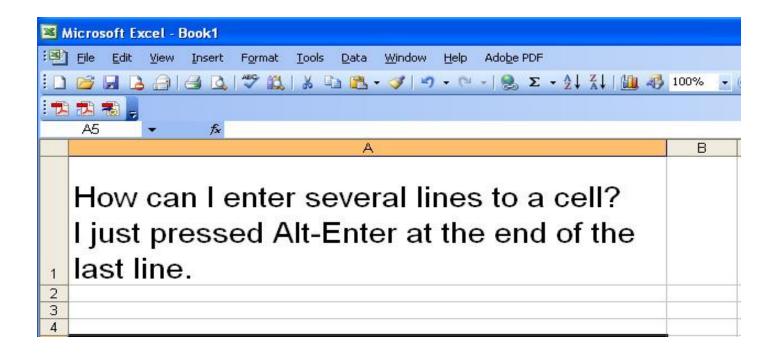
Excel

Angelo Gargantini Basic CS Medical school

Tips and Tricks with Excel

Add a carriage return to a cell's contents

- **Problem**: You need to enter a long text to a cell, each time you press Enter to separate lines, Excel just takes you to a new cell.
- Solution:
 - PC: press Alt-Enter at the end of a line
 - MAC: press Command-Option Enter at the end of a line



Get rid of spaces

• TRIM()

🛛 Micro	soft Excel - Book3					
: Eile	Edit <u>View</u> Insert F <u>o</u> rmat <u>T</u> ools	<u>D</u> ata <u>W</u> indow <u>H</u> el	p Adobe PDF			
	B B B B B B B B B B	a 🖹 = 🏈 🤊 = ($ \cdot \bigotimes \Sigma \cdot A \downarrow A \downarrow $	100%	🗾 🕜 👦 🛛 Arial	- 10 - B I <u>U</u>
1						
B1	✓ f _* =TRIM(A1)					
		А			В	
1	Please get rid of	extra	spaces	Please	e get rid of e	xtra spaces
2						
3						
4						

Symbol changed by Excel Unintended format

1	hicrosoft Excel - Book1	
1	Eile Edit <u>V</u> iew Insert <mark>Form</mark>	<mark>at I</mark> ools <u>D</u> ata <u>W</u> indow <u>H</u> elp Ado <u>b</u> e I
	🖻 🖬 🔓 🚔 🖓 🗳	🎎 X 🖻 🖪 - 🟈 9 - P - 😫
1	128,	
_	A1 ▼ f₂ ID A	В
1	ID	Default format
2	SEP2	2-Sep
3	2310009E13	2.31E+19
4	0223345	223345
5 6		

- Cause:
 - Excel automatically applies a built-in number format to a cell, based on the following criteria:
 - If a number contains month JAN to DEC, it may be converted to a date format.
 - If a number contains the letter E (in uppercase or lowercase letters; for example, 10e5), or the number contains more characters than can be displayed based on the column width and font, the number may be converted to scientific notation, or exponential, format.
 - If a number contains leading zeros, the leading zeros are dropped.

Symbol changed by Excel: Solution

- 1. Before you populate the data into excel, select the cells that will contain the numbers stored as text
- 2. Right-click and choose Format Cells >Text > OK
- If a symbol is copied from an website, you may need to use Paste Special
 Text or Unicode Text

Microsoft Excel - Book1	Microsoft Excel - Book1
💌 Eile Edit View Insert Format Tools Data Window Help Adob	:] Eile Edit View Insert Format Tools Data Window Help Adobe PDF
E 🖻 🔒 🕒 🖨 🖓 🖏 🕺 🖓 🖓 👘 🖉 • 🏈 👘 • 🔍 • 🖗	
: 🔁 🔁 🐮 🖕	
E1 ▼ f≥	1 🔁 🔁 🚓 🖕
A B C D E F	A1 v fx
2	A B C D E F G
2 3 Format Cells	2 Paste Special
	2 Paste Special ?X
5 Number Alignment Font Border Patterns Protection 7 Category: Sample	4 Source:
7 Category: Sample	5
Number	6 As: Cancel
10 Accounting Text format cells are treated as	7 O Paste: HTML Unicode Text
11 Date text even when a number is in the 12 Time cell. The cell is displayed exactly as	8 Paste link: Unicode Text 9
12 Percentage entered.	10
14 Scientific 15 Text	11 Display as icon
15 Special	12 Display as icon
16 Custom 17	13 Result
18	14 Inserts the contents of the Clipboard as text
70	
21	16 17
22	18
23 24 OK Cancel	19
12 Time cell. The cell is displayed exactly as entered. 13 Percentage entered. 14 15 Special 16 Custom 17 18 19 20 21 22 23 24 OK Cancel	20

Highlight duplicated cells

 Highlight the region that may have duplicated values

Format >

conditional formatting

- Formula Is:
 - =COUNTIF (region, cell)>1
 - Region: absolute rows and columns
 - \$C\$2:\$C\$15
 - Active cell: relative reference

• C2

Maintain the position(s) of cell(s) in a formula:

