



Microsoft Office Virtual Learning

Understanding Number Formats

May 5, 2020



Lesson: May 5, 2020

Objective/Learning Target:

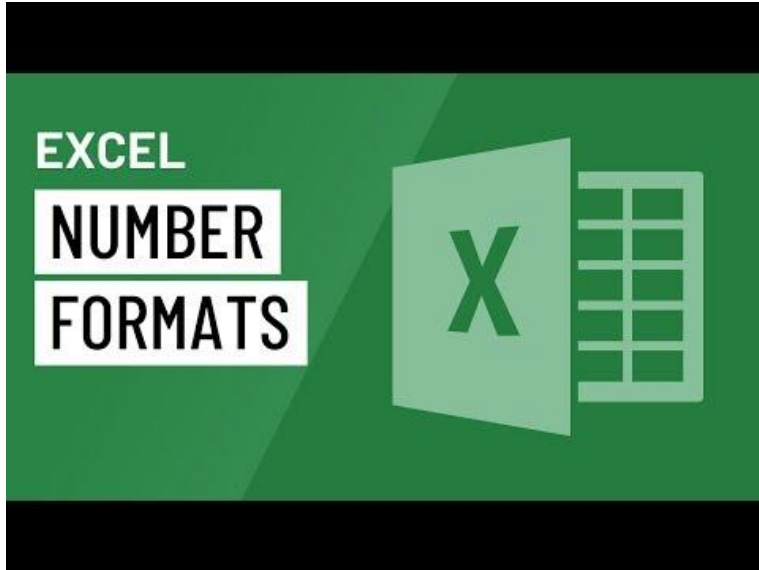
Students will understand how number formats with Excel and Google Sheets so you can make your spreadsheet



Introduction

Whenever you're working with a spreadsheet, it's a good idea to use appropriate **number formats** for your data. Number formats tell your spreadsheet exactly what type of data you're using, like percentages (%), currency (\$), times, dates, and so on.

Excel



<https://youtu.be/fjyOG7Ls7BA>



Why Use Number Formats

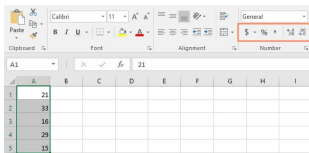
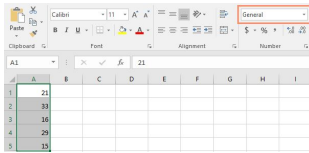
Number formats don't just make your spreadsheet easier to read—they also make it easier to use. When you apply a number format, you're telling your spreadsheet exactly what types of values are stored in a cell. For example, the date format tells the spreadsheet that you're entering specific calendar dates. This allows the spreadsheet to better understand your data, which can help ensure that your data remains consistent and that your formulas are calculated correctly.

Applying Number Formats

Excel

Just like other types of formatting, such as changing the font color, you'll apply number formats by selecting cells and choosing the desired formatting option. There are two main ways to choose a number format:

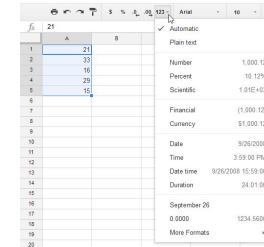
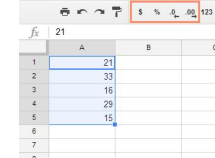
1. Go to the Home tab, click the Number Format drop-down menu in the Number group, and select the desired format.
2. You can also click one of the quick number-formatting commands below the drop-down menu.



Google Sheets



Just like other types of formatting, such as changing the font color, you'll apply number formats by selecting cells and choosing the desired formatting option. There are two main ways to choose a number format:

1. Click one of the quick number-formatting commands on the toolbar.
2. You can choose from more options in the adjacent More Formats drop-down menu.



Using Number Formats Correctly

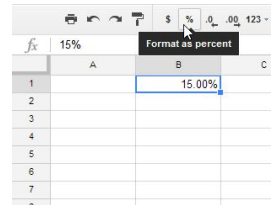
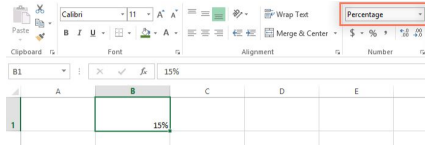
There's more to number formatting than selecting cells and applying a format. Spreadsheets can actually apply a lot of number formatting automatically based on the way you enter data. This means you'll need to enter data in a way the program can understand, and then ensure that those cells are using the proper number format. For example, the image below shows how to use number formats correctly for dates, percentages, and times:

	 Wrong	 Right
Date	January 1st	1/1/2014
Percent	50	50%
Time	Noon	12:00 pm

Percentage Formats

One of the most helpful number formats is the percentage (%) format. It displays values as percentages, like 20% or 55%. This is especially helpful when calculating things like the cost of sales tax or a tip. When you type a percent sign (%) after a number, the percentage number format will be applied to that cell automatically.

