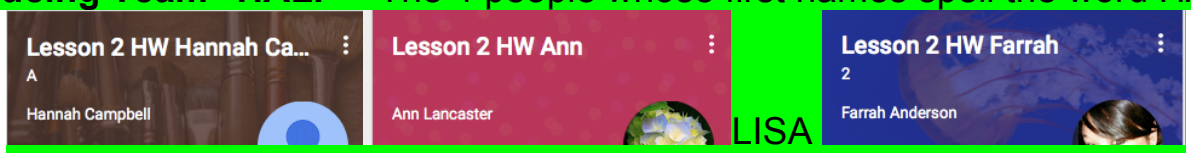
All lessons stored at http://teachingcompany.com/f15

Monday 2/4 Lesson 3 due by Sunday evening 2/21

Nice job for most of you with this Google Classroom courses in Lesson 2.
The next Google Classroom challenge will be based on two teams.

Introducing Team "E" -- The 4 people who have an "E" in your first name

Introducing Team "HALF"--The 4 people whose first names spell the word HALF

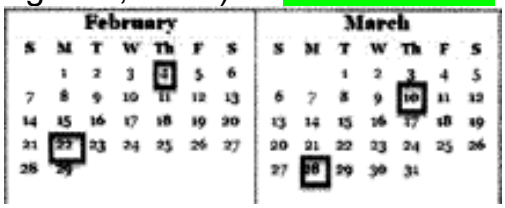


You will have a TEAM challenge each week!

First Lesson 3 Challenge (You may need to help your teammates)
a) you must enroll in the Google Classroom class of your 3 teammates
b) you can make it easy for your 3 teammates by giving them the CODE
c) or you can INVITE your 3 teammates using the INVITE feature of Google Classroom

Second Lesson 3 Challenge (You may need to help your teammates)
d) you need to go to the SURVEY FORM for ALL THREE of your teammates and complete the survey of each one
e) then you need to write her/him a note saying what you liked about the survey form and you need to CC me
f) once done with (a) to (e) and ALL THREE TEAMMATES let me know. First to finish gets 33 points for your team, second gets 32 points for your team and so on.

Team "E" (Dennis, Jessica, Reginald, Shen) vs Team "HALF" (Hannah, Ann, Lisa, Farrah)



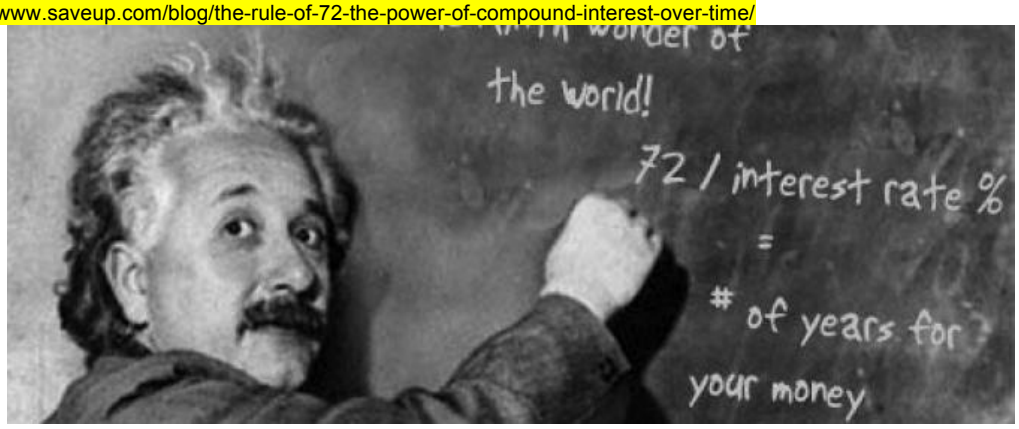
Lesson 3 HW is due 2/21. Lesson 4 will be sent on 2/22 and is due 3/9.
Lesson 5 will be sent on 3/10 and is due on 3/27. Lesson 6 to be sent on 3/28.

GD • Lesson 3 page 2 • Feb 4 due Feb 21 • River Oa

All lessons stored at http://teachingcompany.com/f15

The answer to my puzzle challenge with the spreadsheet last lesson is called the Rule of 72. It says that money doubles when the interest rate times the numbers of years is approximately 72. So at 9%, it would be 8 years and at 12% it would be approximately 6 years. If you look back at your work from Lesson 2, you will see that your spreadsheet columns fit this pattern. I love the rule of 72 since it makes it easy to figure out "how long will money double at 12% per year?" To find the answer, you divide 12 into 72 and get 6. So it will take 6% -- got it?

Picture from https://www.saveup.com/blog/the-rule-of-72-the-power-of-compound-interest-over-time/



Here is a sample. Notice the pattern. Many of you had similar spreadsheets.