Prefix "\$" to create an absolute link

	<u>V</u> iew Insert	Forma	t <u>T</u> ools	Data	Window	Help	Adobe PDF					
0 🗃 🖬 🖪	ALAR	<u>@</u> (els		Ctrl+1	- (*	- 🧕 Σ -		100	% 🗸 🌔	Arial	
122		E	.ow)	-				-		
C2		(olumn		,			01110T	A 4 CTTT	TOTATO	O A AT	
	r f∡, B		heet			MAII	AAAICIGIAA	C	WAGITT	TUTAIL		
A 1 symbol	Value	-	2			-		U.				
2 CCR1	5.8	1	utoFormal			000	ATTAAATCTGT		TAAAGT	TTTTCT	ΔΤΟΟΔΑΤ	
3 NPPA	8.10	(onditional	Formatt	ing	August	CGATGTTAAA		Construction of the second second second	a di se mandra da di da da mina da min	and the second second second	
4 AQP7	6.5		tyle			-	AGTAGAGCTT					
5 HVCN1				JALAA		College	TCAGGCTTTT					
GPR33	6.3						TITACACITGA					
7 MAML2	6.54						CCATTITAACT					
8 PTDSS2	8.20	07 CT	CCTGC	TTCA	TCTATCA	ACGAT	CGATGTTAAA	TGTAGAT	GAGTGG	TCTAGT	GGGGTCT	
J LCE1F	6.8	11 TC	TCGGT	оптол	ATGTCTI	TCATCI	TGTGAAATGC	TGAAATTO	CTATATC	AAGTTO	TAAAAC	
0 ITFG1	9.78	33 AT/	CTAATO	CTTG	CACAGT	AACAT	TAAATGATTTG	CTCTCTT	GAAAGA	AAGCTO	GATAGAGG	
1 ELMO1	7.05	57 AC.	ATTTTT	GCCAV	AACAGA	TATAT	ATTTAATGAA	GAGATAC	ATAAATO	GTGTGT	ACTITCC	
2 CRTAC1	6.94	46 AC	GCACA	AGCCT	GTGTGG	GCTCAV	AGTGGCCTTT	TAGGTG	GGTACTC	ATCGG	CTGCCTTTA	
		the second se					TTGCCGGAGC					
3 PNPT1 4 SOX9	10.30	08 AT/	AAACC	TTAAA	GCGTTC	TTATA	ATATGGCATC	TTTCGAT	TTCTGTA	TAAAAA	ACAGACC	
3 PNPT1 4 SOX9 5 TMEM144 Microsoft Exce	10.30 6 21 - Book3	08 AT/ .5 <u>AG</u>	WAAACC GCATAT	TTAAA CGGA	GCGTTC	CTTATA TGTCT/	ATATGGCATC	CTTTCGAT ACTTAATA	TTCTGTA	TAAAAA	ACAGACC	
3 PNPT1 4 SOX9 5 TMEM144 Microsoft Exce 1 Ele 2 Ele 2 Ele 2 Ele	10.3(6 el - Book3 jew Insert	08 AT/ .5 AG Form	VAAACC GCATAT at Iools	TTAAA CGGA : Dati	GCGTTC TCATCC a <u>W</u> indo L - √	CTTATA TGTCT/ DW He	ATATGGCATC AACAATGTCT/ elp Ado <u>b</u> e PDF (* -) Σ		TTCTGTA ACTATAA	TAAAAA TCCAGA	ACAGACC	Arial
3 PNPT1 4 SOX9 5 TMEM144 Microsoft Exce 1 Elle 2 Elle 2 2	10.30 6 21 - Book3 jew Insert 20 4 10 fx 1	08 AT/ .5 AG Form	VAAACC GCATAT at Iools	TTAAA CGGA : Dati	GCGTTC TCATCC a <u>W</u> indo L - √	CTTATA TGTCT/ DW He	ATATGGCATC AACAATGTCT/ elp Ado <u>b</u> e PDF	TTTCGAT ACTTAATA - 2 2 2	TTCTGTA ACTATAA	TAAAAA TCCAGA	ACAGACC	Arial
3 PNPT1 4 SOX9 5 TMEM144 6 Edit y 6 Edit y 7 E 7 E 7 E 7 E 7 E 7 E 8 E 7 E 7 E 7 E	10.3 1 - Book3 jew Insert 1 - Book3 jew Insert 5 - A 5 - A B	08 AT/ .5 AG Form	AAACC 3CATAT at Iools Q X TAAGAT	TTAAA CGGA : Dati	GCGTTC TCATCC a <u>W</u> indo L - √	CTTATA TGTCT/ DW He	ATATGGCATC AACAATGTCT/ elp Ado <u>b</u> e PDF (* -) Σ		TTCTGTA ACTATAA	TAAAAA TCCAGA	ACAGACC	Arial
3 PNPT1 4 SOX9 5 TMEM144 6 Ele 6 Ele 6 Ele 6 Ele 7 Ele 6 Ele 7 Ele 8 Ele 9 C2 A symbol	10.3 el - Book3 jew Insert A A B Value	08 AT/ .5 AG Form AGTA	AAACC GCATAT at Iools A A TAAGAT	ITAAA CGGA Data CD P	GCGTTC TCATCC a Windo 4 Vindo 5 Vindo TGTCA4	CTTATA TGTCT/ DW He	ATATGGCATC AACAATGTCT/ elp Ado <u>b</u> e PDF C - I S Σ ATTAAATCTG1	C THOGAT ACTTAATA - 21 21 FAACAAA C		TAAAAA TCCAGA 100%	ACAGACC MAATAGG	
3 PNPT1 4 SOX9 5 TMEM144 6 Ele 6 Ele 6 Ele 7 Ele 6 Ele 7 Ele 7 Ele 7 Ele 8 Ele 9 C2 A symbol CCR1	10.3 el - Book3 jew Insert A A B Value	08 AT/ .5 AG Form AGTA	AAACC GCATAT at Iools A A TAAGAT	ITAAA CGGA Data CD P	GCGTTC TCATCC a Windo 4 Vindo 5 Vindo TGTCA4	CTTATA TGTCT/ DW He	ATATGGCATC AACAATGTCT/ elp Ado <u>b</u> e PDF (* -) Σ	C THOGAT ACTTAATA - 21 21 FAACAAA C		TAAAAA TCCAGA 100%		AT
3 PNPT1 4 S0X9 5 TMEM144 Microsoft Exce 6 Elle Edit V 6 2 2 7 C2 7 A symbol CCR1 NPPA	10.3 el - Book3 jew Insert A A B Value	18 AT, 5 AG Form AGTA AGTA 34 AG	AAACC GCATAT at Iools A AGAT TAAGAT	ITAAA CGGA Data CD P	GCGTTC TCATCC a Windo 4 Vindo 5 Vindo TGTCA4	CTTATA TGTCT/ DW He	ATATGGCATC AACAATGTCT/ elp Ado <u>b</u> e PDF C - I S Σ ATTAAATCTG1	C THICGAT ACTTAATA • 21 21 TAACAAA C		TAAAAA TCCAGA 100%		AT STCT
3 PNPT1 4 SOX9 5 TMEM144 5 File 6 Eile 6 Eile 6 Eile 7 Eile 6 Eile 7 Eile 7 Eile 6 Eile 7 Eile 8 Eile 8 Eile 8 Eile 8 Eile 8 Eile	10.30 6 el - Book3 jew [nsert & 2 B Value 5.80 Conditional	18 AT, 5 AG Form AGTA AGTA 34 AG	AAACC GCATAT at Iools A AGAT TAAGAT	ITAAA CGGA Data CD P	GCGTTC TCATCC a Windo 4 Vindo 5 Vindo TGTCA4	CTTATA TGTCT/ DW He	ATATGGCATC AACAATGTCT/ elp Ado <u>b</u> e PDF C - I S Σ ATTAAATCTG1	C THICGAT ACTTAATA • 21 21 TAACAAA C		TAAAAA TCCAGA 100%		AT STCT ATA
3 PNPT1 4 SOX9 5 TMEM144 5 TMEM144 6 Elle Edit Y 6 File Edit Y 7 File File Edit 8 File File File 8 File File File 8 File File File 8 File File </td <td>10.30 6 9 Book3 9 B Value 5.80 Conditional</td> <td>18 AT, 5 AG Form AGTA See 34 AG Form</td> <td>AAAACC GCATAT I Iools I IAAGAT IAAGAT I IAAGAT Atting</td> <td>ITTAAA CGGAA : Data : D</td> <td>AGCGTTC TCATCC Minda Minda TGTCA4 TGTCA4</td> <td></td> <td>ATATGGCATC AACAATGTCT/ elp Adobe PDF C - S S S ATTAAATCTGT</td> <td>C THICGAT ACTTAATA • 21 21 TAACAAA C</td> <td></td> <td>TAAAAA TCCAGA 100%</td> <td></td> <td>AT STCT ATA</td>	10.30 6 9 Book3 9 B Value 5.80 Conditional	18 AT, 5 AG Form AGTA See 34 AG Form	AAAACC GCATAT I Iools I IAAGAT IAAGAT I IAAGAT Atting	ITTAAA CGGAA : Data : D	AGCGTTC TCATCC Minda Minda TGTCA4 TGTCA4		ATATGGCATC AACAATGTCT/ elp Adobe PDF C - S S S ATTAAATCTGT	C THICGAT ACTTAATA • 21 21 TAACAAA C		TAAAAA TCCAGA 100%		AT STCT ATA
3 PNPT1 4 SOX9 5 TMEM144 5 TMEM144 6 Elle Edit Y 6 File Edit Y 6 File Edit Y 6 File Edit Y 6 File Edit Y 7 File Edit Y 6 CCR1 NPPA AQP7 HVCN1 GPR33 File File	10.30 6 el - Book3 jew [nsert & 2 B Value 5.80 Conditional	18 AT, 5 AG Form AGTA See 34 AG Form	AAAACC GCATAT I Iools I IAAGAT IAAGAT I IAAGAT Atting	ITTAAA CGGAA : Data : D	GCGTTC TCATCC a Windo 4 Vindo 5 Vindo TGTCA4		ATATGGCATC AACAATGTCT/ elp Adobe PDF C - S S S ATTAAATCTGT	C THICGAT ACTTAATA • 21 21 TAACAAA C		TAAAAA TCCAGA 100%		AT STCT ATA ATC TATT
3 PNPT1 4 SOX9 5 TMEM144 5 TMEM144 6 Elle Edit Y 6 File Edit Y 6 File Edit Y 6 File Edit Y 7 File Edit Y 6 File Edit Y 7 File File File 7 File File File File 6 File File File File File 7 HVCN1 GPR33 MAML2 File	10.30 6 iew Insert 1 - Book3 iew Insert 2	18 ATJ 5 AG Form AGTA 34 AG Form	AAAACCC GCATAT It Iook IAAGAT TATAAC Atting =COUN	ITTAAA CGGAA : Data : D	AGCGTTC TCATCC Minda Minda TGTCA4 TGTCA4	СТТАТА Т <u>GTCT</u> / оw <u>H</u> е •) • АААААА СААААА		C THICGAT ACTTAATA • 21 21 TAACAAA C				AT STCT ATA ATC TATT GCCT
3 PNPT1 4 SOX9 5 TMEM144 6 Edit y 6 Edit y 6 Edit y 7 Edit y 8 F 7 A Symbol CCR1 NPPA AQP7 HVCN1 GPR33 MAML2 PTDSS2	10.30 6 9 Book3 9 B Value 5.80 Conditional	18 ATJ 5 AG Form AGTA See 34 AG Form	AAAACCC GCATAT It Iools It Iools Iools It Iools It Iools It Iools It Iools	ITTAAA CGGAA : Data : D	AGCGTTC TCATCC Minda Minda TGTCA4 TGTCA4	СТТАТА Т <u>GTCT</u> / оw <u>H</u> е •) • АААААА СААААА	ATATGGCATC AACAATGTCT/ elp Adobe PDF C - S S S ATTAAATCTGT	C THICGAT ACTTAATA • 21 21 TAACAAA C		TAAAAA TCCAGA 100%	ACAGACC WAAATAGG TATCCAAT TTATCCAAT TGGGG TGGAC AGAT GGGGG	AT STCT ATA ATC TATT GCCT STCT
3 PNPT1 4 SOX9 5 TMEM144 6 Edit y 6 Edit y 6 Edit y 7 Edit y 8 F 9 A	10.30 6 1 - Book3 jew Insert 1 - Book3 jew Insert 2 - Book3 5 - Book3 - Book3	18 ATJ 5 AG Form AGTA See 34 AG Form	AAAACCC GCATAT It Iools It Iools Iools It Iools It Iools It Iools It Iools	ITTAAA CGGAA : Data : D	AGCGTTC TCATCC Minda Minda TGTCA4 TGTCA4	СТТАТА Т <u>GTCT</u> / оw <u>H</u> е •) • АААААА СААААА		C THICGAT ACTTAATA • 21 21 TAACAAA C				AT STCT ATA ATC TATT GCCT STCT AC
3 PNPT1 4 SOX9 5 TMEM144 6 Edit y 6 Edit y 6 Edit y 7 Edit y 8 F 7 A Symbol CCR1 NPPA AQP7 HVCN1 GPR33 MAML2 PTDSS2	10.30 6 1 - Book3 jew Insert 1 - Book3 jew Insert 2 - Book3 5 - Book3 - Book3	18 ATJ 5 AG Form AGTA See 34 AG Form	AAAACCC GCATAT It Iools It Iools Iools It Iools It Iools It Iools It Iools	ITTAAA CGGAA : Data : D	GCGTTC TCATCC ¹ a <u>Windo</u> J J J J TGTCAA TGTCAA TTATGTC	СТТАТА Т <u>GTCT</u> / оw <u>H</u> е •) • АААААА СААААА		C THICGAT ACTTAATA • 21 21 TAACAAA C				AT STCT ATA ATC TATT GCCT STCT AC AGG