As you may remember from math class, a percentage can also be written as a decimal. So 15% is the same thing as 0.15, 7.5% is 0.075, 20% is 0.20, 55% is 0.55, and so on. You can review this lesson from our Math tutorials to learn more about converting percentages to decimals.



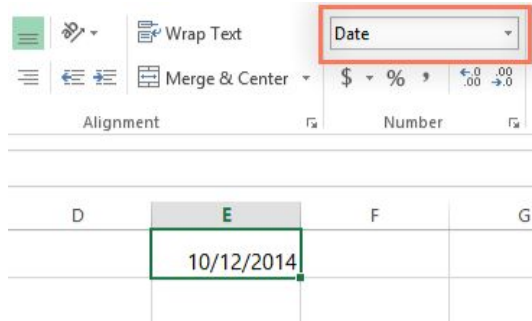
There are many times when percentage formatting will be useful. For example, in the images below, notice how the sales tax rate is formatted differently for each spreadsheet (5, 5%, and 0.05):

No percentage formatting			Percentage formatting			Written as decimal		
Item	Price	Sales Tax	Item	Price	Sales Tax	Item	Price	Sales Tax
Jacket	\$22.50	\$112.50	Jacket	\$22.50	\$1.13	Jacket	\$22.50	\$1.13
Sales Tax Rate:	5		Sales Tax Rate:	5%		Sales Tax Rate:	0.05	

Date Formats

Whenever you're working with dates, you'll want to use a date format to tell the spreadsheet that you're referring to specific calendar dates, such as July 15, 2014. Date formats also allow you to work with a powerful set of date functions that use time and date information to calculate an answer.

Spreadsheets don't understand information the same way a person would. For instance, if you type October into a cell, the spreadsheet won't know you're entering a date so it will treat it like any other text. Instead, when you enter a date, you'll need to use a specific format your spreadsheet understands, such as month/day/year (or day/month/year depending on which country you're in). In the example below, we'll type 10/12/2014 for October 12, 2014. Our spreadsheet will then automatically apply the date number format for the cell.

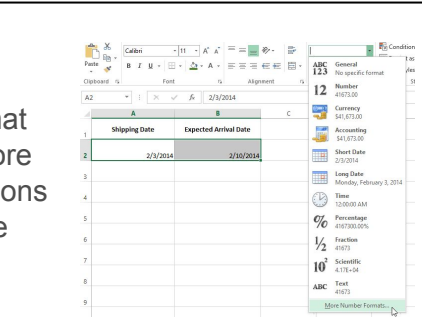


	A	B	C
1		10/12/2016	
2			
3			
4			
5			
6			
7			
8			

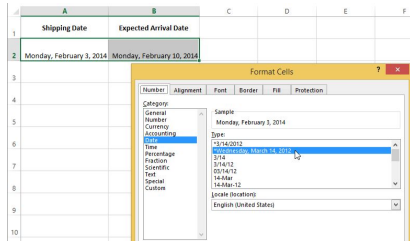
Other Date Formatting Options

Excel

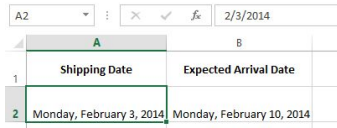
To access other date formatting options, select the Number Format drop-down menu and choose More Number Formats. These are options to display the date differently, like including the day of the week or omitting the year.



The Format Cells dialog box will appear. From here, you can choose the desired date formatting option.



As you can see in the formula bar, a custom date format doesn't change the actual date in our cell—it just changes the way it's displayed.

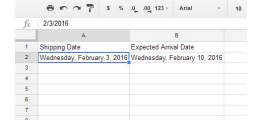
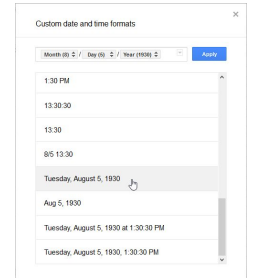
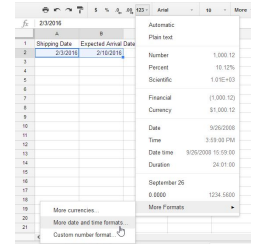


Sheets

To access other date-formatting options, select the More formats drop-down menu on the toolbar and choose More Formats at the bottom, then select More date and time formats.

The Custom date and time formats dialog box will appear. From here, you can choose the desired date-formatting option. These are options to display the date differently, like including the day of the week or omitting the year.

As you can see in the formula bar, a custom date format doesn't change the actual date in our cell—it just changes the way it's displayed.





Number Formatting Tips

Here are a few tips for getting the best results with number formatting.

Number Formatting Tips

Apply number formatting to an entire column: If you're planning to use one column for a certain type of data, like dates or percentages, you may find it easiest to select the entire column by clicking the column letter and applying the desired number formatting. This way, any data you add to this column in the future will already have the correct number format. Note that the header row usually won't be affected by number formatting.