Lesson 2 Money Rosanne Dukes October 4

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		7%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	18%	24%
2	2000	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
3	2001	$107.00	$102.00	$103.00	$104.00	$105.00	$106.00	$107.00	$108.00	$109.00	$110.00	$112.00	$118.00	$124.00
4	2002	$114.49	$104.04	$106.09	$108.16	$110.25	$112.36	$114.49	$116.64	$118.81	$121.00	$125.44	$139.24	$153.76
5	2003	$122.50	$106.12	$109.27	$112.49	$115.76	$119.10	$122.50	$125.97	$129.50	$133.10	$140.49	$164.30	$190.66
6	2004	$131.08	$108.24	$112.55	$116.99	$121.55	$126.25	$131.08	$136.05	$141.16	$146.41	$157.35	$193.88	$236.42
7	2005	$140.26	$110.41	$115.93	$121.67	$127.63	$133.82	$140.26	$146.93	$153.86	$161.05	$176.23	$228.78	$293.16
8	2006	$150.07	$112.62	$119.41	$126.53	$134.01	$141.85	$150.07	$158.69	$167.71	$177.16	$197.38	$269.96	$363.52
9	2007	$160.58	$114.87	$122.99	$131.59	$140.71	$150.36	$160.58	$171.38	$182.80	$194.87	$221.07	$318.55	$450.77
10	2008	$171.82	$117.17	$126.68	$136.86	$147.75	$159.38	$171.82	$185.09	$199.26	$214.36	$247.60	$375.89	$558.95
11	2009	$183.85	$119.51	$130.48	$142.33	$155.13	$168.95	$183.85	$199.90	$217.19	$235.79	$277.31	$443.55	$693.10
12	2010	$196.72	$121.90	$134.39	$148.02	$162.89	$179.08	$196.72	$215.89	$236.74	$259.37	$310.58	$523.38	$859.44
13	2011	$210.49	$124.34	$138.42	$153.95	$171.03	$189.83	$210.49	$233.16	$258.04	$285.31	$347.85	$617.59	$1,065.71
14	2012	$225.22	$126.82	$142.58	$160.10	$179.59	$201.22	$225.22	$251.82	$281.27	$313.84	$389.60	$728.76	$1,321.48
15	2013	$240.98	$129.36	$146.85	$166.51	$188.56	$213.29	$240.98	$271.96	$306.58	$345.23	$436.35	$859.94	$1,638.63

12 yrs almost double

8 years almost double

4 years almost double

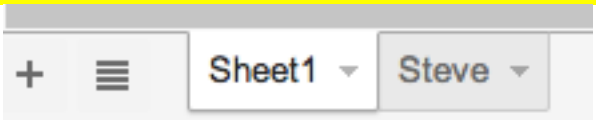
3 yrs almost double

The first part of the current lesson involves one more spreadsheet skill -- taking a rectangle of numbers and generating a graph.

I have shared a document with you called Lesson 3 Graphing Challenge Oct 2015 and also given it a TINYURL. You got a notification of this document a few days ago but you can also go to it at the URL of http://tinyurl.com/lesson3graphing and access it.

If you have trouble because you have two email accounts and cannot get in, let me know! It is best to sign in with your Google Drive account and then go to the spreadsheet found under SHARED WITH ME.

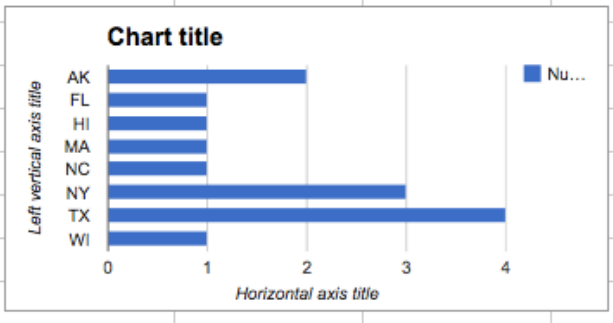
HW 3.1 The required video at http://youtu.be/2KztYAXVEV8 will show you the steps of what to do in HW 3.2 but I will elaborate via text below as well.



The + symbol at the bottom left lets you make a new TAB or new WORKSHEET and then the RENAME feature lets you give it your first name. Create a new worksheet and then use the baby triangle next to "Sheet" to rename it with your name.