AGGCATATCGGATCATCCTGTCTAACAATGTCTACTTAATACTATAATCCAGAAAATAGG

15 TMEM144

16

Highlight duplicated cells

Format > Patterns > choose color > OK

	ft Excel - Boo Edit <u>V</u> iew Ir	nsert Form	at Tools Da	Pata Window Help Adobe PDF	
	LD AIA	_	iac <u>r</u> oois <u>p</u> a	Format Cells	Arial
	No.	100	10 HE		aria)
12 12 1	5 -			Font Border Patterns	
C2	-	f ∧ AGTA	TAAGATGTT		
1	Ą	В		Cell shading Color:	
1 symbo	ol Value	e Se	equence		
2 CCR1	-	5.834 AG	GTATAAGAT	No Color	AT
3 NPPA	Condit	ional Forn	autting		TCT
4 AQP7	1	ional rom	natting		ATA
5 HVCN	Condic	ion <u>1</u>	12/		ATC
6 GPR33	Forr	nula Is 🛛 🗸	=COUNTIF(\$		ΓΑΤΙ
7 MAML	0,				GCC
8 PTDSS		iew of formal n condition is		Sample	TCT
9 LCE1F		reonadorna			AC.
10 ITFG1					AGG
11 ELMO				Pattern:	DC STTT
13 PNPT1	and the second s	8 106 01	TCTAGCACT		GG
14 SOX9			AAAACCTTA		00
15 TMEM	144		GCATATCG		AGG
16		0.0	200/11/11/00		
17				OK Cancel	
18					-

21	Aicrosoft Exce	el - Book3	
1	<u>File E</u> dit <u>V</u>	jew Insert F	Format Iools Data <u>Wi</u> ndow Help Adobe PDF
0	🔓 🖟 🔒		🌮 🚉 λ 🗈 🛍 • 🛷 🔊 • 🔍 - 🧶 Σ • Δ ↓ 🕌 🛄 🦓 100% 🛛 @ 🙀 j Arial
1	12 🕄		
1	C1 -	<i>f</i> ∗ Se	equence
	A	В	C
1	symbol	Value	Sequence
2	CCR1	5.834	AGTATAAGATGTTATGTCAAAAAATTAAATCTGTAACAAACTAAAGTTTTTCTATCCAAT
3	NPPA	8.133	CTTCCTGCCTTCATCTATCACGATCGATGTTAAATGTAGATGAGTGGTCTAGTGGGGGTCT
4	AQP7	6.537	TCTGTGCCTCTAGAGCACTTCTAAGTAGAGCTTCTCTTTGACCACAACCGTACTGCAATA
5	HVCN1	6.341	TCAGTGCTCACAAATAAAACCTGTCAGGCTTTTCCTCTAAGTACAAGTTAAAGAATTATC
6	GPR33	6.377	CTCACTAAGAGTCAGCCATTACCTTTACACTTGACACTGGGACTTGCAGTGGTGACTATT
7	MAML2	6.542	CATGGCAATACCAAGCCTTTGTTCCATTTTAACTCAGACCAAGCAAACCAGCAGATGCCT
8	PTDSS2	8.207	CTECCT6CCTECATCTATCACGATCGATGTTAAATGTAGATGAGTGGTCTAGTGGGGGTCT
9	LCE1F	6.811	TCTTCGGTCCTTCATGTCTTCATCTGTGAAATGCTGAAATTCTATATCAAGTTCTAAAAC
10	ITFG1	9.783	ATACTAATCCTTGCACAGTAACATAAATGATTTGCTCTCTTGAAAGAAA
11	ELM01	7.057	ACATTTTTTGCCAAACAGATATATATTTAATGAAGAGATACATAAATGTGTGTACTTTCC
12	CRTAC1	6.946	ACGGCACAGCCTGTGTGGCTCAAGTGGCCTTTTTAGGTGGGTACTCATCGGCTGCCTTTA
13	PNPT1	8.106	CTTCTAGCACTITAAATITAGTAGTTGCCGGAGCACCTAAAAGCCAAATTGTTATGTTGG
14	SOX9	10.308	ATAAAACCTTAAAGCGTTCTTATAATATGGCATCTTTCGATTTCTGTATAAAAACAGACC
15	TMEM144	6.5	AGGCATATCGGATCATCCTGTCTAACAATGTCTACTTAATACTATAATCCAGAAAATAGG

Remove duplicated records

• Data > Filter > Advanced Filter > Unique records only

	Microsoft Excel	- contex	t_scores_all_sho	rt_	sorted				Microsoft Excel	- contex	t_scores_all	_short_s	orted				
:2) Eile Edit Vie	w Insert	Format <u>T</u> ools	Dab	a <u>W</u> indow <u>H</u> elp	Adobe F	DE	:e	<u>Eile E</u> dit <u>V</u> ie	w <u>I</u> nsert	Format To	ols <u>D</u> ata	Window	Help Adobe	PDF		
1000					20	0		: •		140	ABC 🔣 🐰	D B	- 3 9	- (* - 1 2)	Σ - ≜↓	Z	111 -5
÷ 🗆) 🞽 🖬 🖪 🔒			Z 🔹	Sort	3	$\Sigma - 2 \downarrow Z \downarrow $	-) 🔁 🐔 🖕		Resea	1					
2.00	9 🔁 🐔 🖕				Eilter	•	AutoEilter		A1 -	£	refseq						
- 6					Validation		Show All			B	C		D	E	F	100	G
_	D15 👻	fx					-	1	refseq	species			start	end	1		<u> </u>
	A	В	C		Text to Columns		Advanced Filter	2	NM_000014		mmu-miR-12	8	1	3 9	1	1	
1		species	miRNA		*				NM_000014		mmu-miR-18			107			
2	NM_000014	10090	mmu-miR-128	-	3	9			NM_000014		mmu-miR-21		ed Filter				
3	NM_000014	10090	mmu-miR-186		96	102			NM_000014		mmu-miR-12	Action -					
4	NM_000014	10090	mmu-miR-216b		76	82			NM_000014 NM_000014		mmu-miR-27 mmu-miR-29	O Filte	r the list, in-p	blace			
5	NM 000014	10090	mmu-miR-128		3	9		8	NM 000014		mmu-miR-29	⊙ Cop	y to another	location			
6	NM 000014	10090	mmu-miR-27b		4	10		9	NM 000014		mmu-miR-32						
7	NM 000014	10090	mmu-miR-291a-5	p	81	87			NM 000014		mmu-miR-32	List range	e: te	d!\$A\$1:\$E\$12	.		
8	NM 000014	10090	mmu-miR-291b-5	p	81	87		11	NM_000014	10090	mmu-miR-33	<u>⊂</u> riteria ra	ange:		.		
	NM 000014		mmu-miR-326	-	74	80			NM 000014	10090	mmu-miR-49	Copy to:	or	t_sorted!\$G\$1			
	NM 000014		mmu-miR-327		48	54		13				1000					
	NM 000014		mmu-miR-330		74	80		14	0			🗹 Uniqu	e <u>r</u> ecords onl	У			
	NM 000014		mmu-miR-494		19	25		16						ок С	ancel		
13						20		17									

