

NOT BALL THE SHALL SHA						
	3.2 Intr EXAMP	oduc <u>LE</u> : W	tion /eigh	to S t of F	Stem and emale Stude	Leaf ents
	For our firs	t exam	pie, w	e use i		
	weights of	the 25	femal	e stude	ents.	
DUXBURY	150 14	0 155	19 5	13 9		Now add
THOMSON LEARNING	000 45	7 400	440	400		the
Rochester Institute of Technology	200 15	/ 130	113	130	stem	leaf
Dept of Mathematics & Statistics	121 14	0 140	150	125		
					10	
	135 12	4 130	150	125	11	Mart
	120 10	3 170	124	160	12	Next
		5 170	124	100	× 13	Silde
					14	\backslash
	, ,				15	$\langle \rangle$
• Use the 1st	two digits	as the	stem		16	\backslash
					17	¥
• Use the 3rd	l digit as th	e <u>leaf</u>			18	
					19	
					20	
2			C	opyright © 20	05 Brooks/Cole, a division of	homson Learning, Inc.







	Comparative Stem a Student Weight (Comp When it is desirable to	nd Lea paring tw	f D o g	Diagram <mark>roups</mark>)
THOMSON LEARNING Professor David Crystal Rochester Institute of Technology Dept of Mathematics & Statistics	 compare two groups, back-to-back stem and leaf diagrams are useful. Here is the result from the student weights. What does the comparative stem and leaf show? it is clear that the males weigh more (as a group not necessarily as individuals) than the females. 	<u>Females</u> 3 554410 95000 000 75000 0 5 0	10 11 12 13 14 15 16 17 18 19 20 21	<u>Males</u> 7 145 0004558 00000555 0005556 00005558 000005555 0358 0 0
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	<u>Re</u> <u>GPA exan</u> the 20 advis	peate	he follo a facult	bem – d owing a sy mem	and – I are the ber.	leafs GPAs	for
THOMSON LEARNING Professor David Crystal Rochester Institute of Technology Dept of Mathematics & Statistics	• GPA 3.09 3.72 2.80 ones digit is s (1, 2, and 3	2.04 3.23 1.75 used as t	2.27 3.13 3.89 he sten	3.94 3.50 3.38 1, you 0	3.70 2.26 2.74 only get	2.69 3.15 1.65 three	2.22 2.66
 You can expand this a little by breaking up the stems by using each stem twice letting the 2nd digits 0-4 be a category (L), and the 2nd digits 5-9 be the other category (H). The next slide gives two versions of the stem-and-leaf diagram. 							
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	Tu	Two Repeated Stem-and-leafs			
		Using	GPA Data		
	1L				
	1H	67			
DUXBURY	2 L	0222	<u>Diagram 1</u>		
Professor David Crystal	2 H	6678	• Stem: Ones digit		
Rochester Institute of Technology Dept of Mathematics & Statistics	3г	01123			
	Зн	57789	• Leaf: Tenths digits		
11	.1				
11	65,75		Diagram 2		
21	04,22,	26,27	• Stem: Ones digit		
28	66,69,	74,80	- Stellt: Ones uight		
31	09,13,	15,23,38	• Leaf: Tenths and		
38	50,70,	72,89,94	hundredths digits		
	I				
Note: The ch	aracters	in a stem-	and-leaf diagram must all		
nave the sam	e width,	so if typi	ng use a fixed character		
8 width font s	ucn as co	urier.	Copyright © 2005 Brooks/Cole, a division of Thomson Learning, Inc.		

	3.3 F	Frequen His	cy Dis: stogran	tributions & ns			
	• Discrete numeric data - the frequency tables are similar to those produced for qualitative						
	data.						
Professor David Crystal Rochester Institute of Technology Dept of Mathematics & Statistics	• For example, a survey of local law firms in towns in lowa gave						
	Number						
	of		Relative	Graph it			
	Lawyers	Frequency	Frequency				
	1	11	0.44				
	2	7	0.28				
	3	4	0.16				
	4	2	0.08				
	5	1	0.04				
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	3.3 Histogram for Discrete Data Example: "How many textbooks did you purchase last term?" 50 students were asked this question							
	50 studen	is wer	re asked	this ques	stion.			
THOMSON LEARNING								
Rochester Institute of Technology Dept of Mathematics & Statistics	📽 i ne re	Sult is	s summa	arized bei	ow and			
	The <u>histogram is on the next slide</u> .							
	Num	per of		Relative				
	Textb	ooks H	Frequency	Frequency				
	1 0	r 2	4	0.08				
	3 or 4 16 0.32							
	5 or 6 24 0.48							
	7 o	r 8	6	0.12				
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	Example: "Student Weight Dataset" Here is the Frequency Distribution Choosing a width of 15 we have the following frequency distribution. * We have 10 groups (min:103, max:239, 136/15=10)						
DUXBURY				Relative			
THOMSON LEARNING Professor David Crystal		Class Interval	Frequency	Frequency			
Rochester Institute of Technology Dept of Mathematics & Statistics		100 to <115	2	0.025			
		115 to <130	10	0.127			
		130 to <145	21	0.266			
		145 to <160	15	0.190			
		160 to <175	15	0.190			
		175 to <190	8	0.101			
		190 to <205	3	0.038			
		205 to <220	1	0.013			
		220 to <235	2	0.025			
		235 to <250	2	0.025			
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	<u>3.3 <mark>Cumu</mark></u>	lative Rela	tive Fred	<u>uency Ta</u>	<u>able</u>			
	Example: We will continue to use "Student Weight Data"							
	• If we keep tra	ack of the prop	ortion of tha	t data that fa	lls			
	below the up	oper boundaries	s of the class	ses, we have	a			
DUXBURY	cumulative	relative freque	ency table.					
THOMSON LEARNING								
Professor David Crystal Rochester Institute of Technology				Cumulative				
Dept or mathematics & Statistics			Relative	Relative				
		Class Interval	Frequency	Frequency				
		100 to < 115	0.025	0.025				
		115 to < 130	0.127	0.152				
		130 to < 145	0.266	0.418				
		145 to < 160	0.190	0.608				
		160 to < 175	0.190	0.797				
		175 to < 190	0.101	0.899				
		190 to < 205	0.038	0.937				
		205 to < 220	0.013	0.949				
		220 to < 235	0.025	0.975				
22		235 to < 250	0.025	1.000	earning, Inc.			