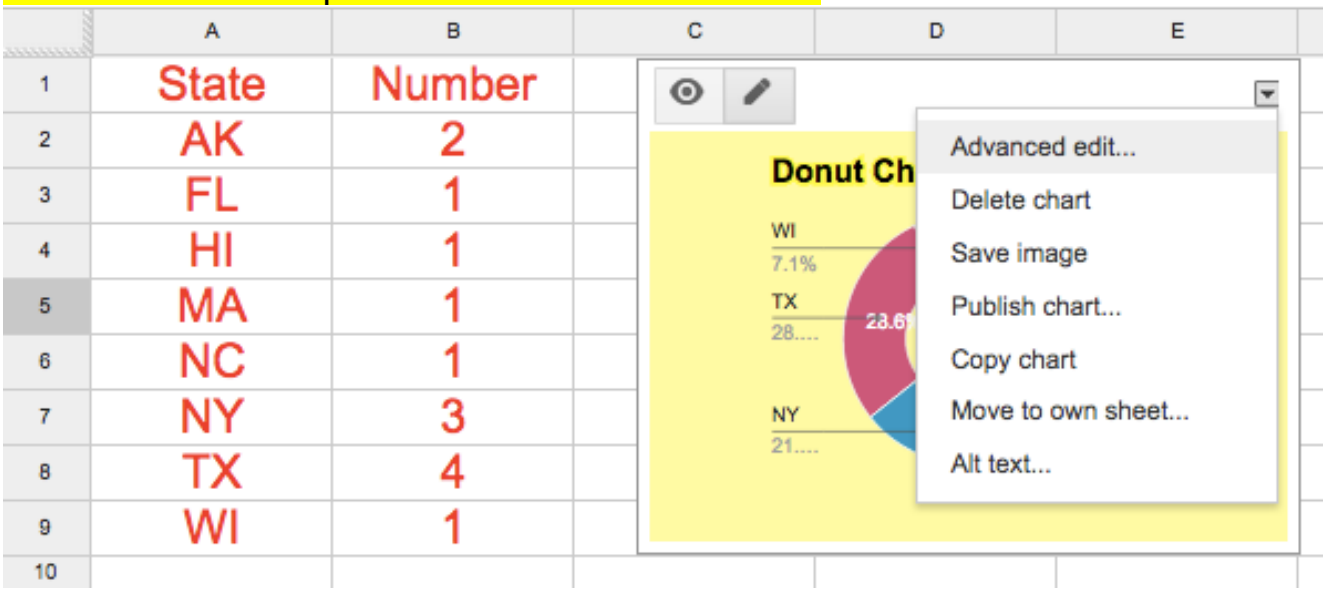
The data to graph is located on the ORIGINAL sheet and so you will copy and paste the red section to YOUR worksheet page. I have a column marked "beware" that contains a complicated COUNTIF formula that some of you may optionally want to ask me about. Once you highlight the data and choose INSERT CHART under the INSERT MENU, you will get something like this

	A	B
1	State	Number
2	AK	2
3	FL	1
4	HI	1
5	MA	1
6	NC	1
7	NY	3
8	TX	4
9	WI	1



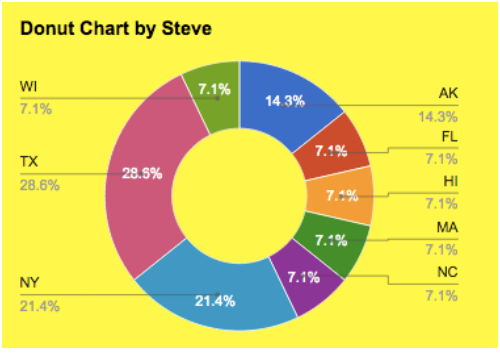
You can move the chart around by moving the mouse onto the top of the chart and getting the hand icon. You can resize by one of the bottom corners. When you click on the chart and click the pencil you get the choices in the next graphic.

Your HW 3.2 is to create a NEW SHEET on the bottom of the spreadsheet -- you will name the new sheet (sometimes called worksheet) with your first name and then COPY and PASTE the relevant data in F1 to G8 from the ORIGINAL SHEET to your SHEET. You will then create a chart on that info, labeling things etc. You can browse the charts that others have made. Try to create one that is different from the others! You can see a sample that I made called STEVE.



From this screen, you can go into ADVANCED EDIT mode. This lets you change the type of chart or the legend or font type or colors.

HW 3.2 -- after watching the video previously referenced, create a new worksheet in our group GD SS that is different from others. Name it with your FIRST NAME.



Next Topic -- How to See the Responses from Your Survey

If you go back to your survey form, you will see one menu item at the top that says RESPONSES. Once you click on RESPONSES you will see VIEW RESPONSES and you can now see each response as a row in a spreadsheet. Alternatively, if you go to SUMMARY OF RESPONSES, you get to see pie graphs and bar graphs of your data, sometimes called the ANALYTICS. So you get two ways to look at the data after people complete your survey: SPREADSHEET or ANALYTICS.

HW 3.3 -- create a document with clip art from the Add-on called Open Clip Art. Two graphics need to be WRAP and two graphics need to be INLINE. Watch the required 8 minute video at http://youtu.be/MEnj_8LMLiY for the full explanation and demonstration. Share the doc with me and include a sentence in the document on whether or not this was your first Google Drive add-on. Many more to come!

NEXT TOPIC
Next, I share with you a GD list reviewing dozens of specific things you have learned in this course, each one with an ID number. The spreadsheet is called GD Review SS and you and you can find it at the http://TINYURL.COM/GDREVIEW33 -- your name is in a column in the right that allows you to say you "got it" or "need help."

