

Rounding

In this chapter, we are going to take a look at various rounding functions in Excel.

	A	B	C	D	E	F	G
1							
2		Employee	Position	Age	College GPA	Salary	
3		Alice	Administrative Assistant	49	3.92	\$36,000	
4		Bill	Marketing Manager	25	2.55	\$52,000	
5		Carl	Plant Manager	50	3.57	\$74,000	
6		Denise		36	2.64	\$48,000	
7		Edward	Finance Manager	44	3.62	\$62,000	
8		Frank		52	3.38	\$59,000	
9		Gary	HR Manager	24	3.47	\$48,000	
10		Hallie	Operations Manager	31	2.88	\$51,000	
11		Isaac		45	2.88	\$58,000	
12		Jacqueline	Production Operator	30	3.93	\$38,000	
13		Kent	Maintenance Supervisor	37	2.31	\$55,000	
14		Leah		24	3.66	\$22,000	
15		Matt	Supply Chain Manager	31	3.65	\$60,000	
16		Natalie	Quality Analyst	40	2.34	\$46,000	
17		Owen	Buyer	48	3.33	\$40,000	
18							
19							

Figure 9.1

Practice Spreadsheet

Use this [workbook](#) for the chapter.

Note: This is the same workbook used in the Ranking chapter.

Let's look at the first cell in the GPA column. Alice has a GPA of 3.92. You'll notice in the formula bar, the value of her GPA is actually 3.919 (see **Figure 9.2**), but we only have two decimals showing in the cell itself—it rounds to 3.92.

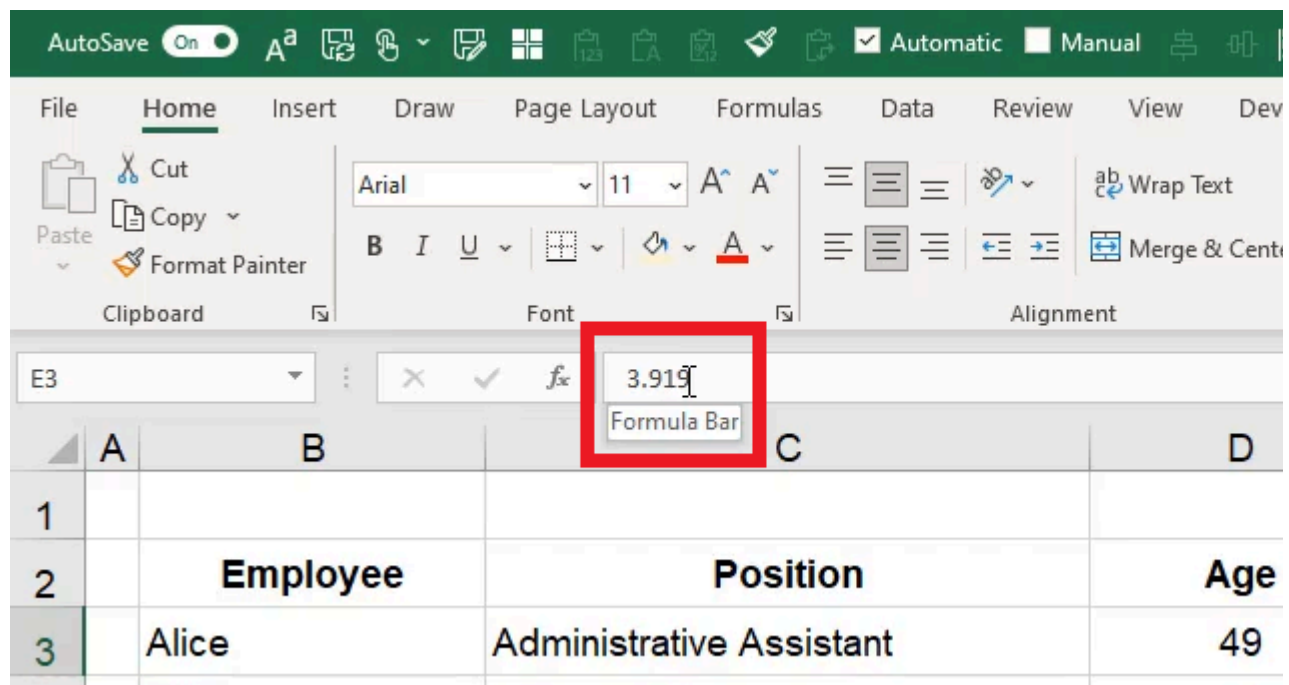


Figure 9.2

If we want to change the number of decimals that show in the cell, we can select the cell, make sure we're on the Home tab, and then change the number of decimal digits showing using the **Increase Decimal** and **Decrease Decimal** buttons. This will increase or decrease the number of decimal digits displayed. (See **Figure 9.3**)

