3. In Cell B2, type “Call-4-Cheap”
4. In Cell C2, type “7<sup>th</sup> Heaven”
5. In Cell D2, type “Dial Discount”
6. In Cell E2, type “Minute Master”

|   | A   | B                   | C                 | D                    | E                    |
|---|---|---------------------|-------------------|----------------------|----------------------|
| 1 | <i><b>Finding a Phone Plan to Meet Your Needs Using Excel</b></i> |                     |                   |                      |                      |
| 2 | <b>Minute Usage</b>   | <b>Call 4 Cheap</b> | <b>7th Heaven</b> | <b>Dial Discount</b> | <b>Minute Master</b> |
| 3 | 0   |                     |                   |                      |                      |
| 4 | 30  |                     |                   |                      |                      |
| 5 | 60  |                     |                   |                      |                      |

## Using a pattern to insert minutes into Column A:

1. In Cell A3, type 0
2. In Cell A4, type 30
3. In Cell A5, type 60

The computer should be able to pick up the pattern of counting by “30.” We will use this feature of Excel to quickly insert the rest of the minute designations into the remaining Cells.

1. First, put your cursor in the center of cell A3 and drag down to cell A5 to **select** these cells.
2. Next, look for the little black box in the bottom right of cell A5.
3. Place your cursor on top of the black box so that it turns to a black cross.
4. Click and hold the left mouse button and drag down to Cell A13.
5. If you have done this correctly, the numbers will count by 30 from 0 in cell A3 through 300 which will show up in cell A13.

|    | A  | B            | C          | D             | E             |
|----|--|--------------|------------|---------------|---------------|
| 1  | <i>Finding a Phone Plan to Meet Your Needs Using Excel</i> |              |            |               |               |
| 2  | Minute Usage   | Call 4 Cheap | 7th Heaven | Dial Discount | Minute Master |
| 3  | 0  |              |            |               |               |
| 4  | 30   |              |            |               |               |
| 5  | 60   |              |            |               |               |
| 6  |  |              |            |               |               |
| 7  |  |              |            |               |               |
| 8  |  |              |            |               |               |
| 9  |  |              |            |               |               |
| 10 |  |              |            |               |               |
| 11 |  |              |            |               |               |
| 12 |  |              |            |               |               |
| 13 | 300  |              |            |               |               |

Little black box

## Inserting the formulas and using the fill-down feature applying the formula to other rows.

- On the first page of this exercise, you were given the minute usage for each plan from 0 minutes to a maximum of 300 minutes. You reflected this by filling in the minutes in column A. (For ease, we used increments of 30 minutes, but a real phone plan would count minute by minute.)
- Now you **need to add formulas** for each plan to **figure out how much each plan will cost** depending on how many minutes you use.
- Since your answers will show up as **currency**, first **select columns B-E**. Then go to **Format – Cells– Choose currency** (on the number tab) and make sure the decimal places are set to “2” and the symbol is the dollar sign.
- Call-4-Cheap quoted a \$9.95 monthly charge with an additional 5 cents per minute used. To figure out the cost for each of the minute increments, you need to put a formula in Cell B3. Remember to use an “=” sign to tell the computer you are entering a formula.
- What would this formula look like????? It would be the monthly cost (in this case \$9.95 **added to** the number of minutes used **times** the cost per minute.

IMPORTANT!!!!

$$=9.95+.05*A3$$

Do not type a dollar sign in the formula.

You **always use the cell reference** rather than typing in the specific number. This allows you to “fill down” the formula and apply it to all the other rows.

- Once you have typed the formula in cell B3, hit enter.
- Look for the little black box in the bottom right hand corner.
- Put your cursor on top until it changes to a black cross, and then click and drag down through cell B13. The correct amounts should fill in for each 30-minute increment.

|    | A  | B                   | C                 | D                    | E                    |
|----|--|---------------------|-------------------|----------------------|----------------------|
| 1  | <b>Finding a Phone Plan to Meet Your Needs Using Excel</b> |                     |                   |                      |                      |
| 2  | <b>Minute Usage</b>  | <b>Call 4 Cheap</b> | <b>7th Heaven</b> | <b>Dial Discount</b> | <b>Minute Master</b> |
| 3  | 0  | \$9.95              |                   |                      |                      |
| 4  | 30   | \$11.45             |                   |                      |                      |
| 5  | 60   | \$12.95             |                   |                      |                      |
| 6  | 90   | \$14.45             |                   |                      |                      |
| 7  | 120  | \$15.95             |                   |                      |                      |
| 8  | 150  | \$17.45             |                   |                      |                      |
| 9  | 180  | \$18.95             |                   |                      |                      |
| 10 | 210  | \$20.45             |                   |                      |                      |
| 11 | 240  | \$21.95             |                   |                      |                      |
| 12 | 270  | \$23.45             |                   |                      |                      |
| 13 | 300  | \$24.95             |                   |                      |                      |

In the screenshot above you'll see a visualization of what your spread sheet should look like to this point. Notice the formula showing in the f<sub>x</sub> bar.

Now it's your turn!!!!!! Using the formula given to you as a model, insert a formula for the other three call plans and then fill the formula down to see how much each plan will cost according to minutes used. Check your accuracy with your teacher before proceeding to the next step.

## Graphing the Results

To see how the plans compare, you will create a **SCATTER PLOT GRAPH**.

1. Highlight cells A3 through E13.
2. Click on the chart icon on the tool bar.
3. Scroll down and choose scatter plot graph, and choose the third one down on the left labeled "scatter with data points connected by lines."
4. Click on the "labels" tab, and enter your **title** and "x" and "y" category labels.
5. Click on "finish" and choose to have the graph appear in the same page as your data.
6. Go to Print Preview and then close it.

**SAVE THIS DOCUMENT TO YOUR G-DRIVE!**

**Go into AEPAS and upload it to meet all of your HS Technology Graduation Requirements in Excel!!!**

Don't worry about the sorting issue for spreadsheets as we will give you credit for that in any case.

Mr. Gohsler