Optional Video 3.4 Here are the questions from 1 to 20 and a 22 minute optional video at http://youtu.be/WJ_NcWNFOa0 that goes through these 20 questions in order giving you answers with examples and visuals. You can fast forward or go back to any question since they are in order! This is NOT a required video but simply a resource to get help on any of these 20 questions.

HW 3.41 required. Go to the SS at http://TINYURL.COM/GDREVIEW33 and pull down the triangle for each of the 20 questions that constitute a "self-check" on do you know that skill. You can also ponder how I did the pull down triangles in this spreadsheet which you will formally learn later in the course. And if the vertical text intrigues you where you see your names, I would love to show you that trick when we have our next conversation.

1 Name each of the modules of GD and state one interesting unique feature about each one?
2 What are the steps for sharing a file in GD? What are 3 different privilege levels you can give each user?
3 How can you share a GD file with a large number of users using a GROUP of EMAILS?
4 What are the steps to making a GD file to be public to anyone with the link and how does TINYURL.COM work to help us with this? What is the disadvantage of using this approach?
5 What does it mean to "object oriented" vs "bit-mapped" in terms of drawing? Which one is GD Drawing?

6 What is the formula in a GD spreadsheet to add up the cells in a range such as D2 to D9?
7 What is the rationale for requiring all your students in a class to use a standard file saving name?
8 What is the feature called under the TOOLS menu that lets you instantly look up information or pictures on the web to pull into a GD file?
9 How do you change the citation style in GD from MLA to APA to Chicago?
10 How do you convert a Microsoft Word file into a GD file?
11 How do you convert a GD file into a Microsoft file?
12 Demonstrate how to insert 1 picture and 1 quote into a GD using the RESEARCH TOOL creating 2 footnotes and using a certain citation style (MLA, APA, Chicago).
13 Explain how to use GD to find pictures that are copyright free.
14 What is the preferred technique of sharing a large group of files with several contacts?
15 How many owners can a document have? Is it possible to make someone else the owner?
16 Demonstrate how to use the "magic spot fill down technique" and explain why some times we highlight one cell and other times we highlight two cells?
17 How do you make numbers look like currency?
18 What formula do we use to calculate percent increase? For example if you have a number in cell E3 and you want to type into E4 a formula to calculate 9% increase, what exactly would you type?
19 What are the names for the two ways text in a WP document can interact with a graphic, e.g. the graphic is called _____ or _____ . Demonstrate an example of each in a GD WP document.
20 How do we create separate worksheets in one GD spreadsheet? How do you name or rename each one?

And now for our next topic:

The $ Symbol

Let us go back to Google Docs spreadsheet and learn about **the $ symbol** in the context of the bank interest program. Let us say that my boss wants to contemplate ANY percentage and we don't want all of those columns that you made on the last lesson. Can we have just one column and change the percentage in one cell from 1.04 to 1.05 to 1.12 and so on?

HW 3.5 Yes, we can and I will teach you how to do so in this required 8 minute video called Lesson 3 Dollar Symbol GD course -- http://youtu.be/nuGMrX0yddM

To reinforce the video lesson, please look at this formula that contains the mysterious $ symbol known and understood by a small percentage of people!

	A	B	C
1		Percent Increase	1.08
2			
3	2000	$100.00	
4	2001	=B3*C1	
5	2002	$116.64	
6	2003	$125.97	
7	2004	$136.05	
8	2005	$146.93	
9	2006	$158.69	

The formula in B4 looks like =B3*C1 but instead it is =B3*C1 and as you will hear in the video, the $ symbols wrapped around the letter C are declaring that the cell C1 is a CONSTANT not to be changed when you fill down with the magic spot. For over 20 years, I have used the bad joke that "Bill Gates declared nothing to be more sacred than money and that is why he chose the $ symbol."

Here is what most people would do in setting up this problem

	A	B	C
1		Percent Increase	1.08
2			
3	2000	$100.00	
4	2001	=B3*C1	
5	2002	$0.00	
6	2003	$0.00	
7	2004	$0.00	
8	2005	$0.00	

and even though you get the right answer for B4, you mess up everything below when you fill down. Why? Because this situation requires at least one $ symbol.

Finally, I want to point out that you can get away with

	A	B	C
1		Percent Increase	1.08
2			
3	2000	$100.00	
4	2001	=B3*C$1	
5	2002	$116.64	
6	2003	$125.97	
7	2004	$136.05	
8	2005	$146.93	

since the $ symbol affects what it is in front of (in this case the "1"). However, until you have done 10 or 20 examples, you are better off using the $ symbol before and after the letter. The formula =B3*C$1 technically means that column "C" can be altered when you fill right but that row "1" is to be considered sacred when you fill down. Since in this example, we just fill down, this formula works with just one dollar symbol.

By the way, when you use a command such as =B3*C3 that is called *relative reference* since when you fill down or fill right, the variables are changed relative to where you started. In contract, in using =B3*C3, we would call C3 an *absolute reference* since all formulas based on this one would remain referencing C3.