1	Microsoft Excel	- contex	t_scores_all_short_s	orted							
:@)	Eile Edit Vie	w <u>I</u> nsert	Format <u>T</u> ools <u>D</u> ata	<u>W</u> indow <u>H</u>	elp Ado <u>b</u> e Pl	DF					
: 🗅	📂 🖬 🖪 🔒		, 1 🦈 🛍 I 🔉 🖻 🖻	- 🍼 🔊 -	(** *) 😣 :	Σ - 2↓	XI 🛄 🛷 10	00% 👻 🕜 💂	Arial	- 10 -	BIU
1	1 😎 🐔 📮										
	G2 -	f _×	NM_000014								
1	A	В	С	D	E	F	G	Н		J	K
1	refseq	species	miRNA	start	end		refseq	species	miRNA	start	end
2	NM 000014	10090	mmu-miR-128	3	9		NM 000014	10090	mmu-miR-128	3	9
3	NM_000014	10090	mmu-miR-186	96	102		NM_000014	10090	mmu-miR-186	96	102
4	NM 000014	10090	mmu-miR-216b	76	82		NM 000014	10090	mmu-miR-216b	76	82
5	NM 000014	10090	mmu-miR-128	3	9		NM 000014	10090	mmu-miR-27b	4	10
6	NM 000014	10090	mmu-miR-27b	4	10		NM 000014	10090	mmu-miR-291a-5p	81	87
7	NM 000014	10090	mmu-miR-291a-5p	81	87		NM 000014	10090	mmu-miR-291b-5p	81	87
8	NM 000014	10090	mmu-miR-291b-5p	81	87		NM 000014	10090	mmu-miR-326	74	80
9	NM 000014	10090	mmu-miR-326	74	80		NM 000014	10090	mmu-miR-327	48	54
10	NM 000014	10090	mmu-miR-327	48	54		NM 000014	10090	mmu-miR-330	74	80
11	NM 000014	10090	mmu-miR-330	74	80		NM 000014	10090	mmu-miR-494	19	25
12	NM_000014	10090	mmu-miR-494	19	25					1	

Move to the last row in a list

• PC:

- First cell in the active column: Ctrl + up arrow
- Last cell in the active column: Ctrl + down arrow
- First cell in the active row:
- Last cell in the active row:
- The very first cell (A1):
- Bottom right corner:
- MAC:
 - use either **Command** or **Control**

Ctrl + left arrow Ctrl + right arrow

Ctrl+ Home Ctrl+ End

Selecting a Range of Cells

- Selecting a large range of cells can be a pain. Here's one trick that could help.
 - To start the selection of a large matrix, start by selecting the bottom right cell of the desired matrix (Ctrl + End)
 - Use "Ctrl + Shift + up arrow" to select everything above the original cell.
 - Use "Ctrl + Shift + left arrow" to select everything to the left of the original cell.
 - Use "Shift + down arrow" to move down one row (to avoid the header line, if present).
 - Use "Shift + right arrow" to move to the right one column (to avoid any ID column(s), if present)

Keep headers constant as you scroll

- Click the first cell in the row below the last row you want to freeze
- Choose Window > Freeze Panes
- To unfreeze frozen rows, choose Window > Unfreeze Panes

×	Microsoft Excel	- contex	_scores_all_sho	rt_sor	ted			
) <u>File E</u> dit <u>V</u> ie	w <u>I</u> nsert	F <u>o</u> rmat <u>T</u> ools	Data	₩in	dow <u>H</u> elp /	Ado <u>b</u> e PDF	
	🛯 🖬 🖬 🔓 着		1 7 🕰 🕺 🗅	8		Compare Side	by Side with Book1	1 🚯 100%
	1 🔁 🐔 🖕					Ereeze Panes		
_	A2 🔻	fx	NM_000014		~	1 context_sco	res_all_short_sorted	
	A	В	C			2 Book1		Н
1	refseq	species	miRNA	start		200	8	
2	NM 000014	10090	mmu-miR-128			J 9		
3	NM_000014	10090	mmu-miR-186		1	96 102		
4	NM_000014	10090	mmu-miR-216b		1	76 82		
5	NM_000014	10090	mmu-miR-27a			4 10		
6	NM 000014	10090	mmu-miR-27b			4 10		
7	NM 000014	10090	mmu-miR-291a-5		1	81 87		
8	NM 000014	10090	mmu-miR-291b-5			31 87		
9	NM 000014	10090	mmu-miR-326		1	74 80		
10	NM 000014	10090	mmu-miR-327		- 3	48 54		
11	NM 000014	10090	mmu-miR-330		1	74 80		
12	NM 000014	10090	mmu-miR-494		1	19 25		
13	NM_000014	10090	mmu-miR-673-5p			5 11		
14	NM_000014	10090	mmu-miR-760		3	27 33		
15	NM_000014	10116	rno-miR-299		1	91 97		

💌 Mi	icrosoft Excel	context_	scores_all_short	t_sorted		
:B)	<u>File Edit V</u> iew	Insert	Format <u>T</u> ools D	ata <u>W</u> indow	<u>H</u> elp Ad	o <u>b</u> e PDF
	🗃 🖬 🖪 🖨	1 🖪 🖪	🖤 🕵 i 🐰 🗈	🔁 = 🥩 =	9 - (2 -	臭 Σ ᠇
1	73 🐔 🖕					
	A2 -	f∡	VM_000014			
	A	В	С	D	E	F
1	refseq	species	miRNA	start	end	
5773	NM_000038	9606	hsa-miR-520d-5p	1977	1983	
5774	NM_000038	9606	hsa-miR-520d-5p	95	101	
5775	NM_000038	9606	hsa-miR-520e	1043	1049	
5776	NM_000038	9606	hsa-miR-520e	1401	1407	
5777	NM_000038	9606	hsa-miR-520g	1403	1409	
5778	NM_000038	9606	hsa-miR-520g	1975	1981	
5779	NM_000038	9606	hsa-miR-520h	1403	1409	
5780	NM_000038	9606	hsa-miR-520h	1975	1981	
5781	NM 000038	9606	hsa-miR-524-5p	1977	1983	
5782	NM_000038	9606	hsa-miR-524-5p	95	101	
5783	NM_000038	9606	hsa-miR-525-5p	133	139	
5784	NM_000038	9606	hsa-miR-543	2034	2040	
5785	NM_000038	9606	hsa-miR-548c-3p	1089	1095	
5786	NM_000038	9606	hsa-miR-548c-3p	1713	1719	

To freeze rows and columns along the top and left edges as you scroll

- Click the cell below and to the right of the rows and columns you want to freeze
- Window > Freeze Panes

📓 Microsoft	Excel - Book1						🛛 Microsof	ft Ex	cel - Book1					
: Eile Edit	: <u>V</u> iew Insert F <u>o</u> rmat <u>T</u> ools <u>D</u> ata	Window Hel	p Ado <u>b</u> e P	DF			📳 Eile 🛛	Edit	<u>View Insert Format Tools Data</u>	<u>W</u> indow <u>H</u> e	lp Ado <u>b</u> e P	DF		
i 🗅 😂 🖬 I	B A A B I 🤊 🛱 I X 🗅 🖪	Compare	Side <u>b</u> y Side	with	1111 -3	100% 👻	i 🗋 💕 🖟	13	🔒 🖪 🖪 🖉 🖏 🗼 🖻 🚨 •	1 1 -	(* + 😣	$\Sigma \rightarrow \begin{array}{c} A \downarrow \\ Z \downarrow \\ A \end{array}$	1 1 4	100% 👻
12 12 18		Ereeze Pa	anes											
C2	v f≈5	✓ <u>1</u> Book1			1		C205		 <i>f</i>_∗ 8.45043 					
A	B		*		F	G	A		В	AS	AT	AU	AV	AW
1 Name	Description	T SJ ALLT	SJ ALL	SJ ALL	SJ ALL	T SJ ALL	1 Name	1	Description	T_SJ_ALL	T_SJ_ALL [®]	SJ_ALL	SJ_ALL	T_SJ_ALL
2 EAM193	hmr miR-125a:bead 101-A	5	5.77132	5	5	5	205 EAM26	2 I	hmr_miR-24:bead_141-C	10.7642	10.4262	10.9083	10.0856	9.1264
3 EAM190	hr miR-10b:bead 102-A	5	5	5	5	8.7955	206 EAM26	1	hmr_miR-23b:bead_142-C	9.78359	9.07827	9.96377	9.06908	8.25569
4 EAM187	hmr miR-107:bead 103-A	5.0407	7.132	6.6815	6.7619	6.7809	207 EAM26	0 ł	hmr_miR-23a:bead_143-C	9.9768	9.20423	10.4016	9.3761	7.91577
5 EAM185	hmr_miR-103:bead_104-A	6.3828	7.3855	6.7113	7.0114	6.997	208 EAM25	6 I	h_miR-220:bead_144-C	5	5	5	5	5
6 EAM181	hmr let-7f:bead 105-A	9.1065	10.2621	9.34724	10.6503	10.4662	209 EAM25	5 I	hmr_miR-22:bead_145-C	6.6803	6.5739	6.9621	5	5.9253
7 EAM179	hmr_let-7d:bead_106-A	5.84517	9.37032	6.9852	10.08	10.1561	210 EAM24	8 ł	hmr_miR-213:bead_146-C	8.0225	7.9829	7.5319	5	7.8359
8 EAM177	mr miR-101b:bead 107-A	5	5	5	5	5	211 EAM24	4 ł	hmr_miR-21:bead_147-C	11.4979	9.46292	10.7102	9.3822	10.8146
9 EAM175	hmr miR-320:bead 108-A	8.07585	9.53403	7.89859	10.3625	10.113	212 EAM24	0 ł	hmr_miR-20:bead_148-C	11.6498	10.3633	10.6687	9.41711	11.3248
10 EAM168	hmr let-7e:bead 109-A	5	5	5	5	5	213 EAM23	7 I	hmr_miR-19b:bead_149-C	11.6564	10.5444	11.0681	10.6726	11.409
11 EAM161	hmr_miR-28:bead_110-A	5	6.0629	5	6.69	5.6269	214 EAM23	3 I	hmr_miR-196a:bead_150-C	6.1346	5.6395	5	5	5
12 EAM160	hmr_miR-26b:bead_111-A	9.05839	10.2495	9.86582	10.6815	9.92463	215 EAM21	4 ł	hm_miR-148a:bead_151-C	5	5	5	5	7.1788
13 EAM155	hmr_miR-136:bead_112-A	5	5	5	5	5	216 EAM21	2	hmr_miR-145:bead_152-C	5	5.0443	5	5	5
14 EAM289	hmr_miR-129:bead_113-A	5	5	5	5	5	217 EAM21	1 ł	hmr_miR-144:bead_153-C	5.31221	6.73872	5	5	5
15 EAM283	mr_miR-211:bead_114-A	5	5	5	5	5	218 EAM21	0	hmr_miR-143:bead_154-C	5	5.233	5	5	5
16 EAM282	m_miR-199b:bead_115-A	5	5	5	5	5	219 EAM20	8 I	hmr_miR-141:bead_155-C	5.3976	5	6.0522	5	5