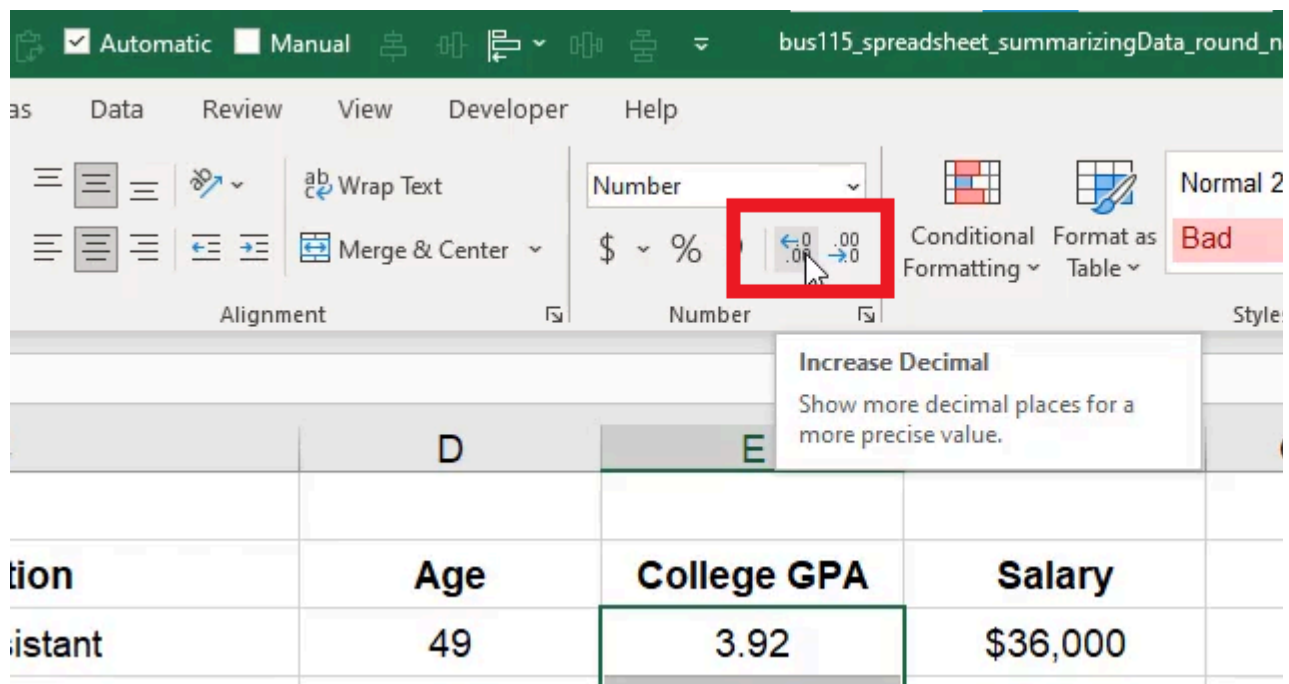


Figure 9.3

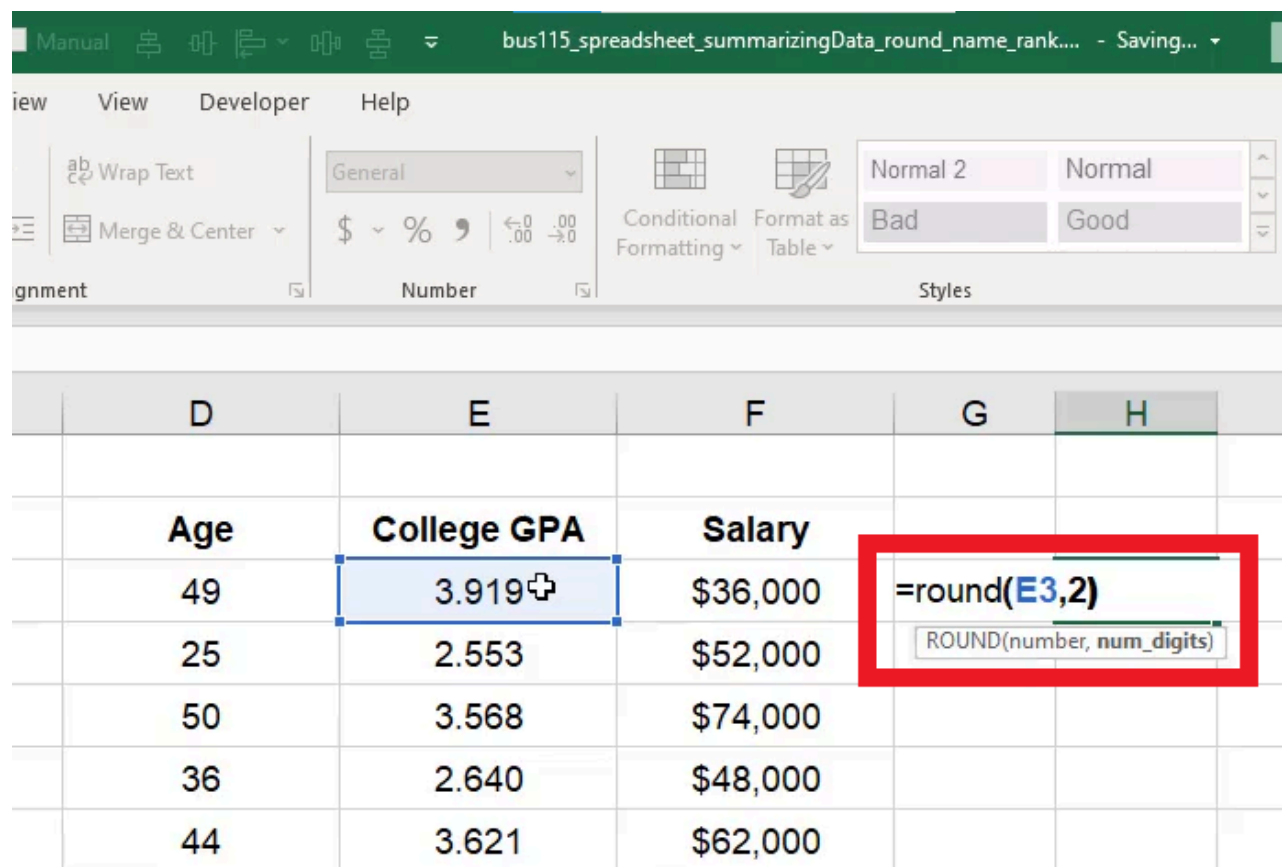
In each case when it removes a decimal, it will round what is showing according to the actual number in the cell. For instance, if we reduce the number of decimals to the nearest whole number, 3.919 rounds to four. The important thing to note is that regardless of how many decimals are showing in the cell, the actual number in the cell is whatever it is—3.919 in this case—which may be different from what actually shows in the cell. This is important because if you use

any functions or formulas that refer to this cell, what actually is used to calculate is the number that is embedded in the cell rather than what is shown in it. This method of rounding is different from using a rounding formula.

Round Function

We can also round the numbers with a formula. The Round function will round up or down to the nearest decimal place specified in the formula.

1. Type **=ROUND** and an open (left) parenthesis (**)** in an empty cell.
2. Select the reference cell with the data to round (E3 in **Figure 9.4**).
3. Type a comma (**,**) followed by the number for the nearest digit to round to (2 in **Figure 9.4**).
 - a. This number is the digit after the decimal point. For example, 1 will round to the nearest tenth, 2 will round to the nearest hundredth, and 3 will round to the nearest thousandth.
4. Type a close (right) parenthesis (**)** to close the formula.
5. Press **Enter** to complete the cell's formula (**=ROUND(E3,2)**).



The screenshot shows a spreadsheet application with a table containing data for individuals. The columns are labeled Age, College GPA, and Salary. The data is as follows:

Age	College GPA	Salary
49	3.919	\$36,000
25	2.553	\$52,000
50	3.568	\$74,000
36	2.640	\$48,000
44	3.621	\$62,000