Here is the finished product as you will see on the video

	A	B	C	D	E	F	G
1		Percent Increase	1.08			The formula in B4 looks like =B3*C1	
2							
3	2000	$100.00		2021	$503.38		
4	2001	$108.00		2022	$543.65		The rule of 72 says that to double money in the bank, you multiply the # years times the percentage and that equals 72 (approximately).
5	2002	$116.64		2023	$587.15		
6	2003	$125.97		2024	$634.12		
7	2004	$136.05		2025	$684.85		
8	2005	$146.93		2026	$739.64		
9	2006	$158.69		2027	$798.81		
10	2007	$171.38		2028	$862.71		
11	2008	$185.09		2029	$931.73		
12	2009	$199.90		2030	$1,006.27		
13	2010	$215.89		2031	$1,086.77		
14	2011	$233.16		2032	$1,173.71		
15	2012	$251.82		2033	$1,267.60		
16	2013	$271.96		2034	$1,369.01		
17	2014	$293.72		2035	$1,478.53		Hope you understand that this example is a complicated one.
18	2015	$317.22		2036	$1,596.82		
19	2016	$342.59		2037	$1,724.56		
20	2017	$370.00		2038	$1,862.53		
21	2018	$399.60		2039	$2,011.53		
22	2019	$431.57		2040	$2,172.45		
23	2020	$466.10		2041	$2,346.25		

Next command: The IF command
This lets you decide if something is true, whether numbers or words.

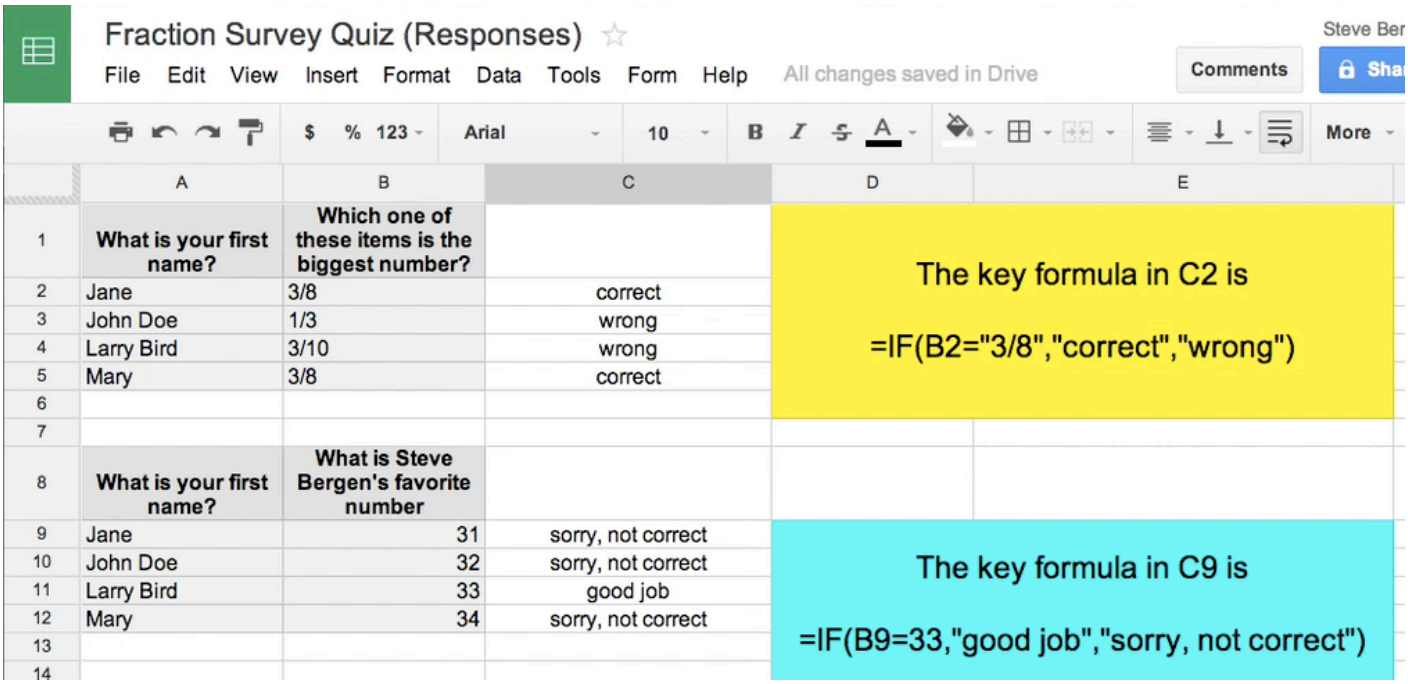
In the homework, you will see two required spreadsheet problems that require the use of the $ symbol to solve and several optional challenges

HW 3.51 Required
Larry, Kevin, and Robert are 3 basketball players who make $33,000, $44,000 and $32,000 respectively. The owner of the Boston Celtics wants to give them a percentage increase (the same for all 3) but has not decided what percent yet. So you need to create a GD spreadsheet that lets the owner type in 1.03 or 1.04 or 1.05 into one special cell and the computer then shows their salaries. Please do this as a new GD spreadsheet and put it into your folder called HW to Steve from ??? once done. This same GD spreadsheet will have one TAB for HW 3.51 and one TAB for HW 3.6.

