Excel cheat sheet

A spreadsheet is a tool that you can use to organize data, as well as analyze and represent them. The most common (and powerful) version is Microsoft Excel. The tips and tricks below will help you navigate the basic functions for keeping your data tidy and to perform simple analysis. We will cover presentation in the next session.

The basics
- There should be only **one piece of data per cell**. For example, enter first and last names separately, and street addresses in separate cells from cities (and states and zip codes).
- If you are going to be joining data from different spreadsheets, **always use a unique identifier** (such as a student's SSID) within each sheet. Whenever possible, avoid using names to merge data.
- Text should be left-aligned; **numbers right-aligned**.
- It is often helpful to **name cells, ranges,** or **tables** that you will be using frequently within a workbook. It is also a time-saver to **convert your data to a table** (from the Insert tab).
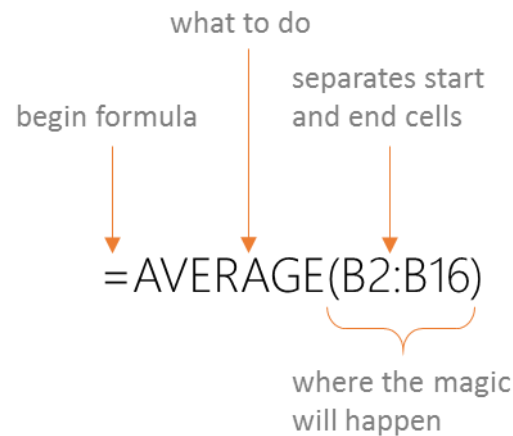
Cleanup
- Sometimes you will receive files with *dirty data*. You can use formulas, such as LEFT, RIGHT, or TRIM, or the text-to-columns feature in the Data tab to easily move items into new cells.
- Check **formatting**. Are numbers formatted as numbers? There may be times when you will want to treat a number as text, but improperly formatted data will often cause you heartburn later. Use the **flash fill** tool to quickly update the formatting of an entire column.
- Use **find and replace** to quickly update information in cells—for example, to change the name of a school to a three letter code.
- If you have duplicate entries, use the **remove duplicates** feature in the data tab to quickly remove unwanted rows.
- Sometimes, you will want to remove blank rows. Be careful with this decision—sometimes missing data are important. However, if your work will benefit from deleting these rows, use the **filters** at the top of the columns which have blank cells.

Begin exploration
- Depending upon your question, using **sort** or **filter** may be all that's necessary to find the data you need.
- You can also select columns or rows to **hide** or **show** to focus on specific areas of your spreadsheet.
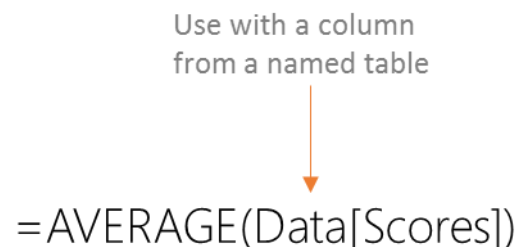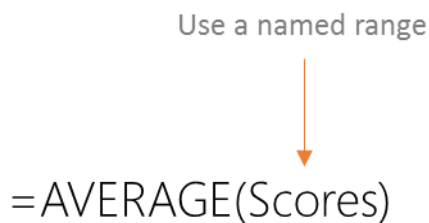
Dig deeper using formulas

what to do

separates start
and end cells

begin formula

=AVERAGE(B2:B16)

where the magic
will happen

- **SUM**, **SUMIF**, or **SUMIFS** can help total numerical data. Use the *if(s)* version for situations where you want to only include certain types of data—for example, the total number of days absent (SUM) for males (SUMIF) or females in special ed (SUMIFS).

creates an
absolute reference

=AVERAGE($B$2:$B$16)
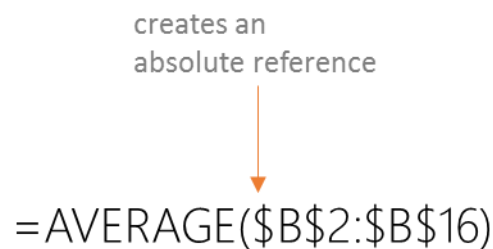
- **COUNT, COUNTA, COUNTIF, COUNTIFS** can be used to count either numbers (COUNT) or text (COUNTA). Use the *if(s)* version when you need to include certain types of data. Remember, items with text must be enclosed in quotation marks. For example, =COUNTIF(A1:A25,"Jane")

Use a named range

Use with a column
from a named table

=AVERAGE(Scores)

=AVERAGE(Data[Scores])

- **AVERAGE, AVERAGEIF, AVERAGEIFS** are used to find the mean of two or more numbers. Use the conditional *if(s)* similar to COUNT and SUM.
- Plain old **IF** (and **IFS**, in Excel 2016) will help you tell Excel what to do based on certain conditions outside of AVERAGE, SUM, or COUNT.

- **CONCATENATE** will join together data from two or more cells—or you can add your own information to the mix. For example, =CONCATENATE(A1,B1) *or* =CONCATENATE(A1," and then",B1,"happened.")
- Some people *love* VLOOKUP (and its sister HLOOKUP) for matching data from different tables, spreadsheets, or even workbooks. If that's your jam, more power to you. Me? If I prefer the dynamic duo of **INDEX/MATCH**. It is a much more powerful and flexible formula and does not suffer from some of the restrictions forced by the lookup sisters. It may look scary...but it isn't. You can also use *array* formulas with INDEX/MATCH...but that's a different session.

Cell that has data you can match
with second table/sheet/range

Range of data where "answer" is   Range of data which matches cell

Tells Excel you want an exact match

=INDEX(Sheet1!$A2:$10,MATCH(B2,Sheet1!$B$2:$B$10,0))

- Some formulas will help clean up the look of your workbook. For example, you can use **IFERROR** at the beginning of your formula string to avoid #N/A errors from showing.

Troubleshooting

- Excel can help you select the right formula and format it correctly. Click on highlighted or linked options to get support.
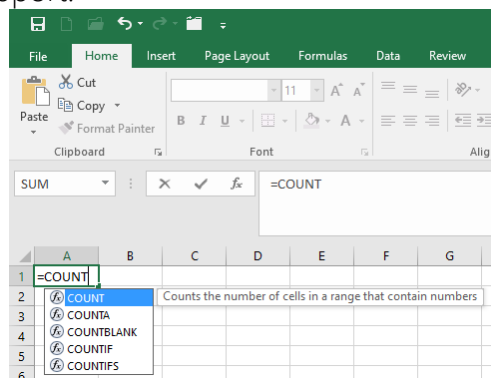
- Check cell formatting, as well as references, if you are not seeing the data you expect. Are numbers formatted as numbers? Did you remember to use absolute references for a particular range before you used the autofill tool?