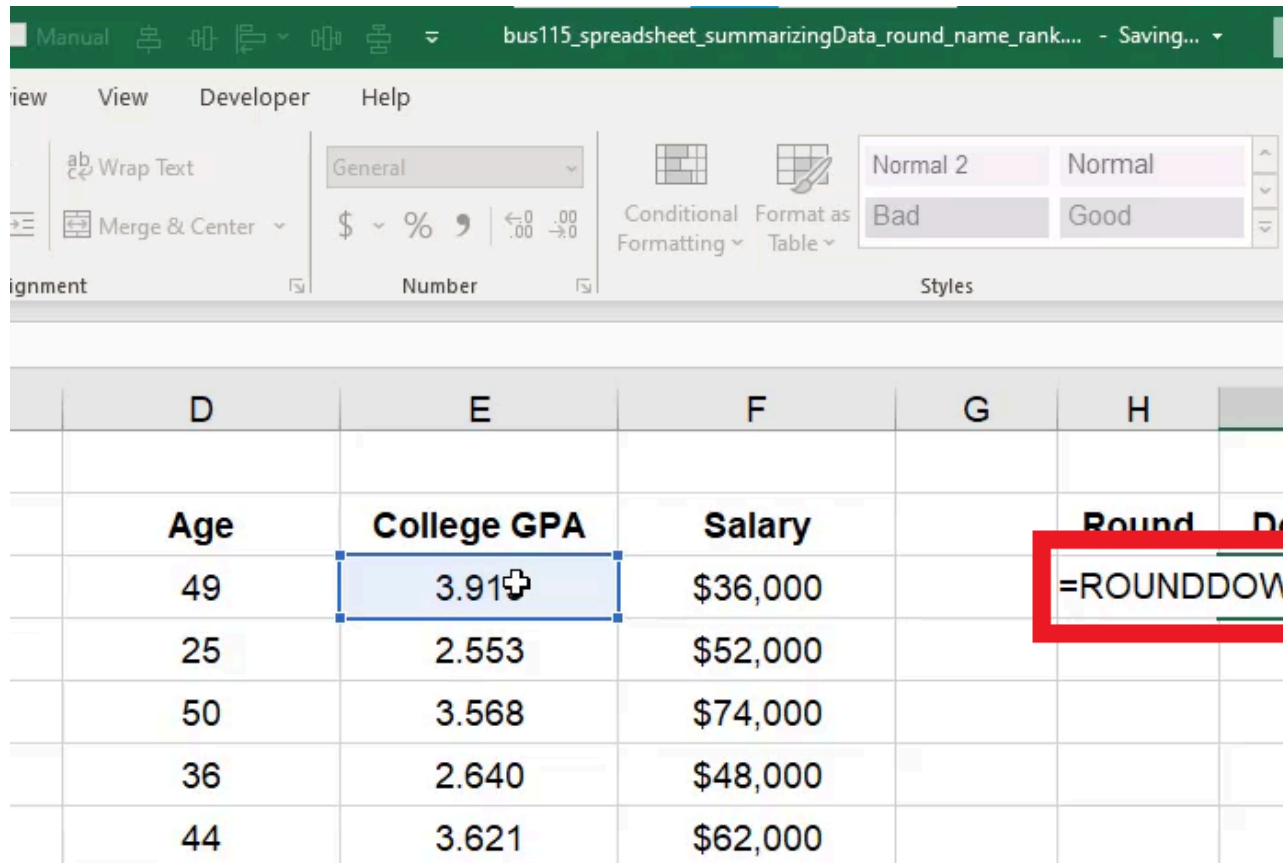
The formula bar shows the formula **=round(E3,2)** being entered. A tooltip for the **ROUND** function is visible, showing the syntax: **ROUND(number, num_digits)**.

Figure 9.4

Round Down Function

The Round Down function will round down to the nearest decimal place specified in the formula.

1. Type **=ROUNDDOWN** and an open (left) parenthesis (() in an empty cell.
2. Select the reference cell with the data to round (E3 in **Figure 9.5**).
3. Type a comma (,) followed by the number for the nearest digit to round down to (2 in **Figure 9.5**).
 - a. This number is the digit after the decimal point. For example, 1 will round down to the nearest tenth, 2 will round down to the nearest hundredth, and 3 will round down to the nearest thousandth.
4. Type a close (right) parenthesis () to close the formula.
5. Press **Enter** to complete the cell's formula (**=ROUNDDOWN(E3,2)**).



	D	E	F	G	H
	Age	College GPA	Salary		Round
	49	3.91	\$36,000		=ROUNDDOWN
	25	2.553	\$52,000		
	50	3.568	\$74,000		
	36	2.640	\$48,000		
	44	3.621	\$62,000		

Figure 9.5

Roundup function

The Roundup Function will round up to the nearest decimal place specified in the formula.

1. Type **=ROUNDUP** and an open (left) parenthesis (() in an empty cell.
2. Select the reference cell with the data to round (E3 in **Figure 9.6**).
3. Type a comma (,) followed by the number for the nearest digit to round up to (2 in **Figure 9.6**).
 1. This number is the digit after the decimal point. For example, 1 will round up to the nearest tenth, 2 will round up to the nearest hundredth, and 3 will round up to the nearest thousandth.
4. Type a close (right) parenthesis () to close the formula.
5. Press **Enter** to complete the cell's formula (**=ROUNDUP(E9,2)**).