HW 3.52 Next, let us learn to use the IF statement in this 3 minute video titled Lesson 4 IF Command GD course -- http://youtu.be/9IUxNCJ4VxM

Note that the IF formula has 3 things inside the parentheses separated by two commas. These 3 things are called "parameters." The first parameter is something

that is either true or false. If the first parameter is true, then the second parameter is inserted into the cell. Otherwise the third parameter is inserted. That is why you see "correct" or "wrong" in the cells below in column C for the first example.



	A	B	C
1	What is your first name?	Which one of these items is the biggest number?	
2	Jane	3/8	correct
3	John Doe	1/3	wrong
4	Larry Bird	3/10	wrong
5	Mary	3/8	correct
6			
7			
8	What is your first name?	What is Steve Bergen's favorite number	
9	Jane	31	sorry, not correct
10	John Doe	32	sorry, not correct
11	Larry Bird	33	good job
12	Mary	34	sorry, not correct
13			
14			

Whenever you have numbers (called "numeric data") you do not need quotes.

=IF(B9=33,

However, when you deal with words and even 3/8 is called a word since there is no equals in front of it, then you need quotes. We call these "alphanumeric data."

,"sorry, not correct" or =IF(B2="3/8",

Here is a HW assignment problem with the IF statement that requires you to use both the IF formula and the $ symbol.

HW 3.6 Optional

Alice, Barbara and Carol earned scores of 58,78 and 88, respectively on a test. Use an IF statement in a column next to their score to indicate who passed or not by having the word "PASS" or "FAIL" appear automatically. Let us call 65% passing. Then add a column for curving their score using the $ symbol to reference a number which will increase the grade equally for all 3 of them by whatever percentage is specified in a certain designated cell.

Please do all these homework assignments on 1 spreadsheet called
Lesson 3 Spreadsheet Problems Jane Doe

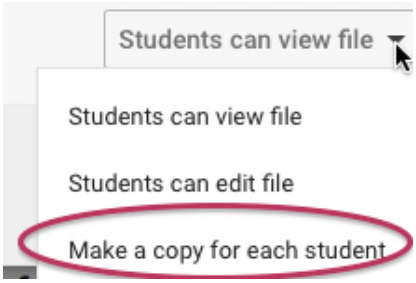
Each problem you do should be on a different worksheet TAB on the bottom. You can put this file into the folder previously called HW TO STEVE FROM ??? but you should send me an email so I can check your work and give you some feedback.

HW 3.7 Optional Challenge (if you do this, put it into a new TAB on the same SS) Create a 2 column spreadsheet with the odd numbers from 1 to 21 in the first column. In the second column show the partial sums so next to 3 will be 1+3 and next 9 will be 1+3+5+7. You should do this by using a formula in the cell next to 3 that contains a $ symbol usage and then fill down with the magic trick.

HW 3.8 Optional Challenge (if you do this, put it into a new TAB on the same SS) Create a three column spreadsheet with the temperatures for 20 consecutive possible Celsius temperatures, e.g. 1 to 20 degrees or 41 to 60 degrees or -31 to -10 degrees in column one. The user should be allowed to choose the low number and your 20 temperatures should be based on that one via formula with the $ symbol. Then in column two, use a formula that changes Celsius to Fahrenheit such as F=(9/5)*C+32 or F=1.8*C+32 to compute all the equivalent temperatures. Then in column three, use an IF formula to see if the Celsius and Fahrenheit are the same, saying "same" or "different" in each cell.

Google Classroom Required Video
https://youtu.be/ZBn9vup8j7U or shortcut name tinyurl.com/gcincredible33

HW 3.85 Task to do: Create a short 3 question or 4 question file as a Google Doc called Lesson 3 Worksheet Name with your name of course. Now using the technique taught in the video, distribute this worksheet to all the students in your Lesson 2 course. Make sure you use the important triangle.



Note: I am not asking you in lesson 3 to complete the worksheet of your teammates or to grade the work of your teammates. All I am asking you in HW 3.85 is to
-- watch the video
-- create a short worksheet that has either content or silly questions
-- distribute it to the students enrolled in the class.

Finally, our lesson will involve getting started (first base before second base) with Google Sites. The video below gives you all the details and instructions. Please note that you are being asked to simply create a SITE with a specified name and type. Once you do so, you send me the URL and I will test it.