Sort by more than 3 columns

If you want to sort by columns A B C D E, select the whole spreadsheet, than sort by C D E, than A B. This will result in all five columns being sorted.

🛛 Microsoft	Excel - Book4	
📳 Eile Eo	<mark>lit Y</mark> iew Insert F <u>o</u> rmat <u>T</u> ools <u>D</u> ata <u>W</u> indow	<u>H</u> elp Ado <u>b</u> e PDF
i 🗅 📁 🔒	🖪 🖨 🖪 🖪 🖤 📖 🗼 🖻 🖪 - 🛷 I •	🤈 • (^μ • 🌺 Σ • Ž↓ Ž↓
	10	
A1		
A		D E
1	-0.1 0.97 PPPPPP chr1p31.1	28 - 17817
2	0.00.0000000 14.014	ZZZ3
3	Sort ? 🔀	2 ZZEF1
4	Sort by	2 ZZEF1
5		2 ZZEF1
6	Column C O Ascending	ZYX
7	Then by	ZYX
8		ZYG11B
9	Column D 🔗 O Ascending	ZYG11B
10	O Descending	ZYG11B
11	Then by	ZYG11A
12	Column E 💽 💽 Ascending	ZXDC
13 14		ZXDC ZXDC
14	My data range has	1 ZXDB
16	O Header row 💿 No header row	1 ZXDB
17		/// chrXp11. ZXDA /// ZXDB
18	Options OK Cancel	/// chrXp11. ZXDA /// ZXDB
19	-0.2 0.96 PPPPPP chritog21-	
20		

Microsoft Excel - Book4		
🐏 Eile Edit View Insert Format Iools	<u>D</u> ata <u>W</u> indow <u>H</u> elp	Adobe PDF
i 🗅 🐸 🖬 🖪 🔒 🖪 🖪 🖏 💖 🖏 🗼 🗈	🔁 • 🍼 🤊 • 🝽	- 🤮 E - 🖞
12 12 18 -		
A1 fx -0.18358129		
A B C	D	E
1 -0.2 0.96 PPPPPP	chr10p11	EPC1
2 0.0 0.07 000000		EPC1
3 Sort	2 🞽	EPC1
4 Sort by	2	ABI1
5	2	ABI1
	- 2	ITGB1
	ending 2	ITGB1
8 Then by	2	ITGB1
9 Column B 👽 📀 Ascen	nding 2	ITGB1
10 O Descr	e <u>n</u> ding <mark>2</mark>	SVIL
11 Then by	2	SVIL
12 • O Ascer	nding 2	ZNF33A
	ending 2	ZNF33A
14 My data range has	2	ZNF33A
15 O Header row O No header ro	2	ZNF37A
16 O Header row O No header r	^{ow} 21	CCNY
17	21	CCNY
18 Options OK	Cancel 21	CCNY
19 0.0 T.00 PPPPP	chriup11.21	CCNY
	-L-40-44-94	ODEM

About Formula

Problem: values changed due to an extra column inserted

	Microsoft E	xcel - Book1				
:0)	<u>Eile E</u> dit	<u>V</u> iew <u>I</u> nsert	F <u>o</u> rmat <u>T</u> ools	Data Window	<u>H</u> elp Ado <u>b</u> e	PDF
10	😂 🖬 🛛	2 🔒 😂 🕰 🛯	🤝 🛍 🔏 🖻	a 🕮 - 🥩 🕒	7 - (* - 😣	$\Sigma - \frac{A}{Z} \downarrow$
1	1 72 78 -					
	E2		AVERAGE(B2	:D2)		
	A	В	C	D	E	F
1	Name	exp1	exp2	exp3	AVERAGE	I)
2	COL1A2	1	1	1	1	
3	POSTN	1	1	1	1	
4	COL3A1	1	1	1	1	
5	COL3A1	1	1	1	1	
6	COL4A1	2	2	2	2	
7	COL3A1	2	2		2	
8	SPARC	2	2		2	
9	SPARC	2	2		2	
10	POSTN	5	5		5	
11	IGFBP7	5	5		5	
12	TGFBI	5	5		5	
13	IGFBP7	5	5		5	
14	IGFBP7	5	5		5	
15	TGFBI	5	5	5	5	

	Aicrosoft E	xcel - Book1					
:1	<u>Eile E</u> dit	<u>V</u> iew <u>I</u> nsert I	F <u>o</u> rmat <u>T</u> ools	Data Window	<u>H</u> elp Ado <u>b</u> e	PDF	
: 🗅	🗋 📴 🗔 🕒 🕘 🕲 🖏 💖 🖏 Ι χ 🗈 🛍 - 🕩 I 🔍 - I 😣 Σ - 2↓ Χ						
1	1 72 78 -						
	F2		AVERAGE(B2:	E2)			
	A	В	С	D	E	F	
1	Name	exp1	exp2	NEW	exp3	AVERAGE	
2	COL1A2	1	1	10	1	3.25	
3	POSTN	1	1	10	1	3.25	
4	COL3A1	1	1	.10	1	3.25	
5	COL3A1	1	1	10	1	3.25	
6	COL4A1	2	2	10	2	4	
7	COL3A1	2	2	10	2	4	
8	SPARC	2	2	10	2	4	
9	SPARC	2	2	10	2	4	
10	POSTN	5	5	10	5	6.25	
11	IGFBP7	5	5	10	5	6.25	
12	TGFBI	5	5	10	5	6.25	
13	IGFBP7	5	5	10	5	6.25	
14	IGFBP7	5	5	10	5	6.25	
15	TGFBI	5	5	10	5	6.25	

Solution: Copy →Paste Special→Values

	hicros	oft l	xcel - Boo	ik1			
:8)	Eile	Edit	<u>V</u> iew <u>I</u> r	isert F <u>o</u> l	rmat <u>T</u> ools	Data Window	Help Adobe PDF
10		*	Cu <u>t</u>	Ctrl+X	13. IX 4	a 🙉 - 🥩 I	9 - (* - 😓 D
-	The Copy Ctrl+C						
-	E1 🕰 Paste Ctrl+V		Ctrl+V	AGE			
	A	A Paste Special		С	D	E	
1	Nam		Clear		. 02	exp3	AVERAGE
2	COL		1.1.50 C		1	1	1
3	POS		Delete	<u>D</u> elete Delete Sheet		1	1
4	COL:		Delete Shee			1	1
5	COL:	# 4	Find	Ctrl+F	1	1	1
6	COL4	ara	-		2	2	2
7	COL:		Replace	Ctrl+H	2	2	2
8	SPA		<u>G</u> o To	Ctrl+G	2	2	2 2 2
9	SPA		*		2	2	2
10	POS				- 5	5	5
11	IGFB	P7		5	5	5	5
12	TGFE	FBI 5		5	5	5	
13	IGFB			5	5	5	
14	IGFB	P7		5	5	5	
15	TGFE	31		5	5	5	5

