Excel 6 – Raising Tomato's

For this exercise students will analyze data from a tomato production test plot. Students will calculate yield per 100 ft., arrange data in "date-of-planting" order, dry matter production per day, and prepare a graph that shows yield per 100 ft. planting data.

Instructions:

Good morning! Here is the data for today. The Boss has just left with the data disk. Your job is to complete the analysis. **Download these files:** Excel 6 - Tomato Outline, Tomato Production Test Plot Data.xlsx

Objectives

- Arrange data
- Use formulas to calculate data
- Analyze and arrange data in a chart
- Use the average function

The spreadsheet must include:

- Edit a workbook
- Complete all calculations
- Format data correctly
- The total project summary in each report
- Include all graphs

1. Open the workbook

1. **Open:** *MS Office 2013 Excel* spreadsheet program
2. **Download:** the *Tomato Production Test Plot Data* spreadsheet from this assignment to your class folder
3. **Double click:** on *file name* to open

Or

1. **Open:** *MS Office 2013 Excel* spreadsheet program
2. **Select:** *Open Other Workbooks*, find the *Tomato Production Test Plot Data* file and **open**

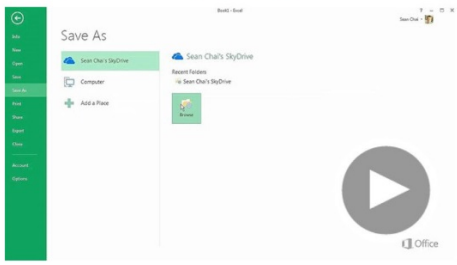
2. Save the spreadsheet

Save the spreadsheet the first time by following these steps:

1. **Click** on the *File* tab; **Click:** *Save As*
2. **Select** or **browse** to a folder you created on the desktop
3. In the *File name* box, **type** a name for the document: **lastname_Excel 6**
4. **Click:** *Save*

Remember to **Save** (Ctrl+S) as you complete each step.

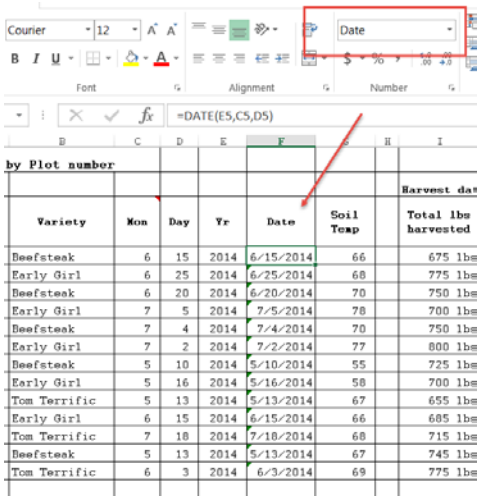
Video: Save and print an Excel workbook



3. Arranging Data

To arrange the data in the order of *date-of-planting*, a column with the dates in one column is needed.

1. **Add:** a *new column to the right of Yr*
2. Using the **date function =date()**, convert the dates from 3 columns to one
   The date function uses the cell reference for ***year, month, and day.*** *(The columns must be in that order).*
3. **Verify** the number format says **date**
4. **Copy** the *formula* for all varieties



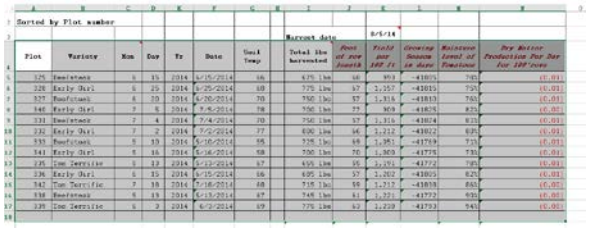
by Plot number

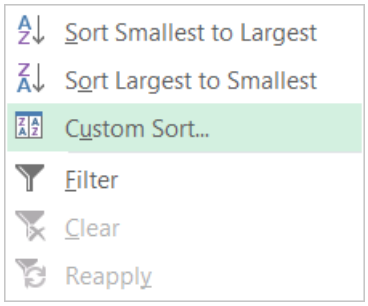
Variety	Mon	Day	Yr	Date	Soil Temp	Total lbs harvested
Beefsteak	6	15	2014	6/15/2014	66	675 lbs
Early Girl	6	25	2014	6/25/2014	68	775 lbs
Beefsteak	6	20	2014	6/20/2014	70	750 lbs
Early Girl	7	5	2014	7/5/2014	78	700 lbs
Beefsteak	7	4	2014	7/4/2014	70	750 lbs
Early Girl	7	2	2014	7/2/2014	77	800 lbs
Beefsteak	5	10	2014	5/10/2014	55	725 lbs
Early Girl	5	16	2014	5/16/2014	58	700 lbs
Tom Terrific	5	13	2014	5/13/2014	67	655 lbs
Early Girl	6	15	2014	6/15/2014	66	685 lbs
Tom Terrific	7	18	2014	7/18/2014	68	715 lbs
Beefsteak	5	13	2014	5/13/2014	67	745 lbs
Tom Terrific	6	3	2014	6/3/2014	69	775 lbs

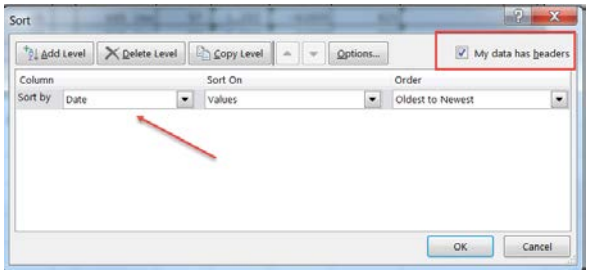
4. Sort "Date of Planting"

Sort "Date of Planting" from earliest to latest.