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Wrap Text Merge & Center [Icons] General [Icons] Conditional Formatting [Icons] Format as Table [Styles: Normal 2, Normal, Bad, Good]

	D	E	F	G	H	
	Age	College GPA	Salary		Round	Dr
	49	3.920	\$36,000		3.920	=RO
	25	2.553	\$52,000			
	50	3.568	\$74,000			
	36	2.640	\$48,000			
	44	3.621	\$62,000			

Figure 9.6

Ceiling Function

The Ceiling Function will round up to the nearest multiple of the number specified in the formula.

1. Type **=CEILING.MATH** and an open (left) parenthesis (**(**) in an empty cell.
2. Select the reference cell with the data to round (D3 in **Figure 9.7**).
3. Type a comma (**,**) followed by the number for the nearest multiple to round up to (5 in **Figure 9.7**).
 1. This number represents the number of significance that rounds up to the nearest integer. For example, 5 will round up the reference number to the nearest multiple of 5.
4. Type a close (right) parenthesis (**)** to close the formula.
5. Press **Enter** to complete the cell's formula (**=CEILING.MATH(D3,5)**).

The screenshot shows a spreadsheet application with a table containing data. The table has columns labeled 'Age', 'College GPA', 'Salary', 'Round', and 'Dec'. The first row of data shows '49' in the 'Age' column, '3.919' in the 'College GPA' column, '\$36,000' in the 'Salary' column, '3.920' in the 'Round' column, and '3.9' in the 'Dec' column. The cell containing '49' is selected, and a blue border is visible around it. The spreadsheet application's ribbon is visible at the top, showing tabs for 'Manual', 'View', 'Developer', and 'Help'. The 'General' tab is active, and the 'Number' group is selected. The 'Styles' group is also visible, showing 'Normal 2' and 'Normal' styles. The 'Conditional Formatting' and 'Format as Table' options are also present.

	D	E	F	G	H	I
	Age	College GPA	Salary		Round	Dec
	49	3.919	\$36,000		3.920	3.9
	25	2.553	\$52,000			
	50	3.568	\$74,000			
	36	2.640	\$48,000			
	44	3.621	\$62,000			

Figure 9.7

Floor Function

The Floor Function will round down to the nearest multiple of the number specified in the formula.

1. Type **=FLOOR.MATH** and an open (left) parenthesis () in an empty cell.
2. Select the reference cell with the data to round (D3 in **Figure 9.8**).
3. Type a comma (,) followed by the number for the nearest multiple to round down to (5 in **Figure 9.8**).
 1. This number represents the number of significance that rounds down to the nearest integers. For example, 5 will round down the reference number to the nearest multiple of 5.
4. Type a close (right) parenthesis () to close the formula.
5. Press **Enter** to complete the cell's formula (**=FLOOR.MATH(D3,5)**).

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Wrap Text Merge & Center General \$ % , .00 →.0 Conditional Formatting Format as Table Normal 2 Normal Bad Good Styles

	D	E	F	G	H	
	Age	College GPA	Salary		Round	Down
	49	3.919	\$36,000		3.920	3.910
	25	2.553	\$52,000			
	50	3.568	\$74,000			
	36	2.640	\$48,000			
	44	3.621	\$62,000			

Figure 9.8

When completed, your practice worksheet should look like the following:

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File Home Insert Draw Page Layout Formulas Data Review View Developer Help

Clipboard Font Alignment Number Styles Cells Editing

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2		Employee	Position	Age	College GPA	Salary		Round	Down	Up	Ceiling	Floor	
3		Alice	Administrative Assistant	49	3.919	\$36,000		3.920	3.910	3.920	777	25	
4		Bill	Marketing Manager	25	2.553	\$52,000							
5		Carl	Plant Manager	50	3.568	\$74,000							
6		Denise		36	2.640	\$48,000							
7		Edward	Finance Manager	44	3.621	\$62,000							
8		Frank		52	3.381	\$59,000		732					
9		Gary	HR Manager	24	3.468	\$48,000		61					
10		Hallie	Operations Manager	31	2.876	\$51,000							
11		Isaac		45	2.878	\$58,000							
12		Jacqueline	Production Operator	30	3.932	\$38,000							
13		Kent	Maintenance Supervisor	37	2.306	\$55,000							
14		Leah		24	3.664	\$22,000							
15		Matt	Supply Chain Manager	31	3.649	\$60,000							
16		Natalie	Quality Analyst	40	2.335	\$46,000							
17		Owen	Buyer	48	3.332	\$40,000							
18													

Figure 9.9

Supplemental Resource



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