	Microsoft E	xcel - Book1				
:0)	Eile Edit	<u>V</u> iew <u>I</u> nsert	F <u>o</u> rmat <u>T</u> ools	Data Windo	w <u>H</u> elp /	Ado <u>b</u> e PC
10	😂 🖬 🕻	3 3 3 3	🤝 🕰 I 🔏 🗉	a 🕮 - 🍼 I	5-0-	18. 3
1						
	E1		VERAGE			
	A	В	С	D	E	
1	Name	exn1	exp2	exp3	AVERAC	E
2	COL1A2	Paste Special			? 🔀	1
3	POSTN	Paste				1
4	COL3A1		🔿 Validati			1
5	COL3A1			2 73 3		1
6	COL4A1	<u> </u>		pt borders		2 2 2 2 2
7	COL3A1		🔘 Column	widths		2
8	SPARC	○ Formats	🔘 Formula	as and number f	ormats	2
9	SPARC	○ <u>C</u> omments	🔘 Val <u>u</u> es -	and number for	mats	2
10	POSTN	Operation				5
11	IGFBP7	None	O Multiply			5
12	TGFBI	O Add				5
13	IGFBP7	O Subtract	Opivide			
14	IGFBP7	Dubtract				5
15	TGFBI	-	1000			5
16	COL1A2	Skip blanks	Transpo	os <u>e</u>		10
17	MFAP5	-				10
18	LUM	Paste Link	OK	Car	icel	10
19	MFAP5					10

vlookup

Look up values in data list: vlookup

VLOOKUP(lookup_value,table_array,col_index_num, not_exact_match)

- lookup_value : The value to search in the first column of the table array
- table_array: The table to search (containing the value to search for in the first column)
- col_index_num: the column number from which the matching value is returned
- not_exact_match:
 - True/omitted, an exact/approximate match
 - False: an exact match

Vlookup example

1	Microsoft Excel - Microarray_Analysis_data_2_SOLUTION [Read-Only]							
:0)	🕙 Eile Edit View Insert Format Iools Data Window Help Adobe PDF							
10	🗋 😂 🛃 🛃 🛃 🔩 🕵 💖 🎇 🕺 🖓 🕋 🕾 - 🎸 🤊 - 🗠 - 🧶 Σ - 👌 👬 🛄 🛷 100% 🕒 🥥 💂 🗄 Arial							
-	1 🔁 🐔 🚽							
	F2 -		P(\$E2,\$A\$2:\$C\$489	2 FALSE)			
	A	B	C	D	E	F	G	
1	Probe	fetal brain mean	adult brain mean		Probe	fetal brain mean	adult brain mean	
2	100_g_at	5.603044225	7.114704126		1091 at	8.983598873	11.39205046	
3	1039 s at	7.098027859	5.818848604		1160 at	7.845672366	9.368257073	
4	1052 s at	6.935502676	7.634905024		1039 s at	7.098027859	5.818848604	
5	1063_s_at	7.177586401	9.29804292					
6	1091 at	8.983598873	11.39205046		9			
7	1107 s at	6.356422623	8.130576734					
8	1115_at	3.554644254	3.593192039					
9	1160_at	7.845672366	9.368257073					
10	118 at	2.595289217	8.041784791					
11	1194_g_at	5.287191623	1.79435423					
12	1232_s_at	4.275895519	4.241452629					
13	1247_g_at	5.938234238	3.684240951					
14	1264_at	4.638605837	3.465669364		9			
15	1271_g_at	7.456925352	7.19580788					
16	1346_at	8.146894113	12.06442416					

Too complicated?

Try BaRC Submatrix Selector http://iona.wi.mit.edu/bell/submatrix_selector

Macro

• Record macro

1	<u>File E</u> dit	<u>V</u> iew <u>I</u> n	sert F <u>o</u> rmat	Tools	<u>D</u> ata <u>W</u> indow	Help	Adobe PDF	_
	🞽 🖬 🛛	10	🖪 🗳 🛱	M	acro 🔸	•	Macros Alt+F8	• 0
1	12 18 -			D	ata Analysis	•	Record New Macro	
	A2	•	fx		۲		Security	
	А	В	C	D	E	1	Visual Basic Editor Alt+F11	J
1						%	Microsoft Script Editor Alt+Shift+F11	-
2								
4								

• Stop Recording macro

1	<u>File E</u> dit	⊻iew	Insert	Format	Tools	<u>D</u> ata <u>W</u> indov	v <u>H</u> e	elp	Ado <u>b</u> e PDF		
		al	<u>s</u>	🦈 🛍	M	acro	•		<u>M</u> acros	Alt+F8	• @
1	12 🐔 📮	2			D	ata Analysis			Stop <u>R</u> ecording		
-	AB	-	fx			*			Security		
	A	В		C	D	E		2	Visual Basic Editor	Alt+F11	J
1								>	– Microsoft Script <u>E</u>	ditor Alt+Shift+F11	
2	1							æ,	Microsoft Script E	alor Alt-Shirt+FII	
3	2										
4	2										
5	4										
6	5										
7	15	total									
8											

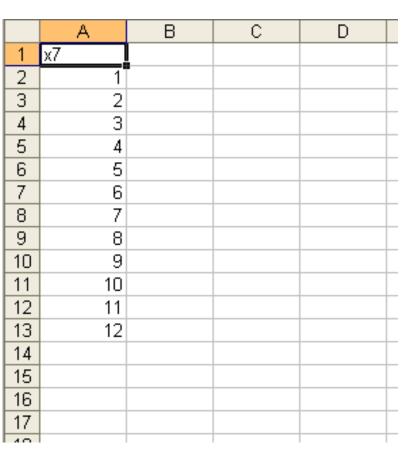
Run macro

🐸 Microsoft Excel	
Eile Edit View Insert Format	Tools Data Window Help Adobe PDF
i d 💕 🖬 🖪 🗿 🗐 🖓 🖤	Macro Macros Alt+F8
· 12 12 13 .	Data Analysis
Chart 1 🔹 🎜	Security
📲 H9again	Visual Basic Editor Alt+F11
A B C	D E Microsoft Script Editor Alt+Shift+F11

RUN_ME.xls!	AddMenus		Run
RUN_ME.xls1 RUN_ME.xls1 RUN_ME.xls1	ClearData		Cancel
RUN_ME.xls!! RUN_ME.xls!!	DeleteMenu GetFilePathAndName		Step Into
RUN_ME.xls!LoadFile			<u>E</u> dit
			Create
		×	Delete
Macros in:	All Open Workbooks	~	Options

Task one

• Open a new page in Microsoft Excel.



- 1. Enter this data as shown in the right cells.
- 2. We are going to make up some Multiplication tables. Click on cell B2.
- 3. Enter the number 7
- 4. Highlight the column from B2 to B13
- 5. On the Menu bar. Select: Edit Fill -Down. The whole column will fill with 7's.
- 6. Click on cell C2. We are going to enter the calculation.

What do we need to enter first?

Task one

	A	В	С	D	
1	х7				
2	1	7		-	
3	2	7			
4	3	7			
5	4	7			
6	5	7			
7	6	7			
8	7	7			
9	8	7			
10	9	7			
11	10	7			
12	11	7			
13	12	7			
14					
15					
16					
17					

=a2*b2

This is because these are the cells with the numbers we want to multiply. Note want happens when you enter the formula.

Now use the same method that you used to FILL column B with 7's to repeat the formula in column C.

Can you remember how?

Task one

	А	В	С	D
1	х7			
2	1	7	7	
3	2	7	14	
4	3	7	21	
5	4	7	28	
6	5	7	35	
7	6	7	42	
8	7	7	49	
9	8	7	56	
10	9	7	63	
11	10	7	70	
12	11	7	77	
13	12	7	84	
14				
15				
16				

If you have done it right, which you will have done!

Your spreadsheet should look like this.

Task Two:

In a new spreadsheet, can you create the 8x table using the techniques we have learned so far.

Task Three

- PE Kit
- You receive a letter from your teacher. It tells you what PE you
- need for the new term.
- You need:

		A	В	С	D	E	F	G	H
	1	Kit	Quantity	Cost	Total for 1	Total for 10	Total for Y6		
	2	T-Shirt	2	£ 4.25					
	3	Shorts	2	£ 5.50					
	4	Trainers	1	£ 22.00					
	5	Socks	2	£ 1.50					
	6	Plimsolls	1	£ 9.00					
	7			Grand Total					
1	8								
	9	Open	a new	document	and enter	this infor	mation		
	0	•		rect cells					
1	1								
1	2								

	Tack	Thro	Δ					
	A	В	C	D	E	F	G	H
1	Kit	Quantity	Cost	Total for 1	Total for 10	Total for Y6		
2	T-Shirt	2	£ 4.25					
3	Shorts	2	£ 5.50					
4	Trainers	1	£ 22.00					
5	Socks	2	£ 1.50					
6	Plimsolls	1	£ 9.00					
7			Grand Total					
8								
9								
10								
11								
12								

With the information shown above you can calculate the cost of you new PE Kit for yourself.

Fill in cells D2, D3, D4, D5 and D6.