HOW TO GET TO GOOGLE SITES: METHOD 1
The URL for Google Sites is http://sites.google.com -- you might say that Google Sites is a cousin of Google Drive which has a URL of http://drive.google.com

HOW TO GET TO GOOGLE SITES: METHOD 2
If you look at Google Drive or Gmail, you will see an icon that looks like a TIC-TAC-TOE board with 9 dots -  . This leads you to other Google modules, e.g. Google Sites.
Here are some key things to complement the video and to reinforce certain points. Each item marked SPEC is an important specification for you to make sure you do right! In my first few years of being a computer teacher in the 1980s, I had a hard time grading and evaluating computer projects. Then an Art teacher colleague told me about putting SPECS into projects and alerting the students loud and clear that these were some of the items by which they would be evaluated. This was before grading rubrics became popular. Once I started doing that, it was much easier to give students feedback, evaluation and grades on their projects since I had my checklist of SPECS and they would know which ones they did well and which ones they did not complete properly.

You will be dealing with a CAPTCHA that looks like this:

It is fun to learn this word which is an acronym for *Completely Automated Public Turing test to tell Computers and Humans Apart*, a trademark of Carnegie Mellon University. A CAPTCHA is a type of challenge-response test (named after a computer scientist named Alan Turing) used to determine whether or not the user is human. The term was coined in 2000 (info from http://en.wikipedia.org/wiki/Captcha).

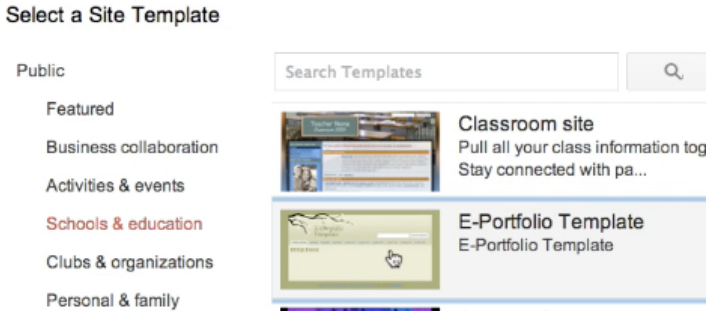
Trivia Note: Alan Turing is the main character in the movie The Imitation Game for which Benedict is the main actor playing Turing.

HW 3.9: Here is the 12 minute video to watch before or after the reading (your choice) -- http://youtu.be/62NAtdAr8xw

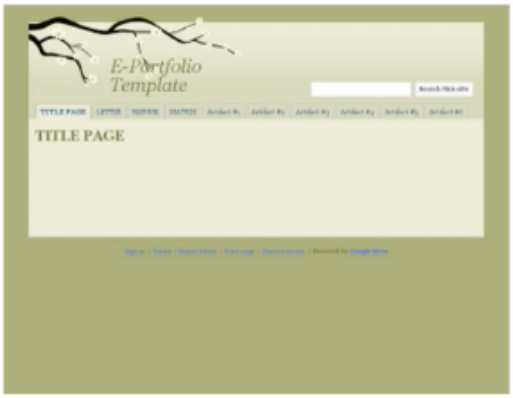
HW 3.91 Required Create a Google Site according to the specs and details below.

SPEC: You must use a site name such as 33SteveB33 using a number, your first name, the first initial of your last name and then the same number. You do the typing in this top box and the lower box with your URL is filled in by the computer. Take note of the URL however in the lower box because that is how you tell me you have done this homework!

SPEC: You must choose this grouping -- Schools & Education -- for Site Templates and then you must choose the category of E-Portfolio template for this assignment.



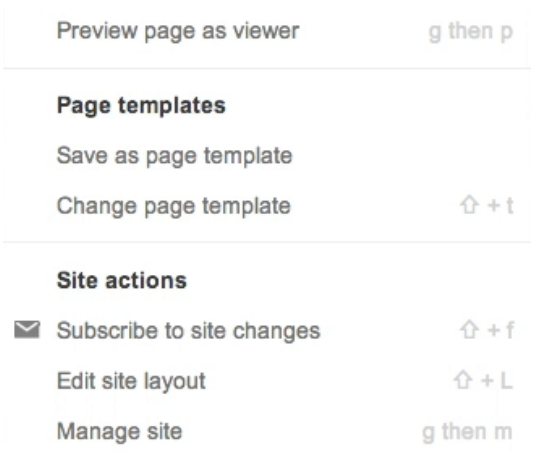
In a subsequent lesson, we will create a BLANK Google Site and you will see the difference. But for now, you must choose this one.