	A	B	C	D	E
1	Item Name	Price			
2	Measuring Cups	\$4.99			
3	Ladel	\$2.99			
4	Slotted Spoon	\$2.79			
5	12" Skillet	\$14.59			
6	Garlic Press	\$7.45			
7					
8					
9					
10					

	A	B
1	Item Name	Price
2	Measuring Cups	\$4.99
3	Ladel	\$2.99
4	Slotted Spoon	\$2.79
5	12" Skillet	\$14.59
6	Garlic Press	\$7.45
7		
8		
9		
10		
11		
12		
13		
14		
15		

Number Formatting Tips

Double-check your values after applying number formatting: If you apply number formatting to existing data, you may have unexpected results. For example, applying **percentage (%)** formatting to a cell with a value of 5 will give you 500%, not 5%. In this case, you'd need to retype the values correctly in each cell.

	A	B
1	Percentage of Total	
2	500%	
3	7300%	
4	1200%	
5	550%	
6	1200%	



	A	B
1	Percentage of Total	
2	500.00%	
3	7300.00%	
4	1200.00%	
5	550.00%	
6	1200.00%	
7		
8		

Number Formatting Tips

If you reference a cell with number formatting in a formula, the spreadsheet may automatically apply the same number formatting to the new cell. For example, if you use a value with currency formatting in a formula, the calculated value will also use the currency number format.

	A	B	C
1	\$184.50	\$92.25	

Formula bar: B1 : fx =A1/2

fx | =A1/2

	A	B	C
1	\$184.50	\$92.25	
2			
3			
4			
5			
6			
7			



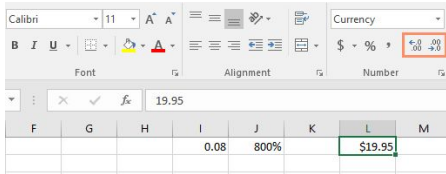
Number Formatting Tips

If you want your data to appear **exactly as entered**, you'll need to use the **plain text** format. This format is especially good for numbers you don't want to perform calculations with, such as phone numbers, zip codes, or numbers that begin with 0, like **02415**. For best results, you may want to apply the plain text format before entering data into these cells.

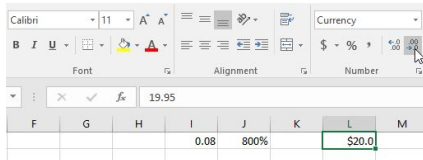
Increasing and Decreasing Decimals

Excel

The Increase Decimal and Decrease Decimal commands allow you to control how many decimal places are displayed in a cell. These commands don't change the value of the cell; instead, they display the value to a set number of decimal places.



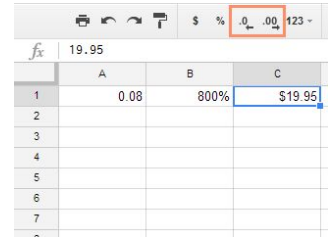
Decreasing the decimal will display the value rounded to that decimal place, but the actual value in the cell will still be displayed in the formula bar.



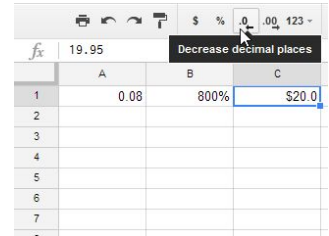
The Increase/Decrease Decimal commands don't work with some number formats, like Date and Fraction.

Sheets

The Increase decimal places and Decrease decimal places commands allow you to control how many decimal places are displayed in a cell. These commands don't change the value of the cell; instead, they display the value to a set number of decimal places.



Decreasing the decimal will display the value rounded to that decimal place, but the actual value in the cell will still be displayed in the formula bar.



The Increase/Decrease decimal places commands don't work with some number formats, like Date and Fraction.



Challenge

Excel

1. Open Excel 2016.
2. In cell A2, type today's date and press Enter.
3. Click cell A2 and verify that it is using a Date number format. Try changing it to a different date format (for example, Long Date).
4. In cell A2, use the Format Cells dialog box to choose the 14-Mar-12 date format.
5. Enter 0.1053 in cell A8
6. Change Cell A8 to the Percentage format.
7. Enter 1.49 in cell A5
8. Apply the Currency format to cell A5
9. In cell A8, use the Increase Decimal or Decrease Decimal command to change the number of decimal places to one. It should now display 10.5%

Sheets

1. Open Google Sheets and create a new blank spreadsheet.
2. In cell A2, type today's date and press Enter.
3. Click cell A2 and verify that it is using a Date number format. Try changing it to a different date format (for example, Long Date).
4. In cell A2, use the Format Cells dialog box to choose the 14-Mar-12 date format.
5. Enter 0.1053 in cell A8
6. Change Cell A8 to the Percentage format.
7. Enter 1.49 in cell A5
8. Apply the Currency format to cell A5
9. In cell A8, use the Increase Decimal or Decrease Decimal command to change the number of decimal places to one. It should now display 10.5%

For More Resources:

Microsoft Excel:

<https://edu.gcfglobal.org/en/excel2016/understanding-number-formats/1/>

Google Sheets:

<https://edu.gcfglobal.org/en/googlespreadsheets/understanding-number-formats/1/>