Now select cell D7 and click on this symbol on the toolbar $\mathbf{\Sigma}$. Press RETURN and the column total appears 🕠

Use multiplication to fill column E and F, and use Σ to total up the columns.

Task four

- Creating Graphs
- You can use spreadsheets to create graphs of your data.
- Of course you will need some data to make graphs of!

	A	В	С	D	Open a new anneadahaat an					
1	YEAR GROUP	Boys	GIRLS	Total	Open a new spreadsheet ar					
2					set up the columns and row					
3	1				shown here.					
4	2				Now you need to find out h					
5	З				 many boys and how many given are in each year group. 					
6	4				Find out and enter the data					
7	5				 In column D use a formula 1 					
8	6				add up the totals.					
9					Click on B10					
10	Total									
11					Then click on Σ on the					
					toolbar. ——					

Task four

- Creating Graphs
- This tool Σ allows you to add up column totals. Click on B3, hold down the shift

	А	В	C	D
1	YEAR GROUP	Boys	GIRLS	Total
2				
3	1			
4	2			
5	З			
6	4			
7	5			
8	6			
9				
10	Total			
11				

key and click on B8.

The column total should appear in B10.

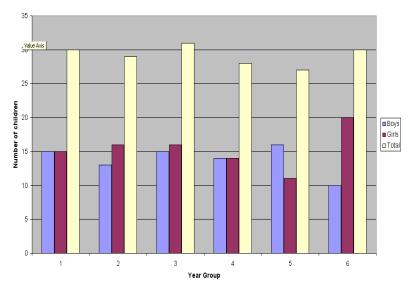
Use this method to complete the rest of this spreadsheet.

Now you are ready to create a graph!

It is easy - but watch carefully!!

Task four												
	A	В	С	D								
1	YEAR GROUP	Boys	GIRLS	Total								
2												
3	1	15	15	30								
4	2	13	16	29								
5	З	15	16	31								
6	4	14	14	28								
7	5	16	11	27								
8	6	10	20	30								
9												
10												
11	Τοται	83	92	175								
12												

Graph to show number of children in each class



- 1. Select the data you are going to graph.
- 2. Now you are ready to create a graph! Find this icon and click it.



- 3. Select the column graph and click NEXT.
- Click the 'Series' tab. Change each series, Series 1 - Boys, Series 2 -Girls, and Series 3 - Total.
- 5. Click NEXT and give your chart a title and label the X and Y axis.
- 6. Click NEXT, choose to place chart in new sheet, then click FINISH.
- 7. Now you can print your chart.

It's that simple!!

Functions for Descriptive Statistics

• Your Excel spreadsheet should now look like this:

C) 🖬 🤊	• (* • 💕 🛊	3 =	Book1 - N	/licrosoft Exc	el.	_ = X
		Insert Page La	ay Formula D	Data Review	View Acr	obat 🞯	- = ×
	aste		A A Alia	nment Numt		Cells	Σ * 27* • А* 2* Editing
	D17		f _x				*
	А	В	С	D	E	F	G 🛣
1		Instructor 1	Instructor 2				
2		3.1	2.5				
3		2.7	3.9				
4		3.2	4.0				
5		2.9	2.4				
6		2.8	2.7				
7		3.0	2.8				=
8		3.3	4.0				
9		2.8	2.6				
10		3.0	3.1				
11		3.2	3.0				
12	mean	3.0	3.1				
13	median	3.0	2.9				
14	mode	3.2	4.0				
15	var	0.04	0.36				
	stdev	0.19	0.60				
17	→ > She	et1 Sheet2	/ Sheet3 /				
Rea		cci onectz			0% 🗩		

Part 2: Correlations and Scatterplots

Correlations

A quick review:

- Every correlation has a *direction* (positive or negative):
 - + correlation: high scores on one variable are associated with high scores on another variable.
 - correlation: high scores on one variable are associated with *low* scores on the other variable.
- Every correlation has a *magnitude* or *strength*:
 - The closer the correlation coefficient is to +1.00 or -1.00, the **stronger** it is.
 - The closer the correlation coefficient is to 0.00, the weaker it is.

Calculating Pearson's r

- Correlations are described using the Pearson Product-Moment correlation statistic, or *r* value.
- In Excel, there are many functions that can calculate a correlation statistic, however, we will only use =PEARSON in this class.

Let's say we want to determine if there is a relationship between number of hours spent per week studying for Psych 209 and GPA earned in the class at the end of the quarter. To do so, we can calculate Pearson's *r* for our two variables.

Enter the following data into Excel:

9	The New York		Book1 - Micro				- = x = x						
Pas Clipb	te 🖋 🖂	bri * 11 *	ut Formulas I = = = = = = = = = = = = = = = = = = = Alignment	General	• • Styles	Σ Cells 2	AT +						
	А	В	С	D	E	F							
1	Student	StudyHrs	GPA										
2	1	42	3.3										
3	2	23	2.9				_						
4	3	31	3.2										
5	4	35	3.2				=						
6	5	16	1.9										
7	6	26	2.4										
8	7	39	3.7										
9	8	19	2.5										
10													
11													
12													
13													
I4 4	Sheet1	Sheet2 Sheet	3 / 🞾	14	.001		> I						
Read	У				124% 🕞		• .:						

StudyHrs = average number of hours spent per week studying for 209

GPA = grade-point average earned in 209 at the end of the quarter

Step 1: Select the cell where you want your *r* value to appear (you might want to label it).

Step 2: Click on the function wizard $t_{f_{*}}$ ton. Step 3: Search for and select PEARSON.

Pa	Home	Calibri	ge Layout • 11 • A A • A •	Formula		view View A	Insert Function
	E5	•					Or select a category: Recommended
	A	В	С	D	E	F	Sele <u>ct a f</u> unction:
1	Student	StudyHrs	GPA				PEARSON
2	1	42	3.3				RSQ INTERCEPT
3	2	23	2.9				SLOPE STEYX
4	3	31	3.2		StudyHrs a	and GPA:	
5	4	35	3.2		2		PEARSON(array1,array2)
6	5	16	1.9		1		Returns the Pearson product moment correlation coefficient, r.
7	6	26	2.4				
8	7	39	3.7				
9	8	19	2.5				
10			1				Help on this function OK Cancel
11							
Rea		et1 / Shee	t2 🖌 She	et3 🔏 🕼		100% 🕞	

Step 4: For Array1, select <u>all</u> the values under StudyHrs. For Array2, select <u>all</u> the values under GPA.

C		- (2 - 12	•	Book1 - M	icrosoft Exc	el			((-	. = X		
0	Home	Insert Pag	ge Layout	Formulas	Data R	eview Vi	ew Acr	obat 🧕) -	a x		
F	ڪ 🗲	Calibri	* 11	-	%	A		Σ *	₹7 -			
		BIU	- A A					₽ - (11 -			
Pa	• 🥑	🖽 • 🔕 •	<u>A</u> -	Alignme	ent Numbe	r Styles	Cells	2-				
Clip	board 🗟	Font		G				Editi	ng			
	B2	÷	. (•	Jx	nction Argum	ents						<u>?</u> ×
1	А	В	С	D	EARSON B2:B	a		IN	= {4	2:23:31:35	5;16;26;39	019}
1	Student	StudyHrs	GPA		rray2	20			= (n	10 10 10 I	5,10,20,05	,,
2	1	42	3.3						_			
3	2	23	2.9	Re	turns the Pear	son product	moment co	relation co		, r.		
4	3	31	3.2				Array1	is a set o	f indepe	endent valu	Jes.	
5	4	35	3.2									
6	5	16	1.9	385	19. 19. 19.							
7	6	26	2.4	For	rmula result =					<u></u>		
8	7	39	3.7	Hel	lp on this funct	ion					ок	Cancel
9	8	19	2.5									
10												
11												
10	► ► She	et1 Shee	t2 / Shee	et3 🖉	- I	4				► I		
	Average: 28	.875	Count: 8	Sum: 231		100%	0	U		(

Step 5: That's it! Once you have your *r* value, don't forget to round to 2 decimal places.

	te la	Insert Calibri B I U 	- A A A -		rmulas Data ■ <mark> =</mark> = ■ = = = = = = = = + = + = + = + = + = + = + =	Number	View , , Style ,			>
	E5	+	0	f _x =	=PEARSON(B	2:B9,C2:C9)			1
1	А	В	С	D	E	F	G	н	J	L
1	Student	StudyHrs	GPA							ſ
2	1	42	3.3							
3	2	23	2.9							
4	3	31	3.2		StudyHrs an	nd GPA:				
5	4	35	3.2		0.88					l
6	5	16	1.9		T T					
7	6	26	2.4							
8	7	39	3.7							
9	8	19	2.5							
10										

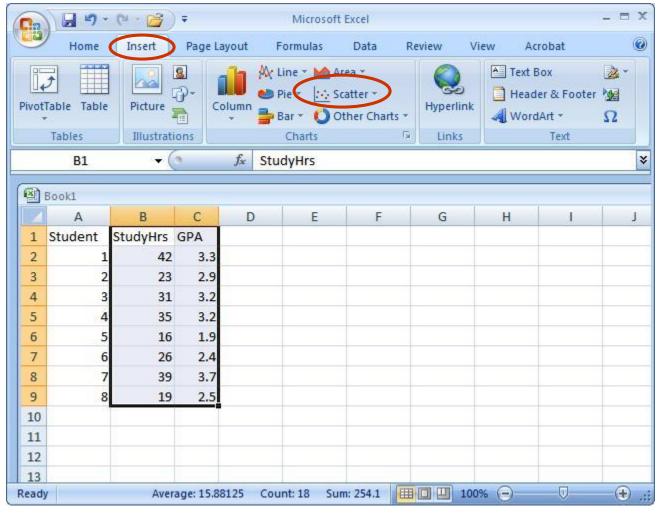
Knowledge check: What does the *r* value of 0.88 tell you about the <u>strength</u> and <u>direction</u> of the correlation between StudyHrs and GPA?