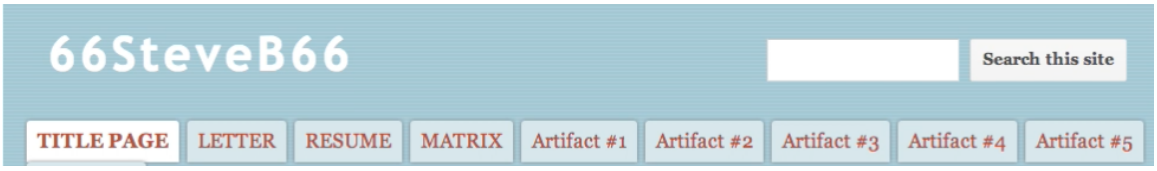
E-Portfolio Template
By nawrojn
E-Portfolio Template

Preview template

Here are several of the most important choices under the MORE menu

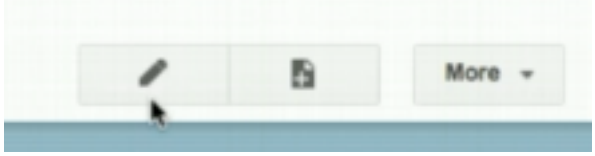


Overview:
Your website will have a URL that looks like https://sites.google.com/site/66steveb66 with a look that looks like this.

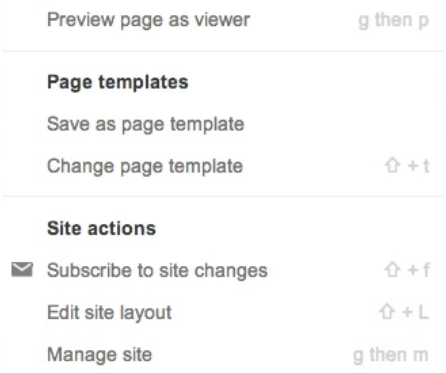


Give your website a title and one sentence with a link to summercore33.com/33, a personal page devoted to why I admire Larry Bird who wore #33 for the Boston Celtics.

In order to EDIT your website, you need to click the PENCIL



Here are the two most important parts of the MORE button: EDIT SITE LAYOUT and MANAGE SITE.
The EDIT SITE LAYOUT option lets you get a SIDEBAR for your website.
The MANAGE SITE option lets you permanently delete items.
Also under MORE you will find DELETE page.



Good luck! I look forward to seeing a website from each of you that has one link to the summercore33.com/33 webpage. Don't forget to give me access by choosing SHARING and changing the sharing specs to

Steve 
phone = 781-953-9699
skype name = stevebergen (no spaces)
Email = sbergen33@gmail.com

Optional Topics for our 30 Minute Conversation on Next Pages (if interested)

Optional 3.10 for more advanced users only:
Using the SPLIT formula in GD: 2 min video at http://youtu.be/hCnu0aETC-I
Using the COUNTIF formula in GD: 3 min video at http://youtu.be/OnLs3JLjCvQ
Fancier features with GD Forms: 5 min video at http://youtu.be/qXMHxxuOn1Y

Optional 3.11 Challenge -- using the GD at http://tinyurl.com/presidents33, copy and paste the data into a new TAB WORKSHEET and put your name on it
I would like to see you in your individual worksheet
a) freeze the first column and the top two rows (use FREEZE under VIEW)
a) insert columns between A and B and put the names into 2/3 columns using the SPLIT command
b) demonstrate in the YELLOW the use of the =COUNTIF command to tally the number of Presidents inaugurated at under age 60 as well as the number of Presidents from one state of your choosing

Optional 3.12 for our 30 minute conversation -- I will get you started with the Flubaroo journey if it seems that it is something you can use.

INDEX of HIGHLIGHTS can be found on the last page

☑ GC Lesson 3 Assignment 1 -- join the classes of your 3 teammates
☑ GC Lesson 3 Assignment 2 -- take the survey form of your 3 teammates
Send me email once done and you will earn points for your team!
Team "E" (Dennis, Jessica, Reginald, Shen) vs Team "HALF" (Hannah, Ann, Lisa, Farrah)

☑ HW 3.1 video to watch about making a graph (p3)

☑ HW 3.2 Add worksheet page with chart to the SS I have made (p4)

☑ HW 3.3 Watch video and produce a sample with 2 inline and 2 wrap graphics using the Add-On called Open Clip Art.

☑ HW 3.4 Optional video that reviews skills 1 to 20 (p6)

☑ HW 3.41 Required spreadsheet task on 20 skills (p6)

☑ HW 3.5 video to watch about the $ symbol (p8)

☑ HW 3.51 Required spreadsheet on Larry, Kevin, Robert (p10)

☑ HW 3.52 video to watch about the IF command (p10)

☑ HW 3.6 optional spreadsheet on Alice, Barbara, Carol and IF (p11)

☑ HW 3.7 optional challenge on Adding Odd Numbers (p12)

☑ HW 3.8 optional challenge on Celsius/Fahrenheit (p12)

☑ HW 3.85 required video and Lesson 3 Worksheet on GD and GC

☑ HW 3.9 required video on Google Sites (p14)

☑ HW 3.91 Create a Google site according to specs (p14)

☑ HW 3.10 optional video on SPLIT, COUNTIF and GD Forms (p16)

☑ HW 3.11 optional SS task with US Presidents (p16)

☑ HW 3.12 optional one-on-one with Flubaroo (p16)