1. **Select:** *cells* containing the relevant information
2. **Select:** *Data Tab*
3. **Select:** *Sort A-Z* to Custom Sort the data
4. **Sort:** by *date*
5. **Select:** "*My data has headers*" to include the headers when the relevant information is selected
6. **Select**: *OK*







4. Calculate Yield per 100 ft. Column

Figure out how much produce or a yield per 100 ft.

1. **Create** a formula to calculate *Yield per 100 ft.* in the appropriate column
2. **Divide** *lbs. harvested* by *Feet of row length* to get the lbs. per ft., then **Multiply** *by 100*
3. **Copy** the *formula for all rows* in that column

TOMATO PRODUCTION TEST PLOT DATA							
					Harvest date	8/5/14	
Mon	Day	Yr	Soil Temp		Lbs harvested	Feet of row length	Yield per 100 ft
6	15	2014	66		675 lbs	68	
6	25	2014	68		775 lbs	67	
6	20	2014	70		750 lbs	57	
7	5	2014	78		700 lbs	77	
7	4	2014	70		750 lbs	57	
7	2	2014	77		800 lbs	66	
5	10	2014	55		725 lbs	69	

4. Calculate Growing Season in Days

Using the date of harvest provided, **calculate** the *Growing Season in Days* using an **absolute cell reference** for the *Harvest Date,* and use a **date function** for *Planting Date*.

To make the **cell reference** for *Harvest Date* **absolute, place a $ before the column and the row number** that will remain the same for each formula copied.

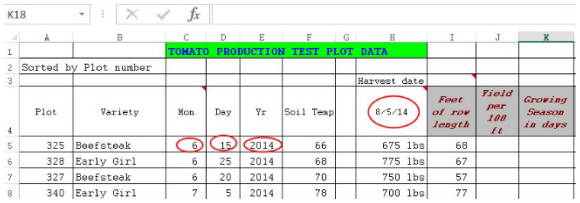
(Example: A1 is the absolute reference for A1.)

To create a Date function:

Type: *=DATE*, then add the *cell reference numbers* for the dates, separated with commas.

(Example: =DATE(c7,d7,e7) are the dates for Beefsteak.)

1. **Create** a *formula* to calculate *Growing Season in Days* in the appropriate column using **absolute cell reference** for the *Harvest Date,* and use a **date function** for *Planting Date*
2. **Copy** the *formula for all rows* in that column



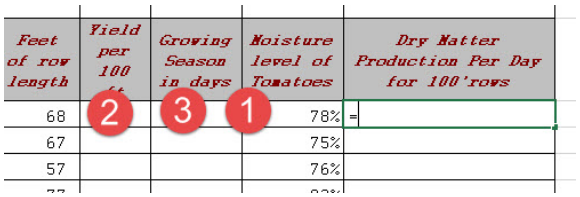
			TOMATO PRODUCTION TEST PLOT DATA							
Sorted by Plot number										
						Harvest date				
Plot	Variety	Mon	Day	Yr	Soil Temp	8/5/14	Feet of row length	Yield per 100 ft	Growing Season in days	
325	Beefsteak	6	15	2014	66	675 lbs	68			
328	Early Girl	6	25	2014	68	775 lbs	67			
327	Beefsteak	6	20	2014	70	750 lbs	57			
340	Early Girl	7	5	2014	78	700 lbs	77			

Note: **Absolute cell reference:** A cell reference that refers to cells by their fixed position in a worksheet; an absolute cell reference remains the same when the formula is copied.

5. Calculate Dry Matter per Day

Calculate dry matter production per day produced for planting 100 ft. rows.

1. **Create** a *formula* to calculate *Dry Matter Production per Day for 100 ft. rows* in the appropriate column
   a) **Calculate** the *Dry Matter*: *100% minus the Moisture level*
   b) **Multiply** by: *Yield per 100 ft.*
   c) **Divide** by: *Growing Season in Days*
2. **Copy** the *formula for all rows* in that column

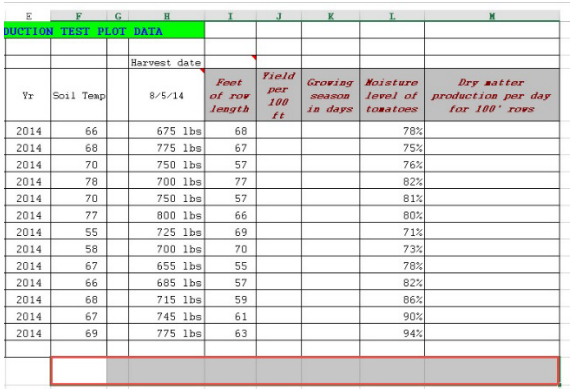


Remember to **add ( )** around the functions you want to perform together. (100% - D?) would be the first function you want to perform; then the multiplication; then the division.