Scatterplots

- A scatterplot is an excellent way to visually display the relationship (correlation) between two variables.
- Each point on the scatterplot represents an individual's data on the two variables.
- We will now create a scatterplot for StudyHrs and GPA.

Step 1: Select <u>both</u> columns of variables you wish to plot (StudyHrs and GPA).

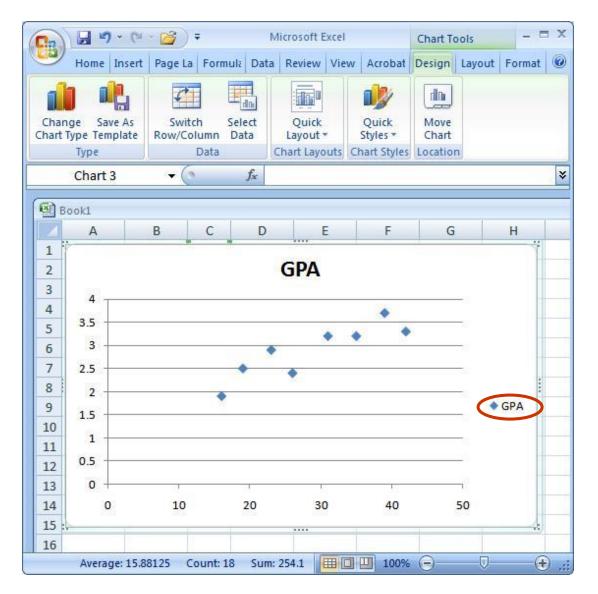
Step 2: Click on the tab labeled 'Insert', and then select 'Scatter' in the 'Charts' menu.



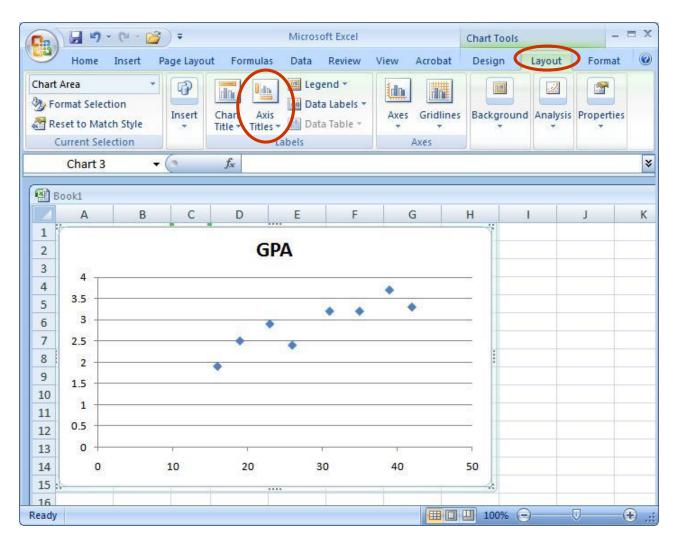
Step 3: Select the first plot in the drop-down menu.

Ca	9-	(~ 😭) ∓	Micro	osoft Excel				- = x
	Home	Insert	Page Layout	Formula	is Data	Review	View	Acrobat	0
Pivot	Table Table		Columi Columi	A Line ▼ Die ▼ Bar ▼ Char	Area *	ts *	link	Text Box Header & Foote WordArt * Text	er 200 Ω
	B1	- (● f _x	StudyHrs	.°°°.	2			*
1	Book1					. 8			
	А	В		D	X Z	St G	ł	4 I	J
1	Student S	StudyHrs	GPA						
2	1	42							_
3	2	23			LMN .				
4	3	31	3.2		All Charl	Tuper			
5	4	35	3.2		An Chan	. types	k		
6	5	16	1.9						_
7	6	26	2.4						
8	7	39	3.7						
9	8	19	2.5						
10									
11									
12									
13	3								-
Ready	/	Aver	age: 15.88125	Count: 18	Sum: 254.1		100% (-		

Step 4: Remove the legend by clicking on it and pressing Delete.



Step 5: Add axis titles by selecting the 'Layout' tab and clicking on 'Axis Titles.' For the horizontal title, you want it below the x-axis. For the vertical title, you want the 'Rotated Title' option.

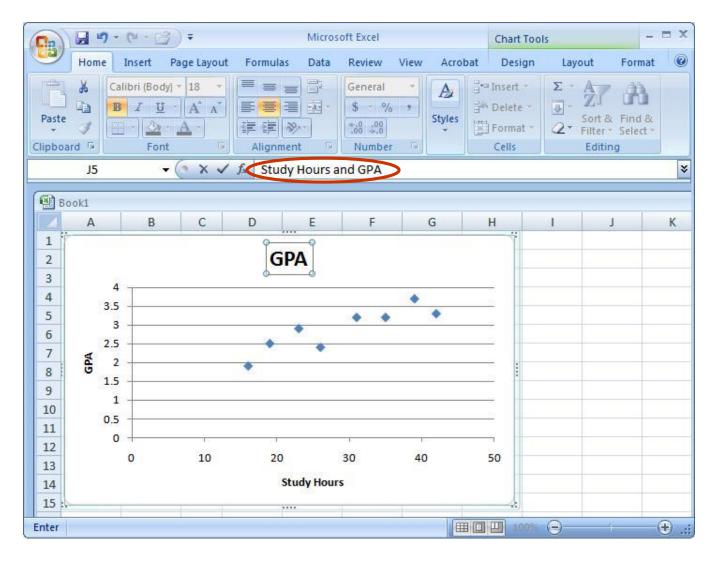


<u>NOTE:</u> Your chart must be highlighted for the 'Layout' tab to appear under 'Chart Tools.'

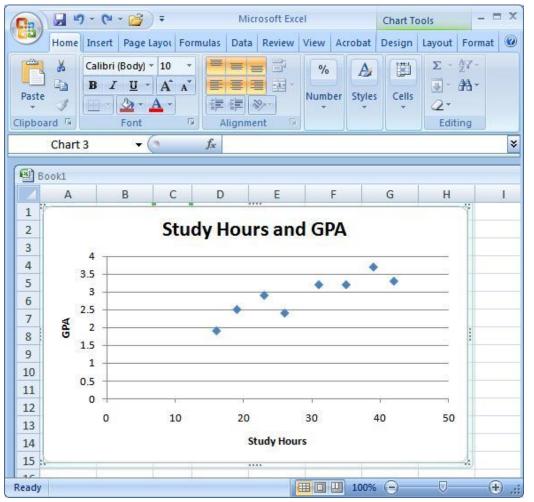
A note about x- and y-axes:

- For scatterplots, it does not matter which variable goes on each axis (this is NOT true for other types of charts).
- However, you need to make sure you label your axes with the proper variable name.
- In this example, GPA is on the y-axis and Study Hours is on the x-axis (we can tell this based on their different ranges of values).
- As a helpful hint, Excel will automatically put the first variable (left-hand column) on the x-axis, and the second variable (right-hand column) on the y-axis.

Step 6: Change the chart title by selecting it, typing a new one, and pressing Enter. Chart and axis titles may be altered by right-clicking on them.



Your scatterplot is now finished!



Remember: Each point in the scatterplot represents an individual's data.

Knowledge check: Identify Student 8 in the scatterplot.

Describing Correlations and Scatterplots

- Scatterplots and correlations are described:
 - As positive or negative.
 - As weak, moderate, or strong.
 - Using the *r* value.
 - <u>Sentence 1</u>: There is a strong, positive correlation (r = 0.88) between the number of hours studied and GPA.
- Then you want to describe the general relationship between the two variables:
 - <u>Sentence 2</u>: More hours of studying for Psych 209 was associated with a higher GPA earned in the class at the end of the quarter.
- NOTE: We cannot say "More studying led to a higher GPA" – this implies *causation*, which *cannot* be determined using correlational research.