6. Calculate the Averages

Complete averages for all relevant information. Black out any columns for which there are no averages.

1. **Calculate** the AVERAGE for the following:
   a. *Soil Temps*
   b. *lbs. harvested*
   c. *Feet of row length*
   d. *Yield per 100 ft.*
   e. *Growing Season in Days*
   f. *Moisture Level of tomato's* and
   g. *Dry Matter Production*



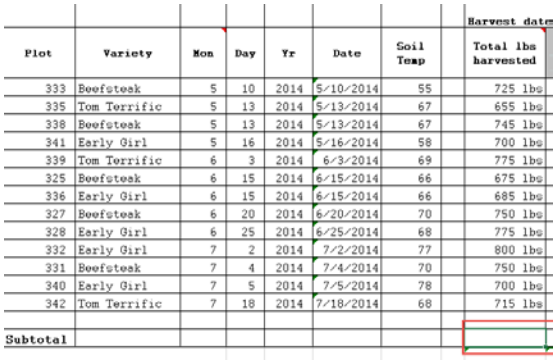
DUCTION TEST PLOT DATA

Yr	Soil Temp	Harvest date 8/5/14	Feet of row length	Yield per 100 ft	Growing season in days	Moisture level of tomatoes	Dry matter production per day for 100' rows
2014	66	675 lbs	68			78%	
2014	68	775 lbs	67			75%	
2014	70	750 lbs	57			76%	
2014	78	700 lbs	77			82%	
2014	70	750 lbs	57			81%	
2014	77	800 lbs	66			80%	
2014	55	725 lbs	69			71%	
2014	58	700 lbs	70			73%	
2014	67	655 lbs	55			78%	
2014	66	685 lbs	57			82%	
2014	68	715 lbs	59			86%	
2014	67	745 lbs	61			90%	
2014	69	775 lbs	63			94%	

8. Subtotals

Create subtotals to make a report of the average production by variety.

1. Add a row to **create** a *subtotal for Total lbs. harvested*

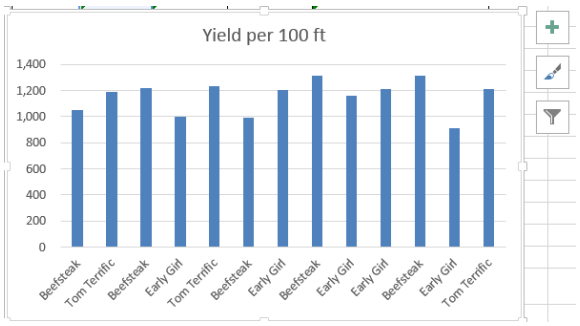


Plot	Variety	Mon	Day	Yr	Date	Soil Temp	Harvest date Total lbs harvested
333	Beefsteak	5	10	2014	5/10/2014	55	725 lbs
335	Tom Terrific	5	13	2014	5/13/2014	67	655 lbs
338	Beefsteak	5	13	2014	5/13/2014	67	745 lbs
341	Early Girl	5	16	2014	5/16/2014	58	700 lbs
339	Tom Terrific	6	3	2014	6/3/2014	69	775 lbs
325	Beefsteak	6	15	2014	6/15/2014	66	675 lbs
336	Early Girl	6	15	2014	6/15/2014	66	685 lbs
327	Beefsteak	6	20	2014	6/20/2014	70	750 lbs
328	Early Girl	6	25	2014	6/25/2014	68	775 lbs
332	Early Girl	7	2	2014	7/2/2014	77	800 lbs
331	Beefsteak	7	4	2014	7/4/2014	70	750 lbs
340	Early Girl	7	5	2014	7/5/2014	78	700 lbs
342	Tom Terrific	7	18	2014	7/18/2014	68	715 lbs
Subtotal							

9. Prepare a graph of "yields-per-100"

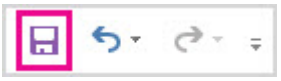
Prepare a graph of "*yield per 100 ft.*" with Variety as the bottom label.

1. **Select**: *Yield per foot* column and *Variety* column
2. **Insert**: a *bar chart* with *Variety* at the bottom



10. Save your work

Click the **Save** button on the **Quick Access Toolbar**, or press Ctrl+S.



11. Upload the completed spreadsheet to Excel 6 - Tomatos

After completion save the file one more time then upload the file to this assignment:

1. **Click:** on the *title*
2. **Select:** *Add Submission*
3. **Drag and drop** the *file* into the box **or select** the *file to upload*
4. **Select:** *